

# SDS

Safety Data Sheets

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Bitumastic 300M (A)	Carboline
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Wilkothane HS Aluminum (729.935)	Wilko
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Wilkothane HS Clear (720.29)	Wilko
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Safety Red Enamel	Sherwin Williams

Recoatable Epoxy Primer - White  
Safety Yellow Enamel  
Epoxy Hardner  
Epoxy Primer (A), Red Oxide  
Reducer No. 15

Sherwin Williams  
Sherwin Williams  
Sherwin Williams  
Sherwin Williams  
Sherwin Williams

**BLASTING**

Black Beauty

By

Harsco Corporation



# SAFETY DATA SHEET

Date Prepared : 04/02/2015

SDS No : 2014-04

Date Revised : 09/09/2015

Revision No : 4

## 1. PRODUCT AND COMPANY IDENTIFICATION

**GENERAL USE:** Abrasives, roofing products and other aggregate uses

**PRODUCT DESCRIPTION:** BLACK BEAUTY®

**PRODUCT CODE:** Coal-Fired Boiler Slag

**PRODUCT FORMULATION NAME:** Abrasive

**GENERIC NAME:** BLACK BEAUTY®

### MANUFACTURER

Harsco Corporation

Metals & Minerals

5000 Ritter Road

Suite 205

Mechanicsburg, PA 17055

**Emergency Contact:** EHS Manager

**Emergency Phone:** 717-506-4666

**Alternate Emergency Phone:** 888-733-3646

**E-Mail:** reedcs@harsco.com

### 24 HR. EMERGENCY TELEPHONE NUMBERS

855-393-9889

Access Code 13793

## 2. HAZARDS IDENTIFICATION

### GHS CLASSIFICATIONS

**Health:**

Not Classified.

**Environmental:**

Not Classified.

**Physical:**

Not Classified.

### EMERGENCY OVERVIEW

**PHYSICAL APPEARANCE:** Solid

**IMMEDIATE CONCERNS:** BLACK BEAUTY® is not flammable, combustible or explosive; and poses no unusual hazard in an unused condition. During use for abrasive blasting, dust may irritate the respiratory tract, skin and eyes; and may cause inflammation and pulmonary fibrosis.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS
Silica, Amorphous	40 - 53	60676-86-0
Aluminum Oxide	17 - 25	1344-28-1
Iron Oxide	5 - 31	1309-37-1
Calcium Oxide	3 - 20	1305-78-8
Magnesium Oxide	0.1 - 7	1309-48-4
Potassium Oxide	0.1 - 3	12136-45-7
Titanium Dioxide	0.1 - 2	13463-67-7
Silica, Crystalline	< 0.1	14808-60-7
Manganese	0.01 - 0.05	7439-96-5
Beryllium	0 - 0.001	7440-41-7
Cadmium	0 - 0.001	7440-43-9

### 4. FIRST AID MEASURES

**EYES:** Do not rub eyes. Remove contact lenses. Flush eyes thoroughly with water, taking care to rinse under eyelids. If irritation continues, continue flushing for 15 minutes, rinsing from time to time under the eyelids. If discomfort continues, consult a physician.

**SKIN:** Wash with soap and water. Get medical attention if irritation develops or persists.

**INGESTION:** Rinse mouth thoroughly if ingested. Do not induce vomiting. If discomfort continues, consult a physician.

**INHALATION:** Move to fresh air. If discomfort continues, consult a physician.

**NOTES TO PHYSICIAN:** Treat symptomatically.

**COMMENTS:** Show this Safety Data Sheet to physician in attendance.

### 5. FIRE FIGHTING MEASURES

**FLAMMABLE CLASS:** This product is non-combustible.

**GENERAL HAZARD:** None known

**EXTINGUISHING MEDIA:** Use fire-extinguishing media appropriate for surrounding materials.

**FIRE FIGHTING PROCEDURES:** Move product containers from fire area if it can be done without risk. Cool containers by flooding with water until heat is dissipated.

**HAZARDOUS DECOMPOSITION PRODUCTS:** None known

### 6. ACCIDENTAL RELEASE MEASURES

**LARGE SPILL:** Avoid runoff into storm sewers and ditches that lead to waterways. Collect spillage using a vacuum equipped with a HEPA filter. If not possible, gently moisten before collecting with shovel and broom. Dispose of collected materials in accordance with Federal, State and local regulations.

**GENERAL PROCEDURES:** Never return spillage and clean-up materials to original product containers.

**RELEASE NOTES:** In the unused form, the material is non-hazardous as defined in state and federal regulations.

**COMMENTS:** Ensure clean-up is conducted by trained personnel wearing appropriate respiratory protection. Avoid inhalation of dust and contact with skin and eyes. Ventilate area if there is excessive airborne dust.



## 7. HANDLING AND STORAGE

**GENERAL PROCEDURES:** Avoid inhalation of dust and contact with skin and eyes. Use only with adequate ventilation. Use work methods that minimize dust production. Keep workplace clean. Observe good industrial hygiene practices.

**HANDLING:** Follow Safety Data Sheet and label precautions.

**STORAGE:** Keep container tightly closed. Store away from incompatible materials.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)					
		EXPOSURE LIMITS			
		OSHA PEL		ACGIH TLV	
Chemical Name		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Silica, Amorphous	TWA	20 mpp [1]	80 / %SiO <sub>2</sub> [1]	[2]	10 [2]
Aluminum Oxide	TWA	[3]	15 [3]		1 R as aluminum metal
Iron Oxide	TWA		10 as iron oxide fume		5
Calcium Oxide	TWA		5		2
Magnesium Oxide	TWA		15 as magnesium oxide fume		10 I
Titanium Dioxide	TWA		15		10
Silica, Crystalline	TWA	[4]	10 / (%SiO <sub>2</sub> + 2) [4]		0.025 R
Manganese	TWA				0.2

**Footnotes:**

1. mpp is millions of particles per ft<sup>3</sup>
2. ACGIH TLV for Particles Not Otherwise Specified is 10 mg/m<sup>3</sup> for inhalable particles and 3 mg/m<sup>3</sup> for respirable particles.
3. PEL is 15 mg/m<sup>3</sup> total dust and 5 mg/m<sup>3</sup> respirable particles (as aluminum metal)
4. Respirable PEL = 10 mg/m<sup>3</sup> / (%SiO<sub>2</sub> + 2) and Total Dust PEL = 30 mg/m<sup>3</sup> / (%SiO<sub>2</sub> + 2)

**ENGINEERING CONTROLS:** Use process enclosures, local exhaust ventilation or other engineering controls to keep airborne levels below recommended exposure limits.

### PERSONAL PROTECTIVE EQUIPMENT

**EYES AND FACE:** Wear safety glasses with side shields. Use tight fitting goggles if dust is generated.

**SKIN:** Use protective gloves. Wear suitable protective clothing.

**RESPIRATORY:** Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

**WORK HYGIENIC PRACTICES:** Wash hands after handling. Routinely wash work clothing and protective equipment. Handle in accordance with good industrial hygiene and safety practice.

**COMMENTS:** Proper and safe use of the material is solely the purchaser's responsibility. The manufacturer extends no warranties and makes no representations as to the suitability of the product for the purchaser's intended purpose or the consequences of purchaser's actions.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**ODOR:** None

**APPEARANCE:** Black, granular solid

**COLOR:** Black

**pH:** 8.2

**FLASH POINT AND METHOD:** Not Available

**FLAMMABLE LIMITS:** Not available

**VAPOR PRESSURE:** Not Available

**VAPOR DENSITY:** Not Available

**BOILING POINT:** Not Available

**FREEZING POINT:** Not Available

**MELTING POINT:** Not Available

**SOLUBILITY IN WATER:** None Expected

**SPECIFIC GRAVITY:** 2.6 - 2.8

**VISCOSITY:** Not Available

**COMMENTS:** For additional information contact manufacturer.

## 10. STABILITY AND REACTIVITY

**STABILITY:** This product is stable and non-reactive under normal conditions of use, storage and transport.

**CONDITIONS TO AVOID:** None known

**POSSIBILITY OF HAZARDOUS REACTIONS:** None

**HAZARDOUS DECOMPOSITION PRODUCTS:** None known

**INCOMPATIBLE MATERIALS:** Hydrofluoric acid

## 11. TOXICOLOGICAL INFORMATION

### ACUTE

**NOTES:** Abrasive blasting agents may cause inflammation and pulmonary fibrosis. Ingestion of dusts generated during working operations may cause nausea and vomiting.

**EYE EFFECTS:** May cause eye irritation.

**SKIN EFFECTS:** May cause skin irritation.

**CHRONIC:** Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

### CARCINOGENICITY

**IARC:** Coal-Fired boiler slag is not listed by IARC.

**NTP:** Coal-Fired boiler slag is not listed by the National Toxicology Program in their Annual Report.

**OSHA:** Coal-Fired boiler slag is not listed by NIOSH on their Occupational Cancer List.

### Notes:

#### ACGIH Carcinogens

- Aluminum oxide (CAS 1344-28-1) A4 Not classifiable as a human carcinogen.
- Beryllium (CAS 7440-41-7) A1 Confirmed human carcinogen.
- Cadmium (CAS 7440-43-9) A2 Suspected human carcinogen.
- Calcium oxide (CAS 1305-78-8) No designation listed.
- Iron oxide (CAS 1309-37-1) A4 Not classifiable as a human carcinogen.
- Magnesium oxide (CAS 1309-48-4) A4 Not classifiable as a human carcinogen.
- Manganese (CAS 7439-96-5) A4 Not classifiable as a human carcinogen.
- Potassium oxide (CAS 12136-45-7) No designation listed.
- Silica, amorphous (CAS 7631-86-9) No designation listed.

- Titanium dioxide (CAS 13463-67-7) A4 Not classifiable as a human carcinogen.

#### IARC Monographs. Overall Evaluation of Carcinogenicity

- Aluminum oxide (CAS 1344-28-1) Not listed.
- Beryllium (CAS 7440-41-7) Group 1. Monographs 58 and 100C (2012).
- Cadmium (CAS 7440-43-9) Group 1. Monographs 58 and 100C (2012).
- Calcium oxide (CAS 1305-78-8) Not listed.
- Iron oxide (CAS 1309-37-1) Not listed.
- Magnesium oxide (CAS 1309-48-4) Not listed.
- Manganese (CAS 7439-96-5) Not listed.
- Potassium oxide (CAS 12136-45-7) Not listed.
- Silica, amorphous (CAS 7631-86-9) Not listed.
- Titanium dioxide (CAS 13463-67-7) Group 2B. Monographs 47 and 93 (2010).

#### US NTP Report on Carcinogens

- Beryllium (CAS 7440-41-7) Known to be a human carcinogen.
- Cadmium (CAS 7440-43-9) Known to be a human carcinogen.

**CORROSIVITY:** None known

**SENSITIZATION:** Not a skin or respiratory sensitizer.

**NEUROTOXICITY:** None known

**GENETIC EFFECTS:** None known

**REPRODUCTIVE EFFECTS:** None known

**TARGET ORGANS:** Irritation of nose and throat. Irritation of eyes and mucous membranes. May cause respiratory tract irritation. Shortness of breath.

**TERATOGENIC EFFECTS:** None known

**MUTAGENICITY:** None known

**COMMENTS:** Although manufacturer has taken reasonable care in the preparation of this Safety Data Sheet, no warranties are made. Manufacturer makes no representations and assumes no responsibility as to the accuracy or suitability of the Safety Data Sheet for the applications intended by the purchaser.

#### 12. ECOLOGICAL INFORMATION

**ENVIRONMENTAL DATA:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

**ECOTOXICOLOGICAL INFORMATION:** This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**BIOACCUMULATION/ACCUMULATION:** This product is not bioaccumulating.

**DISTRIBUTION:** Not available

**AQUATIC TOXICITY (ACUTE):** None known

**CHEMICAL FATE INFORMATION:** Not available

#### 13. DISPOSAL CONSIDERATIONS

**DISPOSAL METHOD:** Dispose in accordance with all applicable regulations.

**GENERAL COMMENTS:** TCLP testing of unused product indicates that it is not hazardous waste by characteristic.

**14. TRANSPORT INFORMATION****DOT (DEPARTMENT OF TRANSPORTATION)**

**OTHER SHIPPING INFORMATION:** Unused product is not regulated as a hazardous material by DOT.

**COMMENTS:** Unused product is not regulated as dangerous goods by the International Air Transport Association (IATA), International Maritime Dangerous Goods (IMDG) or Transport Canada (TDG).

**15. REGULATORY INFORMATION****UNITED STATES****SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**

**311/312 HAZARD CATEGORIES:** Hazardous Chemical.

**FIRE:** No **PRESSURE GENERATING:** No **REACTIVITY:** No **ACUTE:** No **CHRONIC:** Yes

**313 REPORTABLE INGREDIENTS:** Aluminum oxide (CAS 1344-28-1)

**302/304 EMERGENCY PLANNING**

**EMERGENCY PLAN:** None

**CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT)**

Chemical Name	Wt. %	CERCLA RQ
Beryllium	0 - 0.001	10

**CERCLA RQ:** None

**TSCA (TOXIC SUBSTANCE CONTROL ACT)**

Chemical Name	CAS
Silica, Amorphous	60676-86-0
Aluminum Oxide	1344-28-1
Iron Oxide	1309-37-1
Calcium Oxide	1305-78-8
Magnesium Oxide	1309-48-4
Potassium Oxide	12136-45-7
Titanium Dioxide	13463-67-7
Silica, Crystalline	14808-60-7
Manganese	7439-96-5
Beryllium	7440-41-7

**CLEAN AIR ACT**

**40 CFR PART 68—RISK MANAGEMENT FOR CHEMICAL ACCIDENT RELEASE PREVENTION:** None

**OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)**

**29 CFR 1910.119—PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS:** None

**CALIFORNIA PROPOSITION 65:** WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

**RCRA STATUS:** Not regulated.

**OSHA HAZARD COMM. RULE:** Regulated.

**CLEAN WATER ACT:** Not covered by any water quality criteria under Section 304.

**CARCINOGEN:** Boiler slag is not listed by IARC, NIOSH or the NTP as a known or suspected carcinogen. However based

upon the presence of beryllium and cadmium, the product would be classified as a Category 2 Carcinogen pursuant to the GHS Classification System.

**CANADA****WHMIS HAZARD SYMBOL AND CLASSIFICATION**

Not Controlled.

**WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM):** Not controlled.

**WHMIS CLASS:** This product has been classified in accordance with the hazard criteria of the CPR and the Safety Data Sheet contains all of the information required by the CPR.

**DOMESTIC SUBSTANCE LIST (INVENTORY):** Listed on Inventory.

**MEXICO** This Safety Data Sheet has been prepared in accordance with the Official Mexican Standard (NOM-018-STPS-2000).

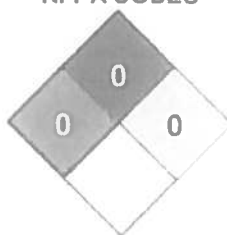
**16. OTHER INFORMATION**

Date Revised: 09/09/2015

**REVISION SUMMARY:** This SDS replaces the 09/09/2015 SDS. Revised: **Section 16: HMIS RATING - HEALTH.**

**HMIS RATING**

HEALTH	<input type="checkbox"/>	0
FLAMMABILITY		0
PHYSICAL HAZARD		0
PERSONAL PROTECTION		A

**NFPA CODES**

Starblast

By

DuPoint

# Material Safety Data Sheet



## DuPont™ Starblast® XL

Version 3.2

Revision Date 09/30/2013

Ref. 130000030940

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DuPont™ Starblast® XL  
MSDS Number : 130000030940

Product Use : Abrasive blasting, Sand blasting

Manufacturer : DuPont  
1007 Market Street  
Wilmington, DE 19898

Product Information : 1-302-774-1000  
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)  
Transport Emergency : CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

Other information : professional use

### SECTION 2. HAZARDS IDENTIFICATION

#### Emergency Overview

The product, as shipped, poses a minimal inhalation health hazard because the bulk of the particles are in the non-inhalable size range. However, if during handling or use the particles are broken down to a size that can be inhaled, the dusts may be harmful to the respiratory system. Product dust may be irritating to eyes, skin and respiratory system.

#### Potential Health Effects

Repeated exposure  
Quartz

: DuPont has classified this material as a known human carcinogen. May cause cancer after repeated inhalation of spray or dust. Adverse effects from repeated inhalation may include: Chronic lung disease with alterations in lung function or difficulty breathing

Carcinogenicity  
Material

IARC	NTP	OSHA
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Quartz

1	X	
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Material Safety Data Sheet



**DuPont™ Starblast® XL**

Version 3.2

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Rutile (TiO2)

2B

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS-No.	Concentration
Staurolite	12182-56-8	88 - 92 %
Iron titanate	12022-71-8	4 - 6 %
Zircon	14940-68-2	1 - 3 %
Rutile (TiO2)	1317-80-2	0.5 - 1.5 %
Kyanite	1302-76-7	0.5 - 1.5 %
Quartz (non-inhalable)	14808-60-7	0.1 - 1 %
Quartz	14808-60-7	0.01 - 0.05 %

**SECTION 4. FIRST AID MEASURES**

Skin contact : Wash off with soap and water.

Eye contact : Rinse with plenty of water.



# Material Safety Data Sheet



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- Inhalation : Remove person to fresh air. If signs/symptoms continue, get medical attention.
- Ingestion : No specific intervention is indicated. Consult a physician if necessary.

### SECTION 5. FIREFIGHTING MEASURES

- Flammable Properties  
Flash point : does not flash
- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Firefighting Instructions : The product itself does not burn.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- Safeguards (Personnel) : Avoid breathing dust.
- Spill Cleanup : Pick up and arrange disposal without creating dust. After cleaning, flush away traces with water.
- Accidental Release Measures : Do not flush into surface water or sanitary sewer system.

### SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Avoid formation of additional inhalable particles. If handling inhalable particulates, use of gloves and washing before eating, drinking, applying cosmetics or smoking is advisable to minimize dust inhalation or ingestion of residue from hands.  
Avoid breathing dust. Wash hands before breaks and at the end of workday.
- Handling (Physical Aspects) : This is a fully oxidized mineral product. As such it cannot support combustion

# Material Safety Data Sheet



## DuPont™ Starblast® XL

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or participate in a dust explosion.

Storage : Keep container tightly closed in a dry and well-ventilated place.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Use sufficient ventilation to keep employee exposure below recommended limits. If using this product as an abrasive blast agent in confined areas, airborne dust levels should be controlled by physical enclosure of the abrasive blasting operation. The enclosure should be exhaust ventilated in accordance with 29 CFR 1910.94 Ventilation (a) Abrasive blasting.

Personal protective equipment  
Respiratory protection : A certified air-purifying respirator with a type 100 (high efficiency) particulate cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a certified positive pressure air-supplied respirator in circumstances where air-purifying respirators may not provide adequate protection. For abrasive blasting use a type CE abrasive-blast supplied-air respirator covering head, neck, and shoulders to provide protection from rebound abrasive per 29 CFR 1910.94 (a)(5).

Evaluations as to which personnel may require respiratory protection should include consideration of potential exposure to bystanders near dust generating activities such as, for example, abrasive blasting.

Eye protection : Wear safety glasses with side shields.

Skin and body protection : Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants, and jacket.

Protective measures : The stated hazards of this material are based on non-inhalable particles that are the bulk fraction of the delivered product. However, if during handling or use the particles are broken down to the inhalable or respirable size range, the dusts may be harmful to the respiratory system. Inhalable quartz is an IARC Category 1 carcinogen and applicable exposure limits should be referenced.

Exposure Guidelines  
Exposure Limit Values

Material Safety Data Sheet



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Zircon

PEL:	(OSHA)	5 mg/m3	8 hr. TWA as Zr
TLV	(ACGIH)	5 mg/m3	TWA as Zr
TLV	(ACGIH)	10 mg/m3	STEL as Zr

Quartz

PEL:	(OSHA)	2.4 millions of particles per cubic foot of air	TWA
		Respirable.	
		Remarks	The exposure limit is calculated from the equation, $250/(\%SiO_2+5)$ , using a value of 100% SiO <sub>2</sub> . Lower percentages of SiO <sub>2</sub> will yield higher exposure limits.
PEL:	(OSHA)	0.1 mg/m3	TWA Respirable.
		Remarks	The exposure limit is calculated from the equation, $10/(\%SiO_2+2)$ , using a value of 100% SiO <sub>2</sub> . Lower percentages of SiO <sub>2</sub> will yield higher exposure limits.
PEL:	(OSHA)	0.3 mg/m3	TWA Total dust.
		Remarks	The exposure limit is calculated from the equation, $30/(\%SiO_2+2)$ , using a value of 100% SiO <sub>2</sub> . Lower values of % SiO <sub>2</sub> will give higher exposure limits.
TLV	(ACGIH)	0.025 mg/m3	TWA Respirable fraction.
AEL *	(DUPONT)	0.01 mg/m3	12 hr. TWA Respirable dust.
AEL *	(DUPONT)	0.02 mg/m3	8 hr. TWA Respirable dust.

Rutile (TiO<sub>2</sub>)

PEL:	(OSHA)	15 mg/m3	AEL * Total dust.
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# Material Safety Data Sheet



## DuPont™ Starblast® XL

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Revision Date 09/30/2013

Ref. 130000030940

TLV	(ACGIH)	10 mg/m <sup>3</sup>	AEL * Total dust.
AEL *	(DUPONT)	10 mg/m <sup>3</sup>	8 & 12 hr. TWA Total dust.
AEL *	(DUPONT)	5 mg/m <sup>3</sup>	8 & 12 hr. TWA Respirable dust.
Kyanite TLV	(ACGIH)	1 mg/m <sup>3</sup>	TWA Respirable fraction.

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: Solid form, crystalline
Color	: red brown
Odor	: odourless
Melting point/range	: 1,370 °C (2,498 °F)
Specific gravity	: 3.7
Water solubility	: insoluble

### SECTION 10. STABILITY AND REACTIVITY

Stability	: Stable
Incompatibility	: None.

### SECTION 11. TOXICOLOGICAL INFORMATION

DuPont™ Starblast® XL Inhalation	: The objective of the study was to compare the lung toxicity of a set of abrasive substitutes for silica dust (garnet, staurolite, coal slag, specular hematite, and treated sand) to that of blasting sand. Rats
-------------------------------------	--



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were intratracheally instilled with 2.5 or 10 mg/kg of the various test substances and pulmonary toxicity endpoints were measured at 4 weeks postexposure. The biomarkers included lung inflammation and cytotoxicity endpoints. In addition, the investigators measured alveolar macrophage activation. The results indicated that blasting sand produced evidence of pulmonary toxicity/inflammation and lung fibrosis. Garnet, staurolite, and treated sand exposures induced pulmonary hazard effects and inflammation that were viewed as similar to blasting sand, while coal slag instillation produced greater pulmonary damage and inflammation than blasting sand. In contrast, specular hematite did not significantly increased levels of inflammation and cytotoxicity and did not stimulate macrophage activation. [Hubbs AF et al., Toxicological Sciences volume 61: 135-143, 2001]

The results of this study should be viewed as a preliminary, screening-type pulmonary toxicity study which utilized very high, overload doses. Subsequently, the NIOSH researchers followed up on the Hubbs et al., study with another lung toxicity screening study of blasting agents ["Comparative pulmonary toxicity of blasting sand and five substitute abrasive blasting agents" – DW Porter et al., J Toxicol Environ Health A 65:1121-40, 2002]. The additional test substances included steel grit, copper slag, nickel slag, crushed glass and olivine. The authors reported that steel grit produced less lung toxicity than blasting sand or any of the other abrasive blasting substitutes

Iron titanate

- Skin irritation : No skin irritation, animals (unspecified species)
- Eye irritation : No eye irritation, animals (unspecified species)
- Skin sensitization : Does not cause skin sensitisation., animals (unspecified species)

Rutile (TiO2)

- Oral LD50 : > 5,000 mg/kg , rat
- Skin irritation : No skin irritation, rabbit
- Eye irritation : No eye irritation, rabbit
- Skin sensitization : Did not cause sensitisation on laboratory animals., mouse  
Did not cause sensitisation on laboratory animals., guinea pig

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- Repeated dose toxicity : Oral rat  
No toxicologically significant effects were found.
- Inhalation rat  
No toxicologically significant effects were found.
- Carcinogenicity : In lifetime inhalation studies rats were exposed for 2 years to respectively 10, 50 and 250 mg/m<sup>3</sup> of respirable TiO<sub>2</sub>. Slight lung fibrosis was observed at 50 and 250 mg/m<sup>3</sup> levels. Microscopic lung tumours were also observed in 13 percent of the rats exposed to 250 mg/m<sup>3</sup>, an exposure level that caused lung overloading and impairment of rat lungs clearance mechanisms.  
In further studies, these tumours were found to occur only under particle overload conditions in a uniquely sensitive species, the rat, and have little or no relevance for humans. The pulmonary inflammatory response to TiO<sub>2</sub> particles exposure was also found to be much more severe in rats than in other rodent species.  
In February 2006, IARC has re-evaluated Titanium dioxide as pertaining to Group 2B: "possibly carcinogenic to humans", based upon inadequate evidence in humans and sufficient evidence in experimental animals for the carcinogenicity of titanium dioxide. IARC evaluation guidelines consider the generation of tumours, in 2 different studies within the same animal species, to be adequate criteria for an assessment of sufficient evidence.  
The conclusions of several epidemiology studies on more than 20000 TiO<sub>2</sub> industry workers in Europe and the USA did not suggest a carcinogenic effect of TiO<sub>2</sub> dust on the human lung. Mortality from other chronic diseases, including other respiratory diseases, was also not associated with exposure to TiO<sub>2</sub> dust.  
Based upon all available study results, DuPont scientists conclude that titanium dioxide will not cause lung cancer or chronic respiratory diseases in humans at concentrations experienced in the workplace.
- Mutagenicity : Did not cause genetic damage in animals.  
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
- Further information : The toxicological data has been taken from products of similar composition.

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### Quartz (non-inhalable)

- Dermal : No adverse effects expected.
- Oral ALD - Approximate Lethal Dose : > 11,000 mg/kg , rat
- Skin irritation : No skin irritation, animals (unspecified species)
- Eye irritation : slight irritation, animals (unspecified species)
- Skin sensitization : Did not cause sensitisation on laboratory animals., animals (unspecified species)
- Mutagenicity : Did not cause genetic damage in cultured bacterial cells.  
Did not cause genetic damage in animals.  
Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others.
- Reproductive toxicity : No adverse effects expected.

### Quartz

- Dermal : No adverse effects expected.
- Oral ALD - Approximate Lethal Dose : > 11,000 mg/kg , rat
- Skin irritation : No skin irritation, animals (unspecified species)
- Eye irritation : slight irritation, animals (unspecified species)
- Skin sensitization : Did not cause sensitisation on laboratory animals., animals (unspecified species)
- Repeated dose toxicity : Inhalation  
Fluid retention in lungs (pulmonary oedema), lung effects, Inflammation, Chronic lung disease, Fibrosis
- Carcinogenicity : An increased incidence of tumours was observed in laboratory animals.  
An increased risk of cancer in humans has been shown in workplace-based studies.
- Mutagenicity : Did not cause genetic damage in cultured bacterial cells.  
Did not cause genetic damage in animals.  
Genetic damage in cultured mammalian cells was observed in some

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Reproductive toxicity : laboratory tests but not in others.  
: No adverse effects expected.

### SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity  
Rutile (TiO<sub>2</sub>)  
96 h LC50 : Pimephales promelas (fathead minnow) > 1,000 mg/l  
72 h EC50 : Pseudokirchneriella subcapitata (green algae) 61 mg/l  
48 h EC50 : Daphnia magna (Water flea) > 1,000 mg/l  
Additional ecological information : not applicable

### SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal : Dispose of in accordance with local regulations.

### SECTION 14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

### SECTION 15. REGULATORY INFORMATION

EINECS (EU) Status : On the inventory, or in compliance with the inventory  
TSCA (US) Status : On the inventory, or in compliance with the inventory  
AICS (AU) Status : On the inventory, or in compliance with the inventory



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- DSL (CA) Status : On the inventory, or in compliance with the inventory  
ENCS (JP) Status : On the inventory, or in compliance with the inventory  
KECI (KR) Status : On the inventory, or in compliance with the inventory  
PICCS (PH) Status : On the inventory, or in compliance with the inventory  
IECSC (CN) Status : On the inventory, or in compliance with the inventory  
HSNO (NZ) Status : Exempt
- Other regulations : These products are exempt from Nuclear Regulatory Commission (NRC) regulations for source material per 10 CFR 40, since it falls under the definition of "unimportant quantity source material" containing less than 0.05% uranium or thorium. Some states may apply NRC type radiation protection standards for NORM above background levels, or may have NORM specific regulations that are determined based upon the radium content. It is recommended that you consult with current regulations.
- SARA 313 Regulated Chemical(s) : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
- California Prop. 65 : **WARNING!** This product contains a chemical or chemicals known to the State of California to cause cancer. Quartz , Radionuclides  
The listing of titanium dioxide (rutile) is for "airborne, unbound particles of respirable size." The listing is not applicable to titanium dioxide when it remains bound within a product matrix.
- PA Right to Know Regulated Chemical(s) : Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Quartz , Rutile (TiO<sub>2</sub>)
- NJ Right to Know Regulated Chemical(s) : Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Quartz

### SECTION 16. OTHER INFORMATION

#### HMIS

Health : 1  
Flammability : 0  
Reactivity/Physical hazard : 0  
PPE : Personal Protection rating to be

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supplied by user depending on use conditions.

Restrictions for use : Do not use DuPont materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative. You may also request a copy of the DuPont POLICY Regarding Medical Applications and DuPont CAUTION Regarding Medical Applications.

These products may not be directly added to food or pharmaceuticals and are not recommended for use in medical devices or cosmetics.

Starblast® is a registered trademark of E.I. du Pont de Nemours and Company.

Starblast® XL contains trace quantities of naturally occurring radioactive uranium and thorium (less than or equal to 10 ppm uranium plus 70 ppm thorium = 80 ppm total U + Th or 0.008 % w/w, equivalent to 11 pCi/g or less), and radium (less than or equal to 11 pCi/g). Naturally Occurring Radioactive Material, namely uranium, thorium, and their decay products, including radium, is commonly referred to as "NORM".

The main radiological hazard from the product is internal exposure from small amounts of alpha particles given off by inhaled dust. Industrial hygiene practices aimed at control of airborne dust can lessen the potential for exposure. Overexposure by inhalation to inhaled dusts containing radioactive uranium, thorium, and radium may cause lung cancer. Low level gamma radiation in proximity to bulk or bagged stockpiles of these products may present a lesser, external exposure that can be managed by limiting close proximity for long time periods to large volumes of material.

With respect to dust exposure, evaluation and calculation based upon dosimetry (ICRP 68) yield the following guidance to ensure that inhalation intake is less than a 100 mrem/yr public dose reference point for radionuclides.

For a total dust with aerodynamic diameter of 1  $\mu\text{m}$ , the calculated reference dust level is 17.4 mg/m<sup>3</sup>. For a total dust with aerodynamic diameter of 5  $\mu\text{m}$ , the calculated reference dust level is 27.0 mg/m<sup>3</sup>. For a total dust with aerodynamic diameter of 10  $\mu\text{m}$ , the calculated reference dust level is 39.8 mg/m<sup>3</sup>.

The calculations noted above are based upon 8 hr/day TWAs. It should be noted that for these products, the actual particle physical diameter is approximately 1/2 the effective aerodynamic diameter. For these products, as shipped, with essentially no particles as small as calculated above, the highest total dust level can provide a conservative limit. However, if during handling or use the particles are broken down to finer particle sizes, lower levels of total dust would apply.

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These reference calculations for radionuclides may or may not provide the most conservative recommendation vs. other trace contaminants as compared to specific country dust contaminant limit calculations. It is recommended that the user compare and calculate or measure for specific contaminants vs. reference limits, especially if particles are broken down, to determine the most appropriate standard for protection.

Please see [www2.dupont.com/Titanium\\_Technologies/en\\_US/](http://www2.dupont.com/Titanium_Technologies/en_US/) for the latest version of this MSDS.

Contact person : MSDS Coordinator DuPont Titanium Technologies; Wilmington, DE 19898;  
Telephone (800) 441-9485

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.

Starblast  
By  
Chemours

# Safety Data Sheet



## Staurolite Products

Version 4.2

Revision Date 03/25/2016

Ref. 150000002242

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Staurolite Products
Product Grade/Type	:	Biasill™ Staurolite Sand Blasting Abrasive, Starblast™ Blasting Abrasive
Product Use	:	Abrasive blasting, Sand blasting, For industrial use only.
Restrictions on use	:	Do not use product for anything outside of the above specified uses
Manufacturer/Supplier	:	The Chemours Company TT, LLC. 1007 Market Street Wilmington, DE 19899 United States of America
Product Information	:	1-844-773-CHEM (outside the U.S. 1-302-773-1000)
Medical Emergency	:	1-866-595-1473 (outside the U.S. 1-302-773-2000)
Transport Emergency	:	CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)
Other information	:	professional use

### SECTION 2. HAZARDS IDENTIFICATION

Not classified as a hazardous substance or mixture according to the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard 2012.

#### Other hazards

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The product, as shipped, poses a minimal inhalation health hazard because the bulk of the particles are in the non-inhalable size range. However, if during handling or use the particles are broken down to a size that can be inhaled, the dusts may be harmful to the respiratory system., Use appropriate Personal Protective Equipment (PPE) such as an air supplied respirator approved for sandblasting., Product dust may be irritating to eyes, skin and respiratory system., Wash hands before breaks and at the end of workday.

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 100 %

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS-No.	Concentration
Staurolite	12182-56-8	85 - 90 %
Ilmenite (FeTiO <sub>3</sub> )	12168-52-4	<=10 %
Rutile	1317-80-2	<=5 %
Zircon	14940-68-2	<=3 %
Kyanite	1302-76-7	<=2 %
Quartz (non-inhalable)	14808-60-7	0.1 - 3 %
Quartz	14808-60-7	0.01 - 0.09 %

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#### **SECTION 4. FIRST AID MEASURES**

- General advice : Call a physician if symptoms occur.
- Inhalation : Remove person to fresh air. If signs/symptoms continue, get medical attention.
- Skin contact : Wash off with soap and water.
- Eye contact : Rinse with plenty of water.
- Ingestion : No specific intervention is indicated. Consult a physician if necessary.
- Most important symptoms/effects, acute and delayed : irritant effects
- Protection of first-aiders : No special precautions are necessary for first aid responders.
- Notes to physician : No special protective equipment required.

#### **SECTION 5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : None known.
- Specific hazards : Not a fire or explosion hazard.
- Special protective equipment for firefighters : No special protective equipment required.
- Further information : The product itself does not burn.



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### SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- Safeguards (Personnel) : Avoid breathing dust.
- Environmental precautions : Do not flush into surface water or sanitary sewer system.
- Spill Cleanup : Pick up and arrange disposal without creating dust. After cleaning, flush away traces with water.
- Accidental Release Measures : For disposal considerations see section 13.

### SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Avoid formation of additional inhalable particles. If handling inhalable particulates, use of gloves and washing before eating, drinking, applying cosmetics or smoking is advisable to minimize dust inhalation or ingestion of residue from hands. Avoid breathing dust. Wash hands before breaks and at the end of workday.
- Handling (Physical Aspects) : This is a fully oxidized mineral product. As such it cannot support combustion or participate in a dust explosion.
- Dust explosion class : Not applicable
- Storage : No special storage conditions required.
- Storage period : No applicable data available.
- Storage temperature : No applicable data available.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION



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**Engineering controls** : Use sufficient ventilation to keep employee exposure below recommended limits. If using this product as an abrasive blast agent in confined areas, airborne dust levels should be controlled by physical enclosure of the abrasive blasting operation. The enclosure should be exhaust ventilated in accordance with 29 CFR 1910.94 Ventilation (a) Abrasive blasting.

**Personal protective equipment**  
**Respiratory protection** : For abrasive blasting use a type CE abrasive-blast supplied-air respirator covering head, neck, and shoulders to provide protection from rebound abrasive per 29 CFR 1910.94 (a)(5).  
  
A certified air-purifying respirator with a type 100 (high efficiency) particulate cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a certified positive pressure air-supplied respirator in circumstances where air-purifying respirators may not provide adequate protection. Provide adequate ventilation.  
Evaluations as to which personnel may require respiratory protection should include consideration of potential exposure to bystanders near dust generating activities such as, for example, abrasive blasting.

**Eye protection** : Wear safety glasses with side shields.

**Skin and body protection** : Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants, and jacket.

**Protective measures** : The stated hazards of this material are based on non-inhalable particles that are the bulk fraction of the delivered product. However, if during handling or use the particles are broken down to the inhalable or respirable size range, the dusts may be harmful to the respiratory system. Inhalable quartz is an IARC Category 1 carcinogen and applicable exposure limits should be referenced.

### Exposure Guidelines Exposure Limit Values

Rutile (TiO <sub>2</sub> ) Permissible	(OSHA)	15 mg/m <sup>3</sup>	AEL * Total dust.
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exposure limit: TLV	(ACGIH)	10 mg/m3	AEL * Total dust.
Zircon			
Permissible exposure limit:	(OSHA)	5 mg/m3	8 hr. TWA as Zr
TLV	(ACGIH)	5 mg/m3	TWA as Zr
TLV	(ACGIH)	10 mg/m3	STEL as Zr
Kyanite			
TLV	(ACGIH)	1 mg/m3	TWA Respirable fraction.
Quartz (non-inhalable)			
Permissible exposure limit:	(OSHA)	2.4 millions of particles per cubic foot of air	TWA
		Respirable.	
		Remarks	The exposure limit is calculated from the equation, $250/(\%SiO_2+5)$ , using a value of 100% SiO <sub>2</sub> . Lower percentages of SiO <sub>2</sub> will yield higher exposure limits.
Permissible exposure limit:	(OSHA)	0.1 mg/m3	TWA Respirable.
		Remarks	The exposure limit is calculated from the equation, $10/(\%SiO_2+2)$ , using a value of 100% SiO <sub>2</sub> . Lower percentages of SiO <sub>2</sub> will yield higher exposure limits.
Permissible exposure limit:	(OSHA)	0.3 mg/m3	TWA Total dust.
		Remarks	The exposure limit is calculated from the equation, $30/(\%SiO_2+2)$ , using a value of 100% SiO <sub>2</sub> . Lower values of % SiO <sub>2</sub> will give higher exposure limits.
TLV	(ACGIH)	0.025 mg/m3	TWA Respirable fraction.
Quartz			
Permissible exposure limit:	(OSHA)	2.4 millions of particles per cubic foot of air	TWA
		Respirable.	

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Permissible exposure limit:	(OSHA)	0.1 mg/m3	Remarks The exposure limit is calculated from the equation, $250/(\%SiO_2+5)$ , using a value of 100% SiO <sub>2</sub> . Lower percentages of SiO <sub>2</sub> will yield higher exposure limits. TWA Respirable.
Permissible exposure limit:	(OSHA)	0.3 mg/m3	Remarks The exposure limit is calculated from the equation, $10/(\%SiO_2+2)$ , using a value of 100% SiO <sub>2</sub> . Lower percentages of SiO <sub>2</sub> will yield higher exposure limits. TWA Total dust.
TLV	(ACGIH)	0.025 mg/m3	Remarks The exposure limit is calculated from the equation, $30/(\%SiO_2+2)$ , using a value of 100% SiO <sub>2</sub> . Lower values of % SiO <sub>2</sub> will give higher exposure limits. TWA Respirable fraction.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	: solid
Form	: Solid form, crystalline
Color	: red brown
Odor	: odourless
Odor threshold	: Not applicable
pH	: Not applicable
Melting point/freezing point	: Melting point 1,370 °C (2,498 °F)
Boiling point/boiling range	: Not applicable

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Flash point	: does not flash
Evaporation rate	: Not applicable
Flammability (solid, gas)	: The product is not flammable.
Upper explosion limit	: Not applicable
Lower explosion limit	: Not applicable
Vapor pressure	: Not applicable
Vapor density	: Not applicable
Specific gravity (Relative density)	: 3.7
Water solubility	: insoluble
Solubility(ies)	: Not applicable
Partition coefficient: n-octanol/water	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not applicable
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable

#### SECTION 10. STABILITY AND REACTIVITY

Reactivity	: None reasonably foreseeable.
Chemical stability	: Stable
Possibility of hazardous	: None known.



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reactions  
 Conditions to avoid : Not applicable

Incompatible materials : None known.

Hazardous decomposition products : Not applicable

**SECTION 11. TOXICOLOGICAL INFORMATION**

Staurolite Products

Inhalation

: The objective of the study was to compare the lung toxicity of a set of abrasive substitutes for silica dust (garnet, staurolite, coal slag, specular hematite, and treated sand) to that of blasting sand. Rats were intratracheally instilled with 2.5 or 10 mg/kg of the various test substances and pulmonary toxicity endpoints were measured at 4 weeks postexposure. The biomarkers included lung inflammation and cytotoxicity endpoints. In addition, the investigators measured alveolar macrophage activation. The results indicated that blasting sand produced evidence of pulmonary toxicity/inflammation and lung fibrosis. Garnet, staurolite, and treated sand exposures induced pulmonary hazard effects and inflammation that were viewed as similar to blasting sand, while coal slag instillation produced greater pulmonary damage and inflammation than blasting sand. In contrast, specular hematite did not significantly increased levels of inflammation and cytotoxicity and did not stimulate macrophage activation. [Hubbs AF et al., Toxicological Sciences volume 61: 135-143, 2001]

The results of this study should be viewed as a preliminary, screening-type pulmonary toxicity study which utilized very high, overload doses. Subsequently, the NIOSH researchers followed up on the Hubbs et al., study with another lung toxicity screening study of blasting agents ["Comparative pulmonary toxicity of blasting sand and five substitute abrasive blasting agents" – DW Porter et al., J Toxicol Environ Health A 65:1121-40, 2002]. The additional test substances included steel grit, copper slag, nickel slag, crushed glass and olivine. The authors reported that steel grit produced less lung toxicity than blasting sand or any of the other abrasive blasting substitutes

Ilmenite (FeTiO3)



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- Skin irritation : No skin irritation, animals (unspecified species)
- Eye irritation : No eye irritation, animals (unspecified species)
- Skin sensitization : Does not cause skin sensitisation., animals (unspecified species)
- Rutile
  - Oral LD50 : > 5,000 mg/kg , Rat
  - Skin irritation : No skin irritation, Rabbit
  - Eye irritation : No eye irritation, Rabbit
  - Skin sensitization : Did not cause sensitisation on laboratory animals., Mouse  
Did not cause sensitisation on laboratory animals., Guinea pig
  - Repeated dose toxicity : Oral  
Rat  
-  
No toxicologically significant effects were found.  
  
Inhalation  
Rat  
-  
No toxicologically significant effects were found.
  - Carcinogenicity : Not classifiable as a human carcinogen.  
In lifetime inhalation studies rats were exposed for 2 years to respectively 10, 50 and 250 mg/m<sup>3</sup> of respirable TiO<sub>2</sub>. Slight lung fibrosis was observed at 50 and 250 mg/m<sup>3</sup> levels. Microscopic lung tumours were also observed in 13 percent of the rats exposed to 250 mg/m<sup>3</sup>, an exposure level that caused lung overloading and impairment of rat lungs clearance mechanisms.  
In further studies, these tumours were found to occur only under particle overload conditions in a uniquely sensitive species, the rat, and have little or no relevance for humans. The pulmonary inflammatory response to TiO<sub>2</sub> particles exposure was also found to be much more severe in rats than in other rodent species.  
The conclusions of several epidemiology studies on more than 20000



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TiO2 industry workers in Europe and the USA did not suggest a carcinogenic effect of TiO2 dust on the human lung. Mortality from other chronic diseases, including other respiratory diseases, was also not associated with exposure to TiO2 dust. Based upon all available study results, Chemours scientists conclude that titanium dioxide will not cause lung cancer or chronic respiratory diseases in humans at concentrations experienced in the workplace.

Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects.
Reproductive toxicity	:	Animal testing showed no reproductive toxicity.
Teratogenicity	:	Animal testing showed no developmental toxicity.
Further information	:	The toxicological data has been taken from products of similar composition.
Quartz (non-inhalable)		
Dermal	:	No adverse effects expected.
Oral ALD - Approximate Lethal Dose	:	> 11,000 mg/kg , Rat
Skin irritation	:	No skin irritation, animals (unspecified species)
Eye irritation	:	slight irritation, animals (unspecified species)
Skin sensitization	:	Did not cause sensitisation on laboratory animals., animals (unspecified species)
Mutagenicity	:	Animal testing did not show any mutagenic effects. Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others. Did not cause genetic damage in cultured bacterial cells.
Quartz		
Oral LD50	:	> 11,000 mg/kg , Rat Bloody nasal discharge Weight loss



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- Skin irritation : No skin irritation, Rabbit
- Eye irritation : No eye irritation, Rabbit
- Skin sensitization : Does not cause skin sensitisation., Guinea pig
- Repeated dose toxicity : Inhalation  
Rat  
-  
Target Organs: Lungs  
The substance or mixture is classified as specific target organ toxicant, repeated exposure, Category 2.  
Fluid retention in lungs (pulmonary oedema), lung effects, Inflammation, Chronic lung disease, Fibrosis
- Carcinogenicity : Human carcinogen.  
An increased incidence of tumours was observed in laboratory animals.  
An increased risk of cancer in humans has been shown in workplace-based studies.

**Carcinogenicity**

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

Material	IARC	NTP	OSHA
Rutile (TiO2)	2B		

**SECTION 12. ECOLOGICAL INFORMATION**

Aquatic Toxicity  
Rutile



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96 h LC50	:	Pimephales promelas (fathead minnow) > 1,000 mg/l
72 h EC50	:	Pseudokirchneriella subcapitata (green algae) > 100 mg/l
48 h EC50	:	Daphnia magna (Water flea) > 1,000 mg/l
Additional ecological information	:	Not applicable

### SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product	:	Dispose of in accordance with local regulations.
Contaminated packaging	:	Dispose of in accordance with local regulations.

### SECTION 14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

### SECTION 15. REGULATORY INFORMATION

AICS (AU) Status	:	On the inventory, or in compliance with the inventory
DSL (CA) Status	:	On the inventory, or in compliance with the inventory
ENCS (JP) Status	:	On the inventory, or in compliance with the inventory
KECI (KR) Status	:	On the inventory, or in compliance with the inventory
PICCS (PH) Status	:	On the inventory, or in compliance with the inventory
IECSC (CN) Status	:	On the inventory, or in compliance with the inventory
ISHL (JP) Status	:	On the inventory, or in compliance with the inventory
NZIOC Status	:	On the inventory, or in compliance with the inventory
TSCA	:	On the inventory, or in compliance with the inventory



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- Other regulations : These products are exempt from Nuclear Regulatory Commission (NRC) regulations for source material per 10 CFR 40, since it falls under the definition of "unimportant quantity source material" containing less than 0.05% uranium or thorium. Some states may apply NRC type radiation protection standards for NORM above background levels, or may have NORM specific regulations that are determined based upon the radium content. It is recommended that you consult with current regulations.
- SARA 313 Regulated Chemical(s) : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
- PA Right to Know Regulated Chemical(s) : Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Rutile (TiO<sub>2</sub>), Quartz (non-inhalable)
- NJ Right to Know Regulated Chemical(s) : Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Rutile (TiO<sub>2</sub>), Quartz (non-inhalable)
- California Prop. 65 : WARNING! This product contains a chemical or chemicals known to the State of California to cause cancer. Quartz, Rutile (TiO<sub>2</sub>), Radionuclides

### SECTION 16. OTHER INFORMATION

- Restrictions for use : Do not use or resell Chemours™ materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless agreed to by Seller in a written agreement covering such use. For further information, please contact your Chemours representative.

These products may not be directly added to food or pharmaceuticals and are not recommended for use in medical devices or cosmetics.

Starblast™ and Biasill™ are trademarks of The Chemours Company TT, LLC.  
Staurolite Products contain trace quantities of naturally occurring radioactive uranium and thorium (less than or equal to



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25 ppm uranium plus 175 ppm thorium = 200 ppm total U + Th or 0.02 % w/w, equivalent to 28 pCi/g or less), and radium (less than or equal to 28 pCi/g). Naturally Occurring Radioactive Material, namely uranium, thorium, and their decay products, including radium, is commonly referred to as "NORM".

The main radiological hazard from the product is internal exposure from small amounts of alpha particles given off by inhaled dust. Industrial hygiene practices aimed at control of airborne dust can lessen the potential for exposure. Overexposure by inhalation to inhaled dusts containing radioactive uranium, thorium, and radium may cause lung cancer. Low level gamma radiation in proximity to bulk or bagged stockpiles of these products may present a lesser, external exposure that can be managed by limiting close proximity for long time periods to large volumes of material.

With respect to dust exposure, evaluation and calculation based upon dosimetry (ICRP 68) yield the following guidance to ensure that inhalation intake is less than a 100 mrem/yr public dose reference point for radionuclides.

For a total dust with aerodynamic diameter of 1  $\mu\text{m}$ , the calculated reference dust level is 6.9 mg/m<sup>3</sup>. For a total dust with aerodynamic diameter of 5  $\mu\text{m}$ , the calculated reference dust level is 10.8 mg/m<sup>3</sup>. For a total dust with aerodynamic diameter of 10  $\mu\text{m}$ , the calculated reference dust level is 15.9 mg/m<sup>3</sup>.

The calculations noted above are based upon 8 hr/day TWAs. It should be noted that for these products, the actual particle physical diameter is approximately 1/2 the effective aerodynamic diameter. For these products, as shipped, with essentially no particles as small as calculated above, the highest total dust level can provide a conservative limit. However, if during handling or use the particles are broken down to finer particle sizes, lower levels of total dust would apply.

These reference calculations for radionuclides may or may not provide the most conservative recommendation vs. other trace contaminants as compared to specific country dust contaminant limit calculations. It is recommended that the user compare and calculate or measure for specific contaminants vs. reference limits, especially if particles are broken down, to determine the most appropriate standard for protection.

Please see [www.Chemours.com/Titanium\\_Technologies/en\\_US/](http://www.Chemours.com/Titanium_Technologies/en_US/) for the latest version of this MSDS.

Revision Date : 03/25/2016

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.



**Staurolite Products**

Version 4.2

Revision Date 03/25/2016

Ref. 150000002242

Black Lightning

By

Gibbco Inc.

# Safety Data Sheet

## Black Lightning® Coal Slag

Date of Preparation: 8/22/12

### 1. Chemical Product and Company Identification

**Product/Chemical Name:** All grades of Blasting Abrasives Manufactured for Marco Inc. by Gibbco Inc.

**Synonyms:** Boiler Slag

**CAS Number:** Mixture

**General Use:** Media for abrasive blasting.

**Company Identification:** Gibbco Inc.  
617 Shepherd Drive  
Cincinnati, OH 45215

**Phone:** 513-733-8088    **Emergency Phone:** 513-300-9452

### 2. Hazards Identification

#### Potential Health Effects

**Routes of Entry:** Inhalation, eyes, skin.

**Target Organs:** Skin, Eyes, and Respiratory System

#### Acute Effects

**Inhalation:** Prolonged exposure may result in irritation of the respiratory tract. Prolonged exposure may decrease pulmonary function.

**Eye:** Prolonged exposure may result in irritation or injury.

**Skin:** Prolonged contact may result in irritation.

**Ingestion:** May be harmful if swallowed. Immediately contact physician or medical personnel if unusual coughing, tightness in chest, or shortness of breath occurs after exposure.

**Carcinogenicity:** IARC, NTP, and OSHA do not list Boiler Slag as a carcinogen; however, IARC and NTP list Crystalline Silica and Beryllium as a carcinogen.

#### Medical Conditions Aggravated by Long-Term Exposure

**Chronic Effects:** Persistent exposure to airborne dust may harm lungs and decrease pulmonary functions. Exposure may result in irritation to eyes, skin, or the respiratory tract. Mixture contains components which may cause cancer.

**Pictogram:** Exclamation Mark

### 3. Composition / Information on Ingredients

<u>Components</u>	<u>Amount</u>	<u>CAS Number</u>	<u>OSHA PEL</u> <u>(mg/m<sup>3</sup>)</u>	<u>ACGIH TLV</u> <u>(mg/m<sup>3</sup>)</u>
Amorphous Silica	50% - 55%	7631-86-9	$\frac{30\text{mg/m}^3}{\% \text{SiO}_2 + 2}$ <sup>(R)</sup>	Not Available
Crystalline Silica	< 1%	14808-60-7	$\frac{30\text{mg/m}^3}{\% \text{SiO}_2 + 2}$ <sup>(T)</sup>	0.025
Aluminum Oxide	15% - 40%	1344-28-1	15 <sup>(T)</sup> ; 5 <sup>(R)</sup>	1
Iron Oxide	1% - 60%	1309-37-1	10	5
Titanium Dioxide	0% - 5%	13463-67-7	15	10
Calcium Oxide	0% - 30%	1305-78-8	5	2
Magnesium Oxide	0% - 6%	1309-48-4	15	10
Barium	0.475%	7440-39-3	0.5	0.5
Beryllium	.00029%	7440-41-7	0.002	0.00005

(R) - Respirable Dust

(T) - Total Dust

### 4. First Aid Measures

**Inhalation:** Remove to fresh air. Get medical attention if irritation persists.

**Eye Contact:** Flush eyes with large amounts of water for 15 minutes or until irritation subsides. Remove contact lenses. Hold eyelids apart to ensure thorough cleansing. Get medical attention if condition persists.

**Skin Contact:** Flush exposed areas thoroughly with soap and water until all product is removed. Remove contaminated clothing and launder before reuse. If irritation persists, get medical attention.

**Ingestion:** If individual is conscious, give large quantities of water to dilute stomach contents. Do not induce vomiting. Do not attempt to give anything by mouth to a drowsy or unconscious person. Get prompt medical attention.

After first aid, get appropriate in-plant, paramedic, or community medical support.

### 5. Fire-Fighting Measures

Boiler slag is nonflammable and non-explosive. Flash point, flammable limits, extinguishing media, special firefighting procedures, and unusual fire and explosion hazards are not applicable to these materials.

### 6. Accidental Release Measures

**Spill /Leak Procedures:** No special procedures required for clean-up, but it is recommended that this is done mechanically or through the use of hand tools. Wetting with water will reduce any airborne dust.

### 7. Handling and Storage

**Recommended Storage Conditions:** Protect against physical damage. Store in a cool, dry well ventilated location, out of direct sunlight. Do not create unnecessary airborne dust when handling. Industrial hygiene surveys of worker exposure in specific boiler slag handling operations are needed to determine the need for engineering controls of airborne dust levels, respiratory protection equipment, and other measures. Under certain conditions, such as handling in confined areas, without adequate ventilation trace metal oxides (including arsenic, and iron) may exceed the OSHA permissible exposure limits and require personal protective equipment.

**Shelf Life:** See packaging label.

**Handling Personnel:** Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink or smoke in work area. Wash thoroughly after handling.

## Section 8 - Exposure Controls / Personal Protection

**Airborne Exposure Limits:** See section 2 above.

**Ventilation:** Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs when feasible (Sec. 2).

**Respiratory Protection:** Respiratory protection is selected based on a hazard assessment of the work location, including the specific airborne agents, the concentration of the agents, and the permissible exposure limits (PELs). Selection of respiratory protection must follow the requirements in OSHA's Respiratory Protection Standard, 29 CFR 1910.134. Where respirators are required, you must have a written program covering the basic requirements in the OSHA respirator standard. These include training, fit testing, medical approval, cleaning, maintenance, cartridge change schedules, etc. See 29CFR1910.134 for details.

**Protective Clothing/Equipment:** Wear protective clothing to prevent repeated or prolonged skin contact with product. Safety glasses with side shields should be worn as minimum protection from potential impact. Goggles should be worn when excessively dusty conditions are present or anticipated. The use of hard hats and steel toe shoes are advised. Gloves may be worn to protect from abrasions, cuts, or scrapes as well as long sleeve shirts to minimize dermal exposure and potential skin irritation.

**Safety Stations:** Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

**Comments:** Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the restroom, or applying cosmetics.

## Section 9 - Physical and Chemical Properties

**Appearance and Odor:** Granular, uniform shiny black, no apparent odor.

**Vapor Pressure:** NA

**Vapor Density (Air=1):** NA

**Specific Gravity (H<sub>2</sub>O=1):** 2.5-3.0

**Boiling Point:** NA

**Melting Point:** NA

**Evaporation Rate:** NA

**Solubility in Water:** NA

## Section 10 - Stability and Reactivity

**Stability:** Stable

**Polymerization:** NA

**Chemical Incompatibilities:** NA

**Conditions to Avoid:** NA

**Hazardous Decomposition Products:** NA

## Section 11 - Toxicological Information

### Toxicity Data:

Exposure to and contact from dust may irritate the respiratory system, eyes, or skin. Boiler Slag is not listed on the NTP, IARC, or OSHA list of carcinogens, however some components of Boiler Slag are known carcinogens. If ingested, it may cause nausea and vomiting.

## Section 12 - Ecological Information

**Ecotoxicity:** The main component(s) of this product are not anticipated to cause any adverse effects to plants or animals.

## Section 13 - Disposal Considerations

**Disposal of Substance:** Material may be disposed of as an inert solid in an appropriate solid waste landfill. See applicable Federal, State, and Local Regulations.



## Section 14 - Transport Information

### DOT Transportation Data (49 CFR 172.101):

This product is not classified as a hazardous material under U.S. DOT regulations.

Shipping Name: Not Regulated

Hazard Class: N/A

ID No.: N/A

Packing Group: N/A

Label: N/A

Special Provisions (172.102): N/A

### Packaging Authorizations

a) Exceptions: N/A

b) Non-bulk Packaging: N/A

c) Bulk Packaging: N/A

## Section 15 - Regulatory Information

### EPA Regulations:

RCRA Hazardous Waste Number: Not a RCRA hazardous substance

CERCLA: Not a CERCLA hazardous substance

### OSHA Regulations:

Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): Not listed

OSHA Specifically Regulated Substance (29CFR 1910): Not listed

State Regulations: None

## Section 16 - Other Information

Prepared By: KERAMIDA Inc.

Approval Date: August 22, 2012

Supersedes Date: 5/23/02

### ADDITIONAL INFORMATION:

The data in this Safety Data Sheet relates only to the specific material designated herein. It does not relate to use in combination with any other material or in any process. This Safety Data Sheet (SDS) has been reviewed to fully comply with the guidance contained in the OSHA.

**Disclaimer:** Gibbco believes, to the best of its knowledge, information and belief, the information contained herein to be current, accurate, and reliable as of the issue date of this Material Safety Data Sheet (MSDS). Because the use of this information and the conditions of handling, use, and storage of these materials are beyond Gibbco's control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials and make no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. Also, all abrasive products from natural sources are likely to contain trace amounts of metals and other elements. The information and recommendations contained in this MSDS are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and data and to comply with all applicable laws and regulations. Additionally, normal PPE (personal protective equipment) practices are always recommended to further reduce any personal risk associated with the use of this product.

**Blackblast**  
**By**  
**Opta Minerals Inc.**

# Blackblast

## SECTION 1. IDENTIFICATION

**Product Identifier** Blackblast  
**Other Identification** Crushed coal slag  
**Recommended Use** Blasting media.  
**Restrictions on Use** Use only as directed.  
**Manufacturer / Supplier** Opta Minerals Inc., 407 Parkside Drive  
P.O. Box 260, Waterdown, Ontario, Canada, L0R 2H0, (905) 689-7361,  
www.optaminerals.com  
**Emergency Phone No.** CHEMTREC (Canada & USA), 1-800-424-9300, 24 hours  
CHEMTREC, (outside North America), 1-703-527-3887, 24 hours  
**SDS No.** 0009951

## SECTION 2. HAZARDS IDENTIFICATION

### GHS Classification

Carcinogenicity - Category 1A, Specific target organ toxicity (repeated exposure) - Category 1

### GHS Label Elements



Danger

May cause cancer or damage to respiratory system through prolonged or repeated exposure by inhalation.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	Other Identifiers
Fused Silica	60676-86-0	~46.5	SiO <sub>2</sub>
Aluminum oxide	1344-28-1	~22.5	Al <sub>2</sub> O <sub>3</sub>
Iron Oxide	1309-37-1	~19	Fe <sub>2</sub> O <sub>3</sub>
Calcium oxide, reacted	1305-78-8	~5.5	CaO
Magnesium oxide	1309-48-4	~1.0	MgO
Titanium Dioxide	13463-67-7	~1.0	TiO <sub>2</sub>
Silica, crystalline quartz	14808-60-7	0.1-0.6	SiO <sub>2</sub>
Beryllium	7440-41-7	<0.001	Be
Cadmium	7440-43-9	<0.001	Cd

## SECTION 4. FIRST-AID MEASURES

### First-aid Measures

#### Inhalation

Move to fresh air. If experiencing respiratory symptoms (e.g. coughing, shortness of breath, wheezing), call a

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**Date of Preparation** December 03, 2014

Poison Centre or doctor.

#### **Skin Contact**

Wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 5 minutes.

#### **Eye Contact**

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open.

If eye irritation persists, get medical advice/attention.

#### **Ingestion**

Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. Call a Poison Centre or doctor if you feel unwell or are concerned.

#### **Most Important Symptoms and Effects, Acute and Delayed**

May cause mild to severe irritation due to mechanical abrasion.

May irritate or cause inflammation or pulmonary fibrosis of the respiratory system.

#### **Immediate Medical Attention and Special Treatment**

##### **Target Organs**

Respiratory system.

## **SECTION 5. FIRE-FIGHTING MEASURES**

### **Extinguishing Media**

#### **Suitable Extinguishing Media**

Not combustible. Use extinguishing agent suitable for surrounding fire.

#### **Unsuitable Extinguishing Media**

Not applicable.

### **Specific Hazards Arising from the Chemical**

Does not burn.

This product presents no unusual hazards in a fire situation.

Not known to generate any hazardous decomposition products in a fire.

### **Special Protective Equipment and Precautions for Fire-fighters**

No special precautions are necessary.

## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

### **Personal Precautions, Protective Equipment, and Emergency Procedures**

Use the personal protective equipment recommended in Section 8 of this safety data sheet. Review Section 7 (Handling) of this safety data sheet before proceeding with clean-up.

### **Environmental Precautions**

Although this product is not classified as an environmentally hazardous material, large or frequent spills may cause potential problems.

### **Methods and Materials for Containment and Cleaning Up**

Avoid generating dust. Collect using shovel/scoop or approved HEPA vacuum and place in a suitable container for disposal.

## **SECTION 7. HANDLING AND STORAGE**

### **Precautions for Safe Handling**

Avoid generating dusts. Wear personal protective equipment to avoid direct contact with this chemical.

### **Conditions for Safe Storage**

Store in an area that is: dry.

---

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Fused Silica			0.1 mg/m3 *			
Aluminum oxide	1 mg/m3 * A4		5 mg/m3 *			
Iron Oxide	5 mg/m3 * A4		10 mg/m3 *			
Calcium oxide, reacted	2 mg/m3		5 mg/m3			
Magnesium oxide	10 mg/m3 * A4		15 mg/m3			
Titanium Dioxide	10 mg/m3		15 mg/m3			
Silica, crystalline quartz	0.025 mg/m3 * A2					
Beryllium	0.00005 mg/m3 * A1		0.002 mg/m3			
Cadmium	0.002 mg/m3 * A2		0.005 mg/m3			

\* respirable total dust, OSHA (PEL)= 15 mg/m3 crystalline Silica, ACGIH, TWA, 0.10 mg / m3 (ACGIH), 0.025 mg /m3, respirable.

### Appropriate Engineering Controls

Do not allow product to accumulate in the air in work or storage areas, or in confined spaces. Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air.

### Individual Protection Measures

#### Eye/Face Protection

Wear chemical safety goggles and face shield when contact is possible. Do not get in eyes.

#### Skin Protection

Avoid repeated or prolonged skin contact. Always wear insulated protective clothing, if contact is possible.

#### Respiratory Protection

Wear a NIOSH approved air-purifying respirator with N95 or higher rating filter(s).

In conditions where the levels of airborne dust exceed the capabilities of the above referenced respirators, a supplied-air respirator may be necessary.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### Basic Physical and Chemical Properties

Appearance	Black crystalline.
Odour	Faint
Odour Threshold	Not applicable
pH	Not applicable
Melting Point/Freezing Point	Not applicable (freezing)
Initial Boiling Point/Range	Not applicable
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limit	Not applicable (upper); Not applicable (lower)
Vapour Pressure	Not applicable
Vapour Density (air = 1)	Not applicable

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Relative Density (water = 1) Not available  
 Solubility Not applicable in water  
 Auto-ignition Temperature Not applicable  
 Other Information  
 Physical State Solid

**SECTION 10. STABILITY AND REACTIVITY**

**Reactivity**

Not reactive under normal conditions of use.

**Chemical Stability**

Normally stable.

**Possibility of Hazardous Reactions**

Not applicable.

**Conditions to Avoid**

Generation of dust.

**Incompatible Materials**

Strong acids (e.g. hydrochloric acid).  
 Strong oxidizing agents (e.g. perchloric acid).

**Hazardous Decomposition Products**

Not applicable.

**SECTION 11. TOXICOLOGICAL INFORMATION**

**Likely Routes of Exposure**

Inhalation.

**Acute Toxicity**

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Fused Silica	Not available	Not available	Not available
Aluminum oxide	Not available	> 5,000 mg/kg (rat)	Not available
Iron Oxide	Not available	> 10,000 mg/kg (rat)	Not available
Calcium oxide, reacted	Not available	> 2,000 mg/kg (rat)	Not available
Magnesium oxide	Not available	810 mg/kg (mouse)	Not available
Titanium Dioxide	> 6,820 mg/m3 (rat)	> 25,000 mg/kg (rat)	Not available
Silica, crystalline quartz	Not available	22,500 mg/kg (rat)	Not available
Beryllium	Not available	Not available	Not available
Cadmium	Not available	2,330 mg/kg (rat)	Not available

**Skin Corrosion/Irritation**

May cause irritation.

**Serious Eye Damage/Irritation**

May cause irritation or injury due to mechanical abrasion.

**STOT (Specific Target Organ Toxicity) - Single Exposure**

**Inhalation**

May irritate or cause inflammation or pulmonary fibrosis of the respiratory system.

**Skin Absorption**

May cause irritation.

### **Ingestion**

May cause irritation of the mouth, throat and stomach.  
May lead to absorption of heavy metals into the body.

### **Aspiration Hazard**

May be drawn into the lungs (aspirated) if swallowed or vomited.

### **STOT (Specific Target Organ Toxicity) - Repeated Exposure**

Long term inhalation of dusts can attribute to risk of lung diseases.

### **Respiratory and/or Skin Sensitization**

May cause irritation on prolonged contact.

### **Carcinogenicity**

Crystalline Silica (quartz), Beryllium and Cadmium have been determined as carcinogens.

### **Reproductive Toxicity**

#### **Development of Offspring**

There is no evidence this product contributes Teratogenicity or Embryotoxicity.

#### **Sexual Function and Fertility**

No ingredients in this product are known to contribute to reproductive toxicity.

### **Germ Cell Mutagenicity**

Not known to be a mutagen.

### **Interactive Effects**

None known.

## **SECTION 12. ECOLOGICAL INFORMATION**

Although this product is not classified as an environmentally hazardous material, large or frequent spills may cause potential problems.

## **SECTION 13. DISPOSAL CONSIDERATIONS**

### **Disposal Methods**

Contact local environmental authorities for approved disposal or recycling methods in your jurisdiction. The required hazard evaluation of the waste and compliance with the applicable hazardous waste laws are the responsibility of the user.

## **SECTION 14. TRANSPORT INFORMATION**

Not regulated under Canadian TDG Regulations. Not regulated under US DOT Regulations.

## **SECTION 15. REGULATORY INFORMATION**

### **Safety, Health and Environmental Regulations**

#### **Canada**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by the Controlled Products Regulations.

## **SECTION 16. OTHER INFORMATION**

<b>SDS Prepared By</b>	Mark Bryans
<b>Phone No.</b>	(905) 689-7361, ext 234
<b>Date of Preparation</b>	December 03, 2014
<b>Key to Abbreviations</b>	ACGIH® = American Conference of Governmental Industrial Hygienists OSHA = US Occupational Safety and Health Administration

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Product Identifier:	Blackblast
SDS No.:	0009951
Date of Preparation:	December 03, 2014

**References**

HSDB® = Hazardous Substances Data Bank  
CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).  
Registry of Toxic Effects of Chemical Substances (RTECS®) database. Accelrys, Inc.  
Available from Canadian Centre for Occupational Health and Safety (CCOHS). HSDB®  
database. US National Library of Medicine. Available from Canadian Centre for Occupational  
Health and Safety (CCOHS). NIOSH Pocket Guide database. National Institute for  
Occupational Safety and Health. Available from Canadian Centre for Occupational Health and  
Safety (CCOHS).

**Disclaimer**

To the best of our knowledge, the information contained herein is accurate.  
Although certain hazards are described herein, we can not guarantee that these are the only  
hazards that exist.  
Opta Minerals Inc. assumes no liability arising out of the use of this product by others.

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Product Identifier: Blackblast  
SDS No : 0009951  
Date of Preparation: December 03, 2014



Ebony Grit

By

Opta Minerals Inc.

## Ebony Grit

### SECTION 1. IDENTIFICATION

**Product Identifier** Ebony Grit  
**Other Identification** Granulated Copper Slag  
**Product Family** Iron Silicate  
**Recommended Use** Blasting media.  
**Restrictions on Use** Use only as directed.  
**Manufacturer / Supplier** Opta Minerals Inc., 407 Parkside Drive  
 P.O. Box 260, Waterdown, Ontario, Canada, L0R 2H0, (905) 689-7361,  
 www.optaminerals.com  
**Emergency Phone No.** CHEMTREC (Canada & USA), 1-800-424-9300, 24 hours  
 CHEMTREC, (outside North America), 1-703-527-3887, 24 hours  
**SDS No.** 0009903

### SECTION 2. HAZARDS IDENTIFICATION

**GHS Classification**

Carcinogenicity - Category 1A; Specific target organ toxicity (repeated exposure) - Category 1

**GHS Label Elements**



Danger

May cause cancer or damage to respiratory system through prolonged or repeated exposure by inhalation.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	Other Identifiers
Iron Oxide	1309-37-1	53-60	Fe2O3
Fused Silica (Amorphous)	60676-86-0	32-37	SiO2
Aluminum oxide	1344-28-1	3-6	Al2O3
Calcium oxide, reacted	1305-78-8	1-3	CaO
Magnesium oxide	1309-48-4	1-2	MgO
Zinc	1314-13-2	<1.0	Zn
Silica, quartz	14808-60-7	0.3	SiO2
Arsenic	7440-38-2	<0.1	As
Lead	7439-92-1	<0.05	Pb
Beryllium	7440-41-7	<0.001	Be
Cadmium	7440-43-9	<0.001	Cd

Product Identifier: Ebony Grit  
 SDS No.: 0009903  
 Date of Preparation: September 29, 2014

## SECTION 4. FIRST-AID MEASURES

### First-aid Measures

#### Inhalation

Move to fresh air. If experiencing respiratory symptoms (e.g. coughing, shortness of breath, wheezing), call a Poison Centre or doctor.

#### Skin Contact

Wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 5 minutes.

#### Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open.

If eye irritation persists, get medical advice/attention.

#### Ingestion

Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. Call a Poison Centre or doctor if you feel unwell or are concerned.

### Most Important Symptoms and Effects, Acute and Delayed

If in eyes:

May cause moderate to severe irritation.

May irritate or cause inflammation or pulmonary fibrosis of the respiratory system.

### Immediate Medical Attention and Special Treatment

#### Target Organs

Respiratory system.

## SECTION 5. FIRE-FIGHTING MEASURES

### Extinguishing Media

#### Suitable Extinguishing Media

Not combustible. Use extinguishing agent suitable for surrounding fire.

#### Unsuitable Extinguishing Media

Not applicable.

### Specific Hazards Arising from the Chemical

Does not burn.

This product presents no unusual hazards in a fire situation.

Not known to generate any hazardous decomposition products in a fire.

### Special Protective Equipment and Precautions for Fire-fighters

No special precautions are necessary.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment, and Emergency Procedures

Use the personal protective equipment recommended in Section 8 of this safety data sheet. Review Section 7 (Handling) of this safety data sheet before proceeding with clean-up.

### Environmental Precautions

It is good practice to prevent releases into the environment.

Although this product is not classified as an environmentally hazardous material, large or frequent spills may cause potential problems.

### Methods and Materials for Containment and Cleaning Up

Avoid generating dust. Collect using shovel/scoop or approved HEPA vacuum and place in a suitable container for disposal.

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Product Identifier: Ebony Grit  
SDS No.: 0009903  
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## SECTION 7. HANDLING AND STORAGE

### Precautions for Safe Handling

Avoid generating dusts. Wear personal protective equipment to avoid direct contact with this chemical. Avoid repeated or prolonged skin contact with product or with contaminated equipment/surfaces.

It is good practice to: avoid breathing product; avoid skin and eye contact and wash hands after handling. Wash hands thoroughly after handling this product and before eating, using the washroom or leaving work area. Remove contaminated clothing and protective equipment before entering eating areas or leaving work area.

### Conditions for Safe Storage

Store in an area that is: dry.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Iron Oxide	5 mg/m <sup>3</sup> * A4		10 mg/m <sup>3</sup> *			
Aluminum oxide	1 mg/m <sup>3</sup> * A4		5 mg/m <sup>3</sup> *			
Calcium oxide, reacted	2 mg/m <sup>3</sup>		5 mg/m <sup>3</sup>			
Magnesium oxide	10 mg/m <sup>3</sup> * A4		15 mg/m <sup>3</sup>			
Zinc	2 mg/m <sup>3</sup> *		5 mg/m <sup>3</sup> *			
Silica, quartz	0.025 mg/m <sup>3</sup> * A2					
Arsenic	0.01 mg/m <sup>3</sup> A1		0.01 mg/m <sup>3</sup>			
Beryllium	0.00005 mg/m <sup>3</sup> * A1		0.002 mg/m <sup>3</sup>			
Cadmium	0.002 mg/m <sup>3</sup> * A2		0.005 mg/m <sup>3</sup>			
Lead	0.05 mg/m <sup>3</sup> A3					
Fused Silica (Amorphous)			0.1 mg/m <sup>3</sup> *			

\* respirable total dust, OSHA (PEL)= 15 mg/m<sup>3</sup> crystalline Silica, ACGIH, TWA, 0.10 mg / m<sup>3</sup> (ACGIH), 0.025 mg /m<sup>3</sup>, respirable.

### Appropriate Engineering Controls

Do not allow product to accumulate in the air in work or storage areas, or in confined spaces. Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air.

### Individual Protection Measures

#### Eye/Face Protection

Wear chemical safety goggles and face shield when contact is possible. Do not get in eyes.

#### Skin Protection

Avoid repeated or prolonged skin contact. Always wear insulated protective clothing, if contact is possible.

#### Respiratory Protection

Wear a NIOSH approved air-purifying respirator with N95 or higher rating filter(s).

In conditions where the levels of airborne dust exceed the capabilities of the above referenced respirators, a supplied-air respirator may be necessary.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Product Identifier: Ebony Grit  
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## Basic Physical and Chemical Properties

Appearance	Black shiny crystals.
Odour	Faint
Odour Threshold	Not applicable
pH	Not applicable
Melting Point/Freezing Point	Not applicable (freezing)
Initial Boiling Point/Range	Not applicable
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limit	Not applicable (upper); Not applicable (lower)
Vapour Pressure	Not applicable
Vapour Density (air = 1)	Not applicable
Relative Density (water = 1)	Not available
Solubility	Not applicable in water
Auto-ignition Temperature	Not applicable
<b>Other Information</b>	
Physical State	Solid

## SECTION 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions of use.

### Chemical Stability

Normally stable.

### Possibility of Hazardous Reactions

Not applicable.

### Conditions to Avoid

Generation of dust.

### Incompatible Materials

Strong acids (e.g. hydrochloric acid).  
Strong oxidizing agents (e.g. perchloric acid).

### Hazardous Decomposition Products

Not applicable.

## SECTION 11. TOXICOLOGICAL INFORMATION

High concentrations of lead have been known to cause harmful effects to the central nervous system. Concentrations of Crystalline Silica (quartz), Arsenic, Lead, Beryllium and Cadmium are very low in this product.

### Likely Routes of Exposure

Inhalation. Skin contact. Eye contact. Ingestion.

### Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Iron Oxide	Not available	> 10,000 mg/kg (rat)	Not available
Aluminum oxide	Not available	> 5,000 mg/kg (rat)	Not available
Calcium oxide, reacted	Not available	> 2,000 mg/kg (rat)	Not available

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Magnesium oxide	Not available	810 mg/kg (mouse)	Not available
Zinc	> 5.7 mg/m3 (mouse)	5,000 mg/kg (rat)	Not available
Silica, quartz	Not available	22,500 mg/kg (rat)	Not available
Arsenic	Not available	763 mg/kg (rat)	Not available
Beryllium	Not available	Not available	Not available
Cadmium	Not available	2,330 mg/kg (rat)	Not available
Lead	Not available	5 mg/kg (rat)	Not available
Fused Silica (Amorphous)	Not available	Not available	Not available

**Skin Corrosion/Irritation**

May cause irritation.

**Serious Eye Damage/Irritation**

May cause irritation or injury due to mechanical abrasion.

**STOT (Specific Target Organ Toxicity) - Single Exposure**

**Inhalation**

May irritate or cause inflammation or pulmonary fibrosis of the respiratory system.

**Skin Absorption**

May cause irritation.

**Ingestion**

May cause irritation.

May lead to absorption of heavy metals into the body.

**Aspiration Hazard**

May be drawn into the lungs (aspirated) if swallowed or vomited.

**STOT (Specific Target Organ Toxicity) - Repeated Exposure**

Long term inhalation of dusts can attribute to risk of lung diseases. Inhalation of respirable silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of silica dust may cause serious health effects which can include the following; Silicosis, Accelerated Silicosis, Acute Silicosis, Cancer, Autoimmune Disease, Tuberculosis and Kidney Disease.

**Respiratory and/or Skin Sensitization**

May cause irritation on prolonged contact.

**Carcinogenicity**

Crystalline Silica (quartz), Arsenic, Beryllium, Cadmium and Lead have been determined as carcinogens.

**Reproductive Toxicity**

**Development of Offspring**

Inorganic lead compounds are considered to cause developmental toxicity.

**Sexual Function and Fertility**

Inorganic lead compounds are considered to cause reproductive toxicity.

**Germ Cell Mutagenicity**

Inorganic lead compounds are considered to have an affect on mutagenicity.

**Interactive Effects**

None known.

**SECTION 12. ECOLOGICAL INFORMATION**

Although this product is not classified as an environmentally hazardous material, large or frequent spills may cause potential problems.

**Persistence and Degradability**

This product is not biodegradable.

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal Methods

Contact local environmental authorities for approved disposal or recycling methods in your jurisdiction. The required hazard evaluation of the waste and compliance with the applicable hazardous waste laws are the responsibility of the user.

## SECTION 14. TRANSPORT INFORMATION

Not regulated under Canadian TDG Regulations. Not regulated under US DOT Regulations.

## SECTION 15. REGULATORY INFORMATION

### Safety, Health and Environmental Regulations

#### Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by the Controlled Products Regulations.

## SECTION 16. OTHER INFORMATION

<b>SDS Prepared By</b>	Mark Bryans
<b>Phone No.</b>	(905) 689-7361, ext 234
<b>Date of Preparation</b>	September 29, 2014
<b>Key to Abbreviations</b>	ACGIH® = American Conference of Governmental Industrial Hygienists OSHA = US Occupational Safety and Health Administration HSDB® = Hazardous Substances Data Bank
<b>References</b>	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Accelrys, Inc. Available from Canadian Centre for Occupational Health and Safety (CCOHS). HSDB® database. US National Library of Medicine. Available from Canadian Centre for Occupational Health and Safety (CCOHS). NIOSH Pocket Guide database. National Institute for Occupational Safety and Health. Available from Canadian Centre for Occupational Health and Safety (CCOHS).
<b>Disclaimer</b>	To the best of our knowledge, the information contained herein is accurate. Although certain hazards are described herein, we can not guarantee that these are the only hazards that exist. Opta Minerals Inc. assumes no liability arising out of the use of this product by others.

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WD-40

By

WD-40 Company

WD-40




# Safety Data Sheet

## 1 - Identification

<b>Product Name:</b> WD-40 Multi-Use Product Aerosol <i>NOT FOR SALE IN CALIFORNIA</i>  <b>Product Use:</b> Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion  <b>Restrictions on Use:</b> None identified  <b>SDS Date Of Preparation:</b> 07/20/2014	<b>Manufacturer:</b> WD-40 Company <b>Address:</b> 1061 Cudahy Place (92110) P.O. Box 80607 San Diego, California, USA 92138 -0607  <b>Telephone:</b> <b>Emergency only:</b> 1-888-324-7596 (PROSAR) <b>Information:</b> 1-888-324-7596 <b>Chemical Spills:</b> 1-800-424-9300 (Chemtrec) 1-703-527-3887 (International Calls)
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## 2 – Hazards Identification

<b>Hazcom 2012/GHS Classification:</b> Flammable Aerosol Category 1 Gas Under Pressure: Compressed Gas Aspiration Toxicity Category 1  <p>Note: This product is a consumer product and is labeled in accordance with the US Consumer Product Safety Commission regulations which take precedence over OSHA Hazard Communication labeling. The actual container label will not include the label elements below. The labeling below applies to industrial/professional products.</p> <p><b>Label Elements:</b></p>  <p><b>DANGER!</b>          Extremely Flammable Aerosol.          Contains gas under pressure; may explode if heated.          May be fatal if swallowed and enters airways.</p> <p><b>Prevention</b>          Keep away from heat, sparks, open flames, hot surfaces – No smoking.          Do not spray on an open flame or other ignition source.          Pressurized container: Do not pierce or burn, even after use.</p> <p><b>Response</b>          IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.</p> <p><b>Storage</b>          Store locked up.          Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store in a well-ventilated place.</p> <p><b>Disposal</b>          Dispose of contents and container in accordance with local and national regulations.</p>
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## 3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent	US Hazcom 2012/ GHS Classification
Aliphatic Hydrocarbon	64742-47-8	45-50	Flammable Liquid Category 3

Petroleum Base Oil	64742-56-9 64742-65-0 64742-53-6 64742-54-7 64742-71-8	<25	Aspiration Toxicity Category 1 Not Hazardous
LVP Aliphatic Hydrocarbon	64742-47-8	12-18	Aspiration Toxicity Category 1
Carbon Dioxide	124-38-9	2-3	Simple Asphyxiant Gas Under Pressure, Compressed Gas
Non-Hazardous Ingredients	Mixture	<10	Not Hazardous

Note: The exact percentages are a trade secret.

#### 4 – First Aid Measures

**Ingestion (Swallowed):** Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.

**Eye Contact:** Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.

**Skin Contact:** Wash with soap and water. If irritation develops and persists, get medical attention.

**Inhalation (Breathing):** If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.

**Signs and Symptoms of Exposure:** May cause eye and respiratory irritation. Inhalation may cause coughing, headache and dizziness. Skin contact may cause drying of the skin.

**Indication of Immediate Medical Attention/Special Treatment Needed:** Immediate medical attention is needed for ingestion.

#### 5 – Fire Fighting Measures

**Suitable (and unsuitable) Extinguishing Media:** Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.

**Specific Hazards Arising from the Chemical:** Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. Combustion will produce oxides of carbon and hydrocarbons.

**Special Protective Equipment and Precautions for Fire-Fighters:** Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.

#### 6 – Accidental Release Measures

**Personal Precautions, Protective Equipment and Emergency Procedures:** Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area.

**Methods and Materials for Containment/Cleanup:** Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

#### 7 – Handling and Storage

**Precautions for Safe Handling:** Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.

**Conditions for Safe Storage:** Store in a cool, well-ventilated area, away from incompatible materials Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol. Store away from oxidizers.

### 8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Petroleum Base Oil	5 mg/m3 TWA, 10 mg/m3 STEL ACGIH TLV 5 mg/m3 TWA OSHA PEL
LVP Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Carbon Dioxide	5000 ppm TWA (OSHA/ACGIH), 30,000 ppm STEL (ACGIH)
Non-Hazardous Ingredients	None Established

#### The Following Controls are Recommended for Normal Consumer Use of this Product

**Appropriate Engineering Controls:** Use in a well-ventilated area.

**Personal Protection:**

**Eye Protection:** Avoid eye contact. Always spray away from your face.

**Skin Protection:** Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.

**Respiratory Protection:** None needed for normal use with adequate ventilation.

#### For Bulk Processing or Workplace Use the Following Controls are Recommended

**Appropriate Engineering Controls:** Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.

**Personal Protection:**

**Eye Protection:** Safety goggles recommended where eye contact is possible.

**Skin Protection:** Wear chemical resistant gloves.

**Respiratory Protection:** None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.

**Work/Hygiene Practices:** Wash with soap and water after handling.

### 9 – Physical and Chemical Properties

Appearance:	Light amber liquid	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 8%
Odor:	Mild petroleum odor	Vapor Pressure:	95-115 PSI @ 70°F
Odor Threshold:	Not established	Vapor Density:	Greater than 1 (air=1)
pH:	Not Applicable	Relative Density:	0.8 – 0.82 @ 60°F
Melting/Freezing Point	Not established	Solubilities:	Insoluble in water
Boiling Point/Range:	361 - 369°F (183 - 187°C)	Partition Coefficient; n-octanol/water:	Not established
Flash Point:	122°F (49°C) Tag Closed Cup (concentrate)	Autoignition Temperature:	Not established
Evaporation Rate:	Not established	Decomposition Temperature:	Not established
Flammability (solid, gas)	Flammable Aerosol	Viscosity:	2.79-2.96 cSt @ 100°F
VOC:	412 grams/liter (49.5%)	Pour Point:	-63°C (-81.4°F ) ASTM D-97

### 10 – Stability and Reactivity

**Reactivity:** Not reactive under normal conditions

**Chemical Stability:** Stable

**Possibility of Hazardous Reactions:** May react with strong oxidizers generating heat.  
**Conditions to Avoid:** Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.  
**Incompatible Materials:** Strong oxidizing agents.  
**Hazardous Decomposition Products:** Carbon monoxide and carbon dioxide.

### 11 – Toxicological Information

#### **Symptoms of Overexposure:**

**Inhalation:** High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.

**Skin Contact:** Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.

**Eye Contact:** Contact may be irritating to eyes. May cause redness and tearing.

**Ingestion:** This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.

**Chronic Effects:** None expected.

**Carcinogen Status:** None of the components are listed as a carcinogen or suspect carcinogen by IARC, NTP, ACGIH or OSHA.

**Reproductive Toxicity:** None of the components is considered a reproductive hazard.

#### **Numerical Measures of Toxicity:**

The oral toxicity of this product is estimated to be greater than 5,000 mg/kg and the dermal toxicity greater than 2,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

### 12 – Ecological Information

**Ecotoxicity:** No specific aquatic toxicity data is currently available, however components of this product are not expected to be harmful to aquatic organisms

**Persistence and Degradability:** Component are readily biodegradable.

**Bioaccumulative Potential:** Bioaccumulation is not expected based on an assessment of the ingredients.

**Mobility in Soil:** No data available

**Other Adverse Effects:** None known

### 13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Do not puncture or incinerate containers, even empty. Dispose in accordance with federal, state, and local regulations.

### 14 – Transportation Information

DOT Surface Shipping Description:

UN1950, Aerosols, 2.1 Ltd. Qty (Note: Shipping Papers are not required for Limited Quantities unless transported by air or vessel – each package must be marked with the Limited Quantity Mark)

IMDG Shipping Description: Un1950, Aerosols, 2.1, LTD QTY

ICAO Shipping Description: UN1950, Aerosols, flammable, 2.1 NOTE: WD-40 does not test aerosol cans to assure that they meet the pressure and other requirements for transport by air. We do not recommend that our aerosol products be transported by air.

### 15 – Regulatory Information

#### **U.S. Federal Regulations:**

**CERCLA 103 Reportable Quantity:** This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many

states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

**SARA TITLE III:**

**Hazard Category For Section 311/312:** Acute Health, Fire Hazard, Sudden Release of Pressure

**Section 313 Toxic Chemicals:** This product contains the following chemicals subject to SARA Title III

Section 313 Reporting requirements: None

Section 302 Extremely Hazardous Substances (TPQ): None

**EPA Toxic Substances Control Act (TSCA) Status:** All of the components of this product are listed on the TSCA inventory.

**VOC Regulations:** This product complies with the consumer product VOC limits of the US EPA and states adopting the OTC VOC rules but does not comply with CARB.

**California Safe Drinking Water and Toxic Enforcement Act (Proposition 65):** This product does not contain chemicals regulated under California Proposition 65.

**Canadian Environmental Protection Act:** One of the components is listed on the NDSL. All of the other ingredients are listed on the Canadian Domestic Substances List or exempt from notification.

**Canadian WHMIS Classification:** Class A (Compressed gas), Class B-5 (Flammable Aerosol)

This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

**16 – Other Information:**

**HMIS Hazard Rating:**

**Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Reactivity – 0 (minimal hazard)**

Revision Date: July 20, 2014

Supersedes: May 23, 2014

Revision Summary: Convert to Hazcom 2012. Changes in all sections.

Prepared by: Industrial Health & Safety Consultants, Inc. Shelton, CT, USA

APPROVED By: I. Kowalski

Regulatory Affairs Dept.

5049000/No.0015205

Rotella T3 15W40

By

Shell Oil Products

## Material Safety Data Sheet

### 1. MATERIAL AND COMPANY IDENTIFICATION

**Material Name** : Shell Rotella T3 15W-40  
**Product Code** : 001D5433  
**Uses** : Engine oil.

**Manufacturer/Supplier** : Shell Oil Products US  
P.O. Box 4453  
Houston TX 77210-4453  
USA

**SDS Request** : (+1) 877-276-7285

**Emergency Telephone Number**  
**Spill Information** : 877-242-7400  
**Health Information** : 877-504-9351

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Fischer-Tropsch derived base oil, consisting largely of branched, cyclic and linear hydrocarbons having carbon numbers in the range of C18 to C50.  
Highly refined mineral oils and additives.  
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

### 3. HAZARDS IDENTIFICATION

Emergency Overview	
<b>Appearance and Odour</b>	: Amber. Liquid at room temperature. Slight hydrocarbon.
<b>Health Hazards</b>	: Not classified as dangerous for supply or conveyance.
<b>Safety Hazards</b>	: Not classified as flammable but will burn.
<b>Environmental Hazards</b>	: Not classified as dangerous for the environment.

**Health Hazards** : Not expected to be a health hazard when used under normal conditions.

**Health Hazards**  
**Inhalation** : Under normal conditions of use, this is not expected to be a primary route of exposure.  
**Skin Contact** : Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.  
**Eye Contact** : May cause slight irritation to eyes.  
**Ingestion** : Low toxicity if swallowed.  
**Other Information** : Used oil may contain harmful impurities.  
**Signs and Symptoms** : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas.  
Ingestion may result in nausea, vomiting and/or diarrhoea.  
**Aggravated Medical** : Pre-existing medical conditions of the following organ(s) or



## Material Safety Data Sheet

<b>Conditions</b>	organ system(s) may be aggravated by exposure to this material: Skin.
<b>Environmental Hazards</b>	: Not classified as dangerous for the environment.
<b>Additional Information</b>	: Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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### 4. FIRST-AID MEASURES

<b>General Information</b>	: Not expected to be a health hazard when used under normal conditions.
<b>Inhalation</b>	: No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
<b>Skin Contact</b>	: Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.
<b>Eye Contact</b>	: Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
<b>Ingestion</b>	: In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
<b>Advice to Physician</b>	: Treat symptomatically.

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### 5. FIRE-FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

<b>Flash point</b>	: > 230 °C / 446 °F (COC)
<b>Upper / lower Flammability or Explosion limits</b>	: Typical 1 - 10 %(V)
<b>Auto ignition temperature</b>	: > 320 °C / 608 °F
<b>Specific Hazards</b>	: Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.
<b>Suitable Extinguishing Media</b>	: Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
<b>Unsuitable Extinguishing Media</b>	: Do not use water in a jet.
<b>Protective Equipment for Firefighters</b>	: Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

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### 6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

<b>Protective measures</b>	: Avoid contact with skin and eyes. Use appropriate containment
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**Material Safety Data Sheet**

- Clean Up Methods** : to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Additional Advice** : Slippery when spilled. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
- Additional Advice** : Local authorities should be advised if significant spillages cannot be contained.

**7. HANDLING AND STORAGE**

- General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Handling** : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
- Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Store at ambient temperature.
- Product Transfer** : This material has the potential to be a static accumulator. Proper grounding and bonding procedures should be used during all bulk transfer operations.
- Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.
- Unsuitable Materials** : PVC.
- Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Occupational Exposure Limits**

Material	Source	Type	ppm	mg/m3	Notation
Oil mist, mineral	ACGIH	TWA(Inhalable fraction.)		5 mg/m3	
Oil mist, mineral	OSHA Z1	PEL(Mist.)		5 mg/m3	

**Biological Exposure Index (BEI)**  
 No biological limit allocated.

## Material Safety Data Sheet

- Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated. Define procedures for safe handling and maintenance of controls. Educate and train workers in the hazards and control measures relevant to normal activities associated with this product. Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation. Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.
- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65°C(149 °F)].
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference

## Material Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR

- for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognise that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time may be acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.
- Eye Protection** : Wear safety glasses or full face shield if splashes are likely to occur.
- Protective Clothing** : Skin protection not ordinarily required beyond standard issue work clothes.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory. Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

- National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>  
Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>  
Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>  
Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany. <http://www.dguv.de/inhalt/index.jsp>  
L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>
- Environmental Exposure Controls** : Take appropriate measures to fulfil the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water. Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Amber. Liquid at room temperature.  
Odour : Slight hydrocarbon

**Material Safety Data Sheet**

pH	: Not applicable.
Initial Boiling Point and Boiling Range	: > 280 °C / 536 °F estimated value(s)
Pour point	: Typical -20 °C / -4 °F
Flash point	: > 230 °C / 446 °F (COC)
Upper / lower Flammability or Explosion limits	: Typical 1 - 10 %(V)
Auto-ignition temperature	: > 320 °C / 608 °F
Vapour pressure	: < 0.5 Pa at 20 °C / 68 °F (estimated value(s))
Specific gravity	: Typical 0.895 at 15 °C / 59 °F
Density	: Typical 895 kg/m3 at 15 °C / 59 °F
Water solubility	: Negligible.
n-octanol/water partition coefficient (log Pow)	: > 6 (based on information on similar products)
Kinematic viscosity	: > 40 cSt at 40 °C / 104 °F
Vapour density (air=1)	: > 1 (estimated value(s))
Electrical conductivity	: This material is not expected to be a static accumulator.
Evaporation rate (nBuAc=1)	: Data not available

**10. STABILITY AND REACTIVITY**

<b>Stability</b>	: Stable.
<b>Conditions to Avoid</b>	: Extremes of temperature and direct sunlight.
<b>Materials to Avoid</b>	: Strong oxidising agents.
<b>Hazardous Decomposition Products</b>	: Hazardous decomposition products are not expected to form during normal storage.

**11. TOXICOLOGICAL INFORMATION**

<b>Basis for Assessment</b>	: Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
<b>Acute Oral Toxicity</b>	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat
<b>Acute Dermal Toxicity</b>	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit
<b>Acute Inhalation Toxicity</b>	: Not considered to be an inhalation hazard under normal conditions of use.
<b>Skin Irritation</b>	: Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
<b>Eye Irritation</b>	: Expected to be slightly irritating.
<b>Respiratory Irritation</b>	: Inhalation of vapours or mists may cause irritation.
<b>Sensitisation</b>	: Not expected to be a skin sensitiser.
<b>Repeated Dose Toxicity</b>	: Not expected to be a hazard.
<b>Mutagenicity</b>	: Not considered a mutagenic hazard.
<b>Carcinogenicity</b>	: Not expected to be carcinogenic.

<b>Material</b>	: <b>Carcinogenicity Classification</b>
Highly refined mineral oil	: ACGIH Group A4: Not classifiable as a human carcinogen.

**Material Safety Data Sheet**

(IP346 <3%) Highly refined mineral oil	:	IARC 3: Not classifiable as to carcinogenicity to humans.
(IP346 <3%) Highly refined mineral oil	:	GHS / CLP: No carcinogenicity classification

**Reproductive and Developmental Toxicity** : Not expected to be a hazard.

**Additional Information** : Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal. ALL used oil should be handled with caution and skin contact avoided as far as possible. Continuous contact with used engine oils has caused skin cancer in animal tests.

**12. ECOLOGICAL INFORMATION**

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

**Acute Toxicity** : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract.

**Mobility** : Liquid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile. Floats on water.

**Persistence/degradability** : Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.

**Bioaccumulation** : Contains components with the potential to bioaccumulate.

**Other Adverse Effects** : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

**13. DISPOSAL CONSIDERATIONS**

**Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.

## Material Safety Data Sheet

- Container Disposal** : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
- Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

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### 14. TRANSPORT INFORMATION

#### US Department of Transportation Classification (49CFR)

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

#### IMDG

This material is not classified as dangerous under IMDG regulations.

#### IATA (Country variations may apply)

This material is either not classified as dangerous under IATA regulations or needs to follow country specific requirements.

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### 15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

#### Federal Regulatory Status

##### Notification Status

EINECS	All components listed or polymer exempt.
TSCA	All components listed.
DSL	All components listed.

##### Comprehensive Environmental Release, Compensation & Liability Act (CERCLA)

Shell Rotella T3 15W-40 ()	Reportable quantity: 60 lbs
Zinc alkyl dithiophosphate (68649-42-3)	
Ethylene glycol (107-21-1)	Reportable quantity: 5000 lbs
Toluene (108-88-3)	Reportable quantity: 1000 lbs

## Material Safety Data Sheet

Ethylenediamine also known as 1,2-ethanediamine (107-15-3) Reportable quantity: 5000 lbs

Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

The components with RQs are given for information.

### Clean Water Act (CWA) Section 311

Toluene (108-88-3) Reportable quantity: 1000 lbs

Ethylenediamine also known as 1,2-ethanediamine (107-15-3) Reportable quantity: 5000 lbs

Under Section 311 of the Clean Water Act (CWA) this material is considered an oil. As such, spills into surface waters must be reported to the National Response Center at (800) 424-8802.

### SARA Hazard Categories (311/312)

No SARA 311/312 Hazards.

### SARA Toxic Release Inventory (TRI) (313)

Zinc alkyl dithiophosphate (68649-42-3)	1.66%
Diphenylamine (122-39-4)	0.01%
Ethylene glycol (107-21-1)	0.01%
Toluene (108-88-3)	0.01%

### SARA Extremely Hazardous Substances (302/304)

Ethylenediamine also known as 1,2-ethanediamine (107-15-3) Reportable quantity: 5000 lbs

Ethylenediamine also known as 1,2-ethanediamine (107-15-3) Threshold Planning Quantity: 10000 lbs

### State Regulatory Status

#### California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

Known to the State of California to cause birth defects or other reproductive harm.

#### New Jersey Right-To-Know Chemical List

Zinc alkyl dithiophosphate (68649-42-3) 1.6632% Listed.

Diphenylamine (122-39-4) 0.0156%



**Material Safety Data Sheet**

Ethylene glycol (107-21-1) 0.0156% Listed.  
Toluene (108-88-3) 0.0156% Listed.  
Ethylenediamine also known as 1,2-ethanediamine (107-15-3) 0.0156% Listed.  
Ethylenediamine also known as 1,2-ethanediamine (107-15-3) 0.0156% Listed.

**Pennsylvania Right-To-Know Chemical List**

Diphenylamine (122-39-4) 0.0156% Environmental hazard.  
Ethylene glycol (107-21-1) 0.0156% Listed.  
Toluene (108-88-3) 0.0156% Environmental hazard.  
Ethylenediamine also known as 1,2-ethanediamine (107-15-3) 0.0156% Listed.  
Ethylenediamine also known as 1,2-ethanediamine (107-15-3) 0.0156% Environmental hazard.

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**16. OTHER INFORMATION**

**NFPA Rating (Health, Fire, Reactivity)** : 0, 1, 0  
**SDS Version Number** : 1.3  
**SDS Effective Date** : 04/04/2014  
**SDS Revisions** : A vertical bar (|) in the left margin indicates an amendment from the previous version.  
**SDS Regulation** : The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
**SDS Distribution** : The information in this document should be made available to all who may handle the product.  
**Disclaimer** : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.



## Material Safety Data Sheet

### 1. MATERIAL AND COMPANY IDENTIFICATION

**Material Name** : Shell Grease Super Duty 2

**Manufacturer/Supplier** : SOPUS Products  
PO Box 4427  
Houston, TX 77210-4427  
USA

**MSDS Request** : 877-276-7285

**Emergency Telephone Number**  
**Spill Information** : 877-242-7400  
**Health Information** : 877-504-9351

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

A lubricating grease consisting of highly-refined mineral oil and additives.  
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

### 3. HAZARDS IDENTIFICATION

	<b>Emergency Overview</b>
<b>Appearance and Odour</b>	: Slight hydrocarbon.
<b>Health Hazards</b>	: High-pressure injection under the skin may cause serious damage including local necrosis.
<b>Safety Hazards</b>	: Not classified as flammable but will burn.
<b>Environmental Hazards</b>	: Not classified as dangerous for the environment.
<b>Health Hazards</b>	: Not expected to be a health hazard when used under normal conditions.
<b>Health Hazards Inhalation</b>	: Under normal conditions of use, this is not expected to be a primary route of exposure.
<b>Skin Contact</b>	: Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
<b>Eye Contact</b>	: May cause slight irritation to eyes.
<b>Ingestion</b>	: Low toxicity if swallowed.
<b>Other Information</b>	: High-pressure injection under the skin may cause serious damage including local necrosis. Used grease may contain harmful impurities.
<b>Signs and Symptoms</b>	: Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection. Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.
<b>Aggravated Medical</b>	: Pre-existing medical conditions of the following organ(s) or

## Material Safety Data Sheet

<b>Condition</b>	organ system(s) may be aggravated by exposure to this material: Skin.
<b>Environmental Hazards</b>	: Not classified as dangerous for the environment.
<b>Additional Information</b>	: Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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### 4. FIRST AID MEASURES

<b>General Information</b>	: Not expected to be a health hazard when used under normal conditions.
<b>Inhalation</b>	: No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
<b>Skin Contact</b>	: Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention. When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop. Obtain medical attention even in the absence of apparent wounds.
<b>Eye Contact</b>	: Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
<b>Ingestion</b>	: In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
<b>Advice to Physician</b>	: Treat symptomatically. High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

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### 5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

<b>Flash point</b>	: > 140 °C / 284 °F (COC)
<b>Upper / lower Flammability or Explosion limits</b>	: Typical 1 - 10 %(V)(based on mineral oil)
<b>Auto ignition temperature</b>	: > 320 °C / 608 °F
<b>Specific Hazards</b>	: Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.
<b>Suitable Extinguishing</b>	: Foam, water spray or fog. Dry chemical powder, carbon

**Material Safety Data Sheet**

- Media** : dioxide, sand or earth may be used for small fires only.  
**Unsuitable Extinguishing Media** : Do not use water in a jet.  
**Protective Equipment for Firefighters** : Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

**6. ACCIDENTAL RELEASE MEASURES**

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe all relevant local and international regulations.

- Protective measures** : Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.  
**Clean Up Methods** : Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.

**7. HANDLING AND STORAGE**

- General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.  
**Handling** : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.  
**Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F  
**Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.  
**Unsuitable Materials** : PVC.  
**Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Occupational Exposure Limits**

Material	Source	Type	ppm	mg/m3	Notation
Oil mist, mineral	ACGIH	TWA(Mist.)		5 mg/m3	
Oil mist, mineral	ACGIH	STEL(Mist.)		10 mg/m3	

## Material Safety Data Sheet

- Additional Information** : Due to the product's semi-solid consistency, generation of mists and dusts is unlikely to occur.
- Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances.  
Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.
- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65 °C (149 °F)].
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
- Eye Protection** : Wear safety glasses or full face shield if splashes are likely to occur.
- Protective Clothing** : Skin protection not ordinarily required beyond standard issue work clothes.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
- Environmental Exposure Controls** : Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

**Material Safety Data Sheet**

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

Odour	: Slight hydrocarbon
pH	: Not applicable.
Initial Boiling Point and Boiling Range	: Data not available
Flash point	: > 140 °C / 284 °F (COC)
Upper / lower Flammability or Explosion limits	: Typical 1 - 10 %(V) (based on mineral oil)
Auto-ignition temperature	: > 320 °C / 608 °F
Vapour pressure	: < 0.5 Pa at 20 °C / 68 °F (estimated value(s))
Water solubility	: Negligible.
n-octanol/water partition coefficient (log Pow)	: > 6 (based on information on similar products)
Kinematic viscosity	: Data not available
Vapour density (air=1)	: > 1 (estimated value(s))
Evaporation rate (nBuAc=1)	: Data not available

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**10. STABILITY AND REACTIVITY**

Stability	: Stable.
Conditions to Avoid	: Extremes of temperature and direct sunlight.
Materials to Avoid	: Strong oxidising agents.
Hazardous Decomposition Products	: Hazardous decomposition products are not expected to form during normal storage.

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**11. TOXICOLOGICAL INFORMATION**

Basis for Assessment	: Information given is based on data on the components and the toxicology of similar products.
Acute Oral Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat
Acute Dermal Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit
Acute Inhalation Toxicity	: Not considered to be an inhalation hazard under normal conditions of use.
Skin Irritation	: Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
Eye Irritation	: Expected to be slightly irritating.
Respiratory Irritation	: Inhalation of vapours or mists may cause irritation.
Sensitisation	: Not expected to be a skin sensitiser.
Repeated Dose Toxicity	: Not expected to be a hazard.
Mutagenicity	: Not considered a mutagenic hazard.
Carcinogenicity	: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies. Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC). Other components are not known to be associated with carcinogenic effects.
Reproductive and Developmental Toxicity	: Not expected to be a hazard.

**Material Safety Data Sheet**

**Additional Information** : Used grease may contain harmful impurities that have accumulated during use. The concentration of such harmful impurities will depend on use and they may present risks to health and the environment on disposal. ALL used grease should be handled with caution and skin contact avoided as far as possible. High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

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**12. ECOLOGICAL INFORMATION**

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

**Acute Toxicity** : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

**Mobility** : Semi-solid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.

**Persistence/degradability** : Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.

**Bioaccumulation** : Contains components with the potential to bioaccumulate.

**Other Adverse Effects** : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

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**13. DISPOSAL CONSIDERATIONS**

**Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.

**Container Disposal** : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.

**Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

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**14. TRANSPORT INFORMATION**

**US Department of Transportation Classification (49CFR)**



## Material Safety Data Sheet

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

### IMDG

This material is not classified as dangerous under IMDG regulations.

### IATA (Country variations may apply)

This material is not classified as dangerous under IATA regulations.

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## 15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

### Federal Regulatory Status

#### Notification Status

DSL	All components listed.
EINECS	All components listed.
TSCA	All components listed.

#### SARA Hazard Categories (311/312)

No SARA 311/312 Hazards.

### State Regulatory Status

#### California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

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## 16. OTHER INFORMATION

<b>NFPA Rating (Health, Fire, Reactivity)</b>	: 0, 1, 0
<b>MSDS Version Number</b>	: 7.0
<b>MSDS Effective Date</b>	: 07/07/2008
<b>MSDS Revisions</b>	: A vertical bar ( ) in the left margin indicates an amendment from the previous version.
<b>MSDS Regulation</b>	: The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
<b>MSDS Distribution</b>	: The information in this document should be made available to

**Material Safety Data Sheet**

all who may handle the product.

**Disclaimer**

: The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.

Rotella Triple Protection 10W

By

Shell Oil Products

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR  
1910.1200

Version 1.3

Revision Date: 10/06/2015

Print Date: 10/07/2015

## SECTION 1. IDENTIFICATION

Product name : Shell Rotella T Triple Protection 10W-30

Product code : 001D5440

### Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**  
P.O. Box 4427  
Houston TX 77210-4427  
USA

SDS Request : (+1) 877-276-7285  
Customer Service :

### Emergency telephone number

Spill Information : 877-504-9351  
Health Information : 877-242-7400

### Recommended use of the chemical and restrictions on use

Recommended use : Engine oil.

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## SECTION 2. HAZARDS IDENTIFICATION

### GHS Classification

Not a hazardous substance or mixture.

### GHS Label element

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : **PHYSICAL HAZARDS:**  
Not classified as a physical hazard under GHS criteria.  
**HEALTH HAZARDS:**  
Not classified as a health hazard under GHS criteria.  
**ENVIRONMENTAL HAZARDS:**  
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**  
No precautionary phrases.  
**Response:**  
No precautionary phrases.  
**Storage:**  
No precautionary phrases.  
**Disposal:**  
No precautionary phrases.

### Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

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Used oil may contain harmful impurities.  
Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Highly refined mineral oils and additives.  
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

\* contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

### Hazardous components

Chemical Name	Synonyms	CAS-No.	Concentration (%)
Polyolefin amide alkeneamine		Not Assigned	1 - 3
Zinc dialkyl dithiophosphate		84605-29-8	1 - 2.4
Calcium sulphonate		70024-69-0	0.1 - 0.9
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *		Not Assigned	0 - 90

## SECTION 4. FIRST-AID MEASURES

General advice : Not expected to be a health hazard when used under normal conditions.

If inhaled : No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.

In case of eye contact : Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

Most important symptoms and effects, both acute and delayed : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.

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- Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
- Immediate medical attention, special treatment : Treat symptomatically.

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## SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable extinguishing media : Do not use water in a jet.
- Specific hazards during fire-fighting : Hazardous combustion products may include:  
A complex mixture of airborne solid and liquid particulates and gases (smoke).  
Carbon monoxide may be evolved if incomplete combustion occurs.  
Unidentified organic and inorganic compounds.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.
- Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.

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Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.  
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

## SECTION 7. HANDLING AND STORAGE

Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.  
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Precautions for safe handling : Avoid prolonged or repeated contact with skin.  
Avoid inhaling vapour and/or mists.  
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.  
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Avoidance of contact : Strong oxidising agents.

Product Transfer : This material has the potential to be a static accumulator.  
Proper grounding and bonding procedures should be used during all bulk transfer operations.

### Storage

Other data : Keep container tightly closed and in a cool, well-ventilated place.  
Use properly labeled and closable containers.  
  
Store at ambient temperature.

Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.  
Unsuitable material: PVC.

Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

## SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA ((inhalable fraction))	5 mg/m <sup>3</sup>	US. ACGIH Threshold Limit Values

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		(Mist)	5 mg/m3	OSHA_TRANS
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## Biological occupational exposure limits

No biological limit allocated.

## Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods  
<http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods  
<http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances  
<http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany  
<http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

**Engineering measures** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:  
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

## General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product. Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

## Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.



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In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

## Hand protection Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.  
It is good practice to wear chemical resistant gloves.

Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

## Environmental exposure controls

General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.

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Local guidelines on emission limits for volatile substances  
must be observed for the discharge of exhaust air containing  
vapour.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: amber
Odour	: Slight hydrocarbon
Odour Threshold	: Data not available
pH	: Not applicable
pour point	: -30 °C / -22 °F Method: ASTM D97
Initial boiling point and boiling range	: > 280 °C / 536 °F estimated value(s)
Flash point	: 204 °C / 399 °F Method: ASTM D92
Evaporation rate	: Data not available
Flammability (solid, gas)	: Data not available
Upper explosion limit	: Typical 10 %(V)
Lower explosion limit	: Typical 1 %(V)
Vapour pressure	: < 0.5 Pa (20 °C / 68 °F) estimated value(s)
Relative vapour density	: > 1 estimated value(s)
Relative density	: 0.868 (15 °C / 59 °F)
Density	: 868 kg/m <sup>3</sup> (15.0 °C / 59.0 °F) Method: ASTM D4052
Solubility(ies)	
Water solubility	: negligible
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: Pow: > 6 (based on information on similar products)
Auto-ignition temperature	: > 320 °C / 608 °F

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Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	83 mm <sup>2</sup> /s (40.0 °C / 104.0 °F) Method: ASTM D445
		12.1 mm <sup>2</sup> /s (100 °C / 212 °F) Method: ASTM D445
Conductivity	:	This material is not expected to be a static accumulator.
Decomposition temperature	:	Data not available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	:	Stable.
Possibility of hazardous reactions	:	Reacts with strong oxidising agents.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Strong oxidising agents.
Hazardous decomposition products	:	Hazardous decomposition products are not expected to form during normal storage.

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## SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	:	Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
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### Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

### Acute toxicity

#### Product:

Acute oral toxicity	:	LD50 (rat): > 5,000 mg/kg Remarks: Expected to be of low toxicity:
Acute inhalation toxicity	:	Remarks: Not considered to be an inhalation hazard under normal conditions of use.
Acute dermal toxicity	:	LD50 (Rabbit): > 5,000 mg/kg Remarks: Expected to be of low toxicity:

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## Skin corrosion/irritation

### Product:

Remarks: Expected to be slightly irritating., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

## Serious eye damage/eye irritation

### Product:

Remarks: Expected to be slightly irritating.

### Components:

#### **Zinc dialkyl dithiophosphate:**

Remarks: Based on available data, the classification criteria are not met.

## Respiratory or skin sensitisation

### Product:

Remarks: Not expected to be a skin sensitiser.

### Components:

#### **Calcium sulphonate:**

Remarks: May cause an allergic skin reaction in sensitive individuals.

Remarks: Classified Skin Sensitiser Category 1B.

## Germ cell mutagenicity

### Product:

: Remarks: Not considered a mutagenic hazard.

## Carcinogenicity

### Product:

Remarks: Not expected to be carcinogenic.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

#### **IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### **ACGIH**

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

#### **OSHA**

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

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gen by OSHA.

## NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

## Reproductive toxicity

### Product:

Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

## STOT - single exposure

### Product:

Remarks: Not expected to be a hazard.

## STOT - repeated exposure

### Product:

Remarks: Not expected to be a hazard.

## Aspiration toxicity

### Product:

Not considered an aspiration hazard.

## Further Information

### Product:

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: Continuous contact with used engine oils has caused skin cancer in animal tests.

Remarks: Slightly irritating to respiratory system.

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## SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.  
Information given is based on a knowledge of the components and the ecotoxicology of similar products.  
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). (LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

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## Ecotoxicity

### Product:

Toxicity to fish (Acute toxicity) : Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to bacteria (Acute toxicity) : Remarks: Data not available

## Persistence and degradability

### Product:

Biodegradability : Remarks: Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

## Bioaccumulative potential

### Product:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

## Mobility in soil

### Product:

Mobility : Remarks: Liquid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

## Other adverse effects

no data available

### Product:

Additional ecological information : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities.

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Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Poorly soluble mixture.  
May cause physical fouling of aquatic organisms.

Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

---

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues

: Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

Contaminated packaging

: Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

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## SECTION 14. TRANSPORT INFORMATION

### National Regulations

#### US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

### International Regulation

#### IATA-DGR

Not regulated as a dangerous good

#### IMDG-Code

Not regulated as a dangerous good

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Not applicable  
Ship type : Not applicable  
Product name : Not applicable  
Special precautions : Not applicable

### Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or

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needs to comply with in connection with transport.

**Additional Information** : MARPOL Annex 1 rules apply for bulk shipments by sea.

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## SECTION 15. REGULATORY INFORMATION

**OSHA Hazards** : No OSHA Hazards

### EPCRA - Emergency Planning and Community Right-to-Know Act

#### CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : No SARA Hazards

**SARA 302** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

#### Pennsylvania Right To Know

Distillates (petroleum), solvent-dewaxed	64742-65-0
heavy paraffinic	
diphenylamine	122-39-4

**California Prop 65** This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

#### The components of this product are reported in the following inventories:

**EINECS** : All components listed or polymer exempt.

**TSCA** : All components listed.

**DSL** : All components listed.

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## SECTION 16. OTHER INFORMATION

**Further information**



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NFPA Rating (Health, Fire, Reactivity) 0, 1, 0

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists  
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road  
AICS = Australian Inventory of Chemical Substances  
ASTM = American Society for Testing and Materials  
BEL = Biological exposure limits  
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes  
CAS = Chemical Abstracts Service  
CEFIC = European Chemical Industry Council  
CLP = Classification Packaging and Labelling  
COC = Cleveland Open-Cup  
DIN = Deutsches Institut für Normung  
DMEL = Derived Minimal Effect Level  
DNEL = Derived No Effect Level  
DSL = Canada Domestic Substance List  
EC = European Commission  
EC50 = Effective Concentration fifty  
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals  
ECHA = European Chemicals Agency  
EINECS = The European Inventory of Existing Commercial Chemical Substances  
EL50 = Effective Loading fifty  
ENCS = Japanese Existing and New Chemical Substances Inventory  
EWC = European Waste Code  
GHS = Globally Harmonised System of Classification and Labelling of Chemicals  
IARC = International Agency for Research on Cancer  
IATA = International Air Transport Association  
IC50 = Inhibitory Concentration fifty  
IL50 = Inhibitory Level fifty  
IMDG = International Maritime Dangerous Goods  
INV = Chinese Chemicals Inventory  
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables  
KECI = Korea Existing Chemicals Inventory  
LC50 = Lethal Concentration fifty  
LD50 = Lethal Dose fifty per cent.  
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading  
LL50 = Lethal Loading fifty  
MARPOL = International Convention for the Prevention of Pollution From Ships  
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level  
OE\_HPVS = Occupational Exposure - High Production Volume

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PBT = Persistent, Bioaccumulative and Toxic  
PICCS = Philippine Inventory of Chemicals and Chemical  
Substances  
PNEC = Predicted No Effect Concentration  
REACH = Registration Evaluation And Authorisation Of  
Chemicals  
RID = Regulations Relating to International Carriage of Dan-  
gerous Goods by Rail  
SKIN\_DES = Skin Designation  
STEL = Short term exposure limit  
TRA = Targeted Risk Assessment  
TSCA = US Toxic Substances Control Act  
TWA = Time-Weighted Average  
vPvB = very Persistent and very Bioaccumulative

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Rotella T Engine Oil SAE 30

By

Shell Oil Products

**Material Safety Data Sheet**

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

**1. MATERIAL AND COMPANY IDENTIFICATION**

**Material Name** : Rotella T Engine Oil SAE 30

**Manufacturer/Supplier** : SOPUS Products  
 PO Box 4427  
 Houston, TX 77210-4427  
 USA

**MSDS Request** : 877-276-7285

**Emergency Telephone Number**  
**Spill Information** : 877-242-7400  
**Health Information** : 877-504-9351

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.  
 Highly refined mineral oils and additives.

**3. HAZARDS IDENTIFICATION**

<b>Emergency Overview</b>	
<b>Appearance and Odour</b>	: May be dyed. Liquid at room temperature. Slight hydrocarbon
<b>Health Hazards</b>	: Not classified as dangerous for supply or conveyance.
<b>Safety Hazards</b>	: Not classified as flammable but will burn.
<b>Environmental Hazards</b>	: Not classified as dangerous for the environment.

**Health Hazards** : Not expected to be a health hazard when used under normal conditions.

**Health Hazards Inhalation** : Under normal conditions of use, this is not expected to be a primary route of exposure.

**Skin Contact** : Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

**Eye Contact** : May cause slight irritation to eyes.

**Ingestion** : Low toxicity if swallowed.

**Other Information** : Used oil may contain harmful impurities.

**Signs and Symptoms** : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.

**Aggravated Medical Condition** : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin.

**Environmental Hazards** : Not classified as dangerous for the environment.

**Additional Information** : Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous

## Material Safety Data Sheet

chemical when evaluated according to the OSHA Hazard  
Communication Standard, 29 CFR 1910.1200.

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### 4. FIRST AID MEASURES

- General Information** : Not expected to be a health hazard when used under normal conditions.
- Inhalation** : No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
- Skin Contact** : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.
- Eye Contact** : Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
- Ingestion** : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
- Advice to Physician** : Treat symptomatically.

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### 5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

- Flash point** :  $\geq 200$  °C / 392 °F (COC)
- Upper / lower** : Typical 1 - 10 %(V)(based on mineral oil)
- Flammability or  
Explosion limits**
- Auto ignition temperature** :  $> 320$  °C / 608 °F
- Specific Hazards** : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.
- Suitable Extinguishing  
Media** : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable Extinguishing  
Media** : Do not use water in a jet.
- Protective Equipment for  
Firefighters** : Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

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### 6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe all relevant local and international regulations.

- Protective measures** : Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Clean Up Methods** : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay,

**Material Safety Data Sheet**

**Additional Advice** : sand or other suitable material and dispose of properly.  
 : Local authorities should be advised if significant spillages cannot be contained.

**7. HANDLING AND STORAGE**

**General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

**Handling** : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.

**Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F

**Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.

**Unsuitable Materials** : PVC.

**Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Occupational Exposure Limits**

Material	Source	Type	ppm	mg/m3	Notation
Oil mist, mineral	ACGIH	TWA(Mist.)		5 mg/m3	
Oil mist, mineral	ACGIH	STEL(Mist.)		10 mg/m3	

**Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

**Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

**Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker

**Material Safety Data Sheet**

- health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65 °C (149 °F)].
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
- Eye Protection** : Wear safety glasses or full face shield if splashes are likely to occur.
- Protective Clothing** : Skin protection not ordinarily required beyond standard issue work clothes.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
- Environmental Exposure Controls** : Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

- Appearance : May be dyed Liquid at room temperature.  
 Odour : Slight hydrocarbon  
 pH : Data not available  
 Initial Boiling Point and Boiling Range : > 280 °C / 536 °F estimated value(s)  
 Pour point : Typical -12 °C / 10 °F  
 Flash point : >= 200 °C / 392 °F (COC)  
 Upper / lower Flammability or Explosion limits : Typical 1 - 10 %(V) (based on mineral oil)  
 Auto-ignition temperature : > 320 °C / 608 °F  
 Vapour pressure : < 0.5 Pa at 20 °C / 68 °F (estimated value(s))  
 Specific gravity : >= 0.87 at 15 °C / 59 °F
- Density : >= 7.5 g/cm3 at 15 °C / 59 °F  
 Water solubility : Negligible.  
 n-octanol/water partition coefficient (log Pow) : > 6 (based on information on similar products)  
 Kinematic viscosity : Typical 251 mm2/s at 40 °C / 104 °F

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Vapour density (air=1) : > 1 (estimated value(s))  
Evaporation rate (nBuAc=1) : Data not available

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### 10. STABILITY AND REACTIVITY

**Stability** : Stable.  
**Conditions to Avoid** : Extremes of temperature and direct sunlight.  
**Materials to Avoid** : Strong oxidising agents.  
**Hazardous Decomposition Products** : Hazardous decomposition products are not expected to form during normal storage.

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### 11. TOXICOLOGICAL INFORMATION

**Basis for Assessment** : Information given is based on data on the components and the toxicology of similar products.  
**Acute Oral Toxicity** : Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat  
**Acute Dermal Toxicity** : Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit  
**Acute Inhalation Toxicity** : Not considered to be an inhalation hazard under normal conditions of use.  
**Skin Irritation** : Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.  
**Eye Irritation** : Expected to be slightly irritating.  
**Respiratory Irritation** : Inhalation of vapours or mists may cause irritation.  
**Sensitisation** : Not expected to be a skin sensitiser.  
**Repeated Dose Toxicity** : Not expected to be a hazard.  
**Mutagenicity** : Not considered a mutagenic hazard.  
**Carcinogenicity** : Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies. Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC). Other components are not known to be associated with carcinogenic effects.  
**Reproductive and Developmental Toxicity** : Not expected to be a hazard.  
**Additional Information** : Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal. ALL used oil should be handled with caution and skin contact avoided as far as possible. Continuous contact with used engine oils has caused skin cancer in animal tests.

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### 12. ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

**Acute Toxicity** : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the



## Material Safety Data Sheet

nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

- Mobility** : Liquid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.
- Persistence/degradability** : Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.
- Bioaccumulation** : Contains components with the potential to bioaccumulate.
- Other Adverse Effects** : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

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### 13. DISPOSAL CONSIDERATIONS

- Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.
- Container Disposal** : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
- Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

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### 14. TRANSPORT INFORMATION

**US Department of Transportation Classification (49CFR)**

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

**IMDG**

This material is not classified as dangerous under IMDG regulations.

**IATA (Country variations may apply)**

This material is not classified as dangerous under IATA regulations.

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### 15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

#### Federal Regulatory Status

#### Notification Status

## Material Safety Data Sheet

EINECS	All components listed.
TSCA	All components listed.
DSL	All components listed.

**SARA Hazard Categories (311/312)**  
No SARA 311/312 Hazards.

### State Regulatory Status

#### California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

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### 16. OTHER INFORMATION

<b>NFPA Rating (Health, Fire, Reactivity)</b>	: 0, 1, 0
<b>MSDS Version Number</b>	: 16.0
<b>MSDS Effective Date</b>	: 07/07/2008
<b>MSDS Revisions</b>	: A vertical bar ( ) in the left margin indicates an amendment from the previous version.
<b>MSDS Regulation</b>	: The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
<b>MSDS Distribution</b>	: The information in this document should be made available to all who may handle the product.
<b>Disclaimer</b>	: The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.

Rotella T1 50W

By

Shell Oil Products

**Material Safety Data Sheet****1. MATERIAL AND COMPANY IDENTIFICATION**

**Material Name** : Shell Rotella T1 50  
**Product Code** : 001D5430  
**Uses** : Engine oil.

**Manufacturer/Supplier** : Shell Oil Products US  
P.O. Box 4427  
Houston TX 77210-4427  
USA

**SDS Request** : (+1) 877-276-7285

**Emergency Telephone Number**

**Spill Information** : 877-242-7400  
**Health Information** : 877-504-9351

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Identity	CAS No.	Concentration
Highly-refined mineral oils	64742-65-0	60.00 - 100.00 %
Distillates (petroleum), hydrotreated light	64742-47-8	0.10 - 1.00 %

Highly refined mineral oils and additives.

The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

**3. HAZARDS IDENTIFICATION**

Emergency Overview	
<b>Appearance and Odour</b>	: Amber. Liquid at room temperature. Slight hydrocarbon.
<b>Health Hazards</b>	: Not classified as dangerous for supply or conveyance.
<b>Safety Hazards</b>	: Not classified as flammable but will burn.
<b>Environmental Hazards</b>	: Not classified as dangerous for the environment.

**Health Hazards** : Not expected to be a health hazard when used under normal conditions.

**Health Hazards**

**Inhalation** : Under normal conditions of use, this is not expected to be a primary route of exposure.

**Skin Contact** : Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

**Eye Contact** : May cause slight irritation to eyes.

**Ingestion** : Low toxicity if swallowed.

**Other Information** : Used oil may contain harmful impurities.

**Signs and Symptoms** : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas.

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<b>Aggravated Medical Conditions</b>	: Ingestion may result in nausea, vomiting and/or diarrhoea. : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin.
<b>Environmental Hazards</b>	: Not classified as dangerous for the environment.
<b>Additional Information</b>	: Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**4. FIRST-AID MEASURES**

<b>General Information</b>	: Not expected to be a health hazard when used under normal conditions.
<b>Inhalation</b>	: No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
<b>Skin Contact</b>	: Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.
<b>Eye Contact</b>	: Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
<b>Ingestion</b>	: In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
<b>Advice to Physician</b>	: Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

Clear fire area of all non-emergency personnel.

<b>Flash point</b>	: Typical 230 °C / 446 °F (COC)
<b>Upper / lower Flammability or Explosion limits</b>	: Typical 1 - 10 %(V)(based on mineral oil)
<b>Auto ignition temperature</b>	: > 320 °C / 608 °F
<b>Specific Hazards</b>	: Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.
<b>Suitable Extinguishing Media</b>	: Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
<b>Unsuitable Extinguishing Media</b>	: Do not use water in a jet.
<b>Protective Equipment for Firefighters</b>	: Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

**6. ACCIDENTAL RELEASE MEASURES**

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

**Material Safety Data Sheet**

- Protective measures** : Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Clean Up Methods** : Slippery when spilled. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
- Additional Advice** : Local authorities should be advised if significant spillages cannot be contained.

**7. HANDLING AND STORAGE**

- General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Handling** : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
- Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Store at ambient temperature.
- Product Transfer** : This material has the potential to be a static accumulator. Proper grounding and bonding procedures should be used during all bulk transfer operations.
- Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.
- Unsuitable Materials** : PVC.
- Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Occupational Exposure Limits**

Material	Source	Type	ppm	mg/m3	Notation
Oil mist, mineral	ACGIH	TWA(Inhalable fraction.)		5 mg/m3	
Oil mist, mineral	OSHA Z1	PEL(Mist.)		5 mg/m3	

**Material Safety Data Sheet****Biological Exposure Index (BEI)**

No biological limit allocated.

- Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated. Define procedures for safe handling and maintenance of controls. Educate and train workers in the hazards and control measures relevant to normal activities associated with this product. Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation. Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.
- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65°C(149 °F)].
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

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For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognise that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time may be acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

- Eye Protection** : Wear safety glasses or full face shield if splashes are likely to occur.
- Protective Clothing** : Skin protection not ordinarily required beyond standard issue work clothes.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory. Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>  
Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>  
Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>  
Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany. <http://www.dguv.de/inhalt/index.jsp>  
L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

- Environmental Exposure Controls** : Take appropriate measures to fulfil the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water. Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**


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## Material Safety Data Sheet

Appearance	: Amber. Liquid at room temperature.
Odour	: Slight hydrocarbon.
pH	: Not applicable.
Initial Boiling Point and Boiling Range	: > 280 °C / 536 °F estimated value(s)
Pour point	: Typical -15 °C / 5 °F
Flash point	: Typical 230 °C / 446 °F (COC)
Upper / lower Flammability or Explosion limits	: Typical 1 - 10 %(V) (based on mineral oil)
Auto-ignition temperature	: > 320 °C / 608 °F
Vapour pressure	: < 0.5 Pa at 20 °C / 68 °F (estimated value(s))
Specific gravity	: Typical 0.892 at 15 °C / 59 °F
Density	: Typical 892 kg/m3 at 15 °C / 59 °F
Water solubility	: Negligible.
n-octanol/water partition coefficient (log Pow)	: > 6 (based on information on similar products)
Kinematic viscosity	: Typical 175 mm2/s at 40 °C / 104 °F
Vapour density (air=1)	: > 1 (estimated value(s))
Electrical conductivity	: This material is not expected to be a static accumulator.
Evaporation rate (nBuAc=1)	: Data not available

### 10. STABILITY AND REACTIVITY

Stability	: Stable.
Conditions to Avoid	: Extremes of temperature and direct sunlight.
Materials to Avoid	: Strong oxidising agents.
Hazardous Decomposition Products	: Hazardous decomposition products are not expected to form during normal storage.

### 11. TOXICOLOGICAL INFORMATION

Basis for Assessment	: Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
Acute Oral Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat
Acute Dermal Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit
Acute Inhalation Toxicity	: Not considered to be an inhalation hazard under normal conditions of use.
Skin Irritation	: Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
Eye Irritation	: Expected to be slightly irritating.
Respiratory Irritation	: Inhalation of vapours or mists may cause irritation.
Sensitisation	: Not expected to be a skin sensitiser.
Repeated Dose Toxicity	: Not expected to be a hazard.
Mutagenicity	: Not considered a mutagenic hazard.
Carcinogenicity	: Not expected to be carcinogenic. Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting

**Material Safety Data Sheet**

studies. Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

Material	Carcinogenicity Classification
Highly refined mineral oil (IP346 <3%)	ACGIH Group A4: Not classifiable as a human carcinogen.
Highly refined mineral oil (IP346 <3%)	IARC 3: Not classifiable as to carcinogenicity to humans.
Highly refined mineral oil (IP346 <3%)	GHS / CLP: No carcinogenicity classification

**Reproductive and Developmental Toxicity** : Not expected to be a hazard.

**Additional Information** : Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal. ALL used oil should be handled with caution and skin contact avoided as far as possible. Continuous contact with used engine oils has caused skin cancer in animal tests.

**12. ECOLOGICAL INFORMATION**

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

**Acute Toxicity** : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract. Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

**Mobility** : Liquid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile. Floats on water.

**Persistence/degradability** : Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.

**Bioaccumulation** : Contains components with the potential to bioaccumulate.

**Other Adverse Effects** : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

## Material Safety Data Sheet

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### 13. DISPOSAL CONSIDERATIONS

- Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.
- Container Disposal** : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
- Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

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### 14. TRANSPORT INFORMATION

**US Department of Transportation Classification (49CFR)**

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

**IMDG**

This material is not classified as dangerous under IMDG regulations.

**IATA (Country variations may apply)**

This material is either not classified as dangerous under IATA regulations or needs to follow country specific requirements.

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### 15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

#### Federal Regulatory Status

**Notification Status**

EINECS	All components listed or polymer exempt.
TSCA	All components listed.
DSL	All components listed.

**Comprehensive Environmental Release, Compensation & Liability Act (CERCLA)**

**Material Safety Data Sheet**

Shell Rotella T1 50 ()

Reportable quantity: 82 lbs

Zinc alkyl dithiophosphate (68649-42-3)

Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA. The components with RQs are given for information.

Under Section 311 of the Clean Water Act (CWA) this material is considered an oil. As such, spills into surface waters must be reported to the National Response Center at (800) 424-8802.

**SARA Hazard Categories (311/312)**

No SARA 311/312 Hazards.

**SARA Toxic Release Inventory (TRI) (313)**

Zinc alkyl dithiophosphate (68649-42-3)	1.21%
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**State Regulatory Status****California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)**

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

**New Jersey Right-To-Know Chemical List**

Highly-refined mineral oils (64742-65-0)	69.39%	Listed.
Zinc alkyl dithiophosphate (68649-42-3)	1.2139%	Listed.
Distillates (petroleum), hydrotreated light (64742-47-8)	0.61%	Listed.
		Listed.

**Pennsylvania Right-To-Know Chemical List**

Highly-refined mineral oils (64742-65-0)	69.39%	Listed.
Distillates (petroleum), hydrotreated light (64742-47-8)	0.61%	Listed.

**16. OTHER INFORMATION**

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Print Date 07/03/2014

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MSDS\_US

Shell Rotella T1 50

MSDS# 11108DA

Version 1.3

Effective Date 02/05/2014

According to OSHA Hazard Communication Standard, 29 CFR  
1910.1200

## Material Safety Data Sheet

- NFPA Rating (Health, Fire, Reactivity)** : 0, 1, 0  
**SDS Version Number** : 1.3
- SDS Effective Date** : 02/05/2014
- SDS Revisions** : A vertical bar (|) in the left margin indicates an amendment from the previous version.
- SDS Regulation** : The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
- SDS Distribution** : The information in this document should be made available to all who may handle the product.
- Disclaimer** : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.

Spirax HD 85W-140

By

Shell Oil Products

## Material Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR

### 1. MATERIAL AND COMPANY IDENTIFICATION

**Material Name** : Shell Spirax HD 85W-140, Shell Spirax HD 85W-140  
**Product Code** : 001B1879  
**Uses** : Transmission oil.

**Manufacturer/Supplier** : Shell Oil Products US  
P.O. Box 4427  
Houston TX 77210-4427  
USA

**SDS Request** : (+1) 877-276-7285

**Emergency Telephone Number**  
**Spill Information** : 877-242-7400  
**Health Information** : 877-504-9351

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Highly refined mineral oil, severely hydrotreated slack wax, synthetic esters, polyolefins and additives.

The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

### 3. HAZARDS IDENTIFICATION

Emergency Overview	
<b>Appearance and Odour</b>	: Amber. Liquid at room temperature. Slight hydrocarbon.
<b>Health Hazards</b>	: Not classified as dangerous for supply or conveyance.
<b>Safety Hazards</b>	: Not classified as flammable but will burn.
<b>Environmental Hazards</b>	: Not classified as dangerous for the environment.

**Health Hazards** : Not expected to be a health hazard when used under normal conditions.

**Health Hazards Inhalation** : Under normal conditions of use, this is not expected to be a primary route of exposure.

**Skin Contact** : Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

**Eye Contact** : May cause slight irritation to eyes.

**Ingestion** : Low toxicity if swallowed.

**Other Information** : Used oil may contain harmful impurities.

**Signs and Symptoms** : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.

**Aggravated Medical Conditions** : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this

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**Environmental Hazards** : material: Skin.  
**Additional Information** : Not classified as dangerous for the environment.  
: Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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### 4. FIRST-AID MEASURES

**General Information** : Not expected to be a health hazard when used under normal conditions.  
**Inhalation** : No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.  
**Skin Contact** : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.  
**Eye Contact** : Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.  
**Ingestion** : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.  
**Advice to Physician** : Treat symptomatically.

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### 5. FIRE-FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

**Flash point** : Typical 200 °C / 392 °F (COC)  
**Upper / lower Flammability or Explosion limits** : Typical 1 - 10 %(V)(based on mineral oil)  
**Auto ignition temperature** : > 320 °C / 608 °F  
**Specific Hazards** : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.  
**Suitable Extinguishing Media** : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.  
**Unsuitable Extinguishing Media** : Do not use water in a jet.  
**Protective Equipment for Firefighters** : Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

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### 6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

**Protective measures** : Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading



**Material Safety Data Sheet**

- Clean Up Methods** : or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.  
 : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
- Additional Advice** : Local authorities should be advised if significant spillages cannot be contained.

**7. HANDLING AND STORAGE**

- General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Handling** : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
- Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Store at ambient temperature.
- Product Transfer** : This material has the potential to be a static accumulator. Proper grounding and bonding procedures should be used during all bulk transfer operations.
- Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.
- Unsuitable Materials** : PVC.
- Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Occupational Exposure Limits**

Material	Source	Type	ppm	mg/m3	Notation
Oil mist, mineral	ACGIH	TWA(Inhalable fraction.)		5 mg/m3	
Oil mist, mineral	OSHA Z1	PEL(Mist.)		5 mg/m3	

**Biological Exposure Index (BEI)**  
 No biological limit allocated.

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- Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated. Define procedures for safe handling and maintenance of controls. Educate and train workers in the hazards and control measures relevant to normal activities associated with this product. Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation. Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.
- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65°C(149 °F)].
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For

## Material Safety Data Sheet

short-term/splash protection we recommend the same, but recognise that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time may be acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

- Eye Protection** : Wear safety glasses or full face shield if splashes are likely to occur.
- Protective Clothing** : Skin protection not ordinarily required beyond standard issue work clothes.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory. Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>  
Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>  
Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>  
Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany. <http://www.dguv.de/inhalt/index.jsp>  
L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

- Environmental Exposure Controls** : Take appropriate measures to fulfil the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water. Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Amber. Liquid at room temperature.  
Odour : Slight hydrocarbon  
pH : Not applicable.

## Material Safety Data Sheet

Initial Boiling Point and Boiling Range	: > 280 °C / 536 °F estimated value(s)
Pour point	: Typical -12 °C / 10 °F
Flash point	: Typical 200 °C / 392 °F (COC)
Upper / lower Flammability or Explosion limits	: Typical 1 - 10 %(V) (based on mineral oil)
Auto-ignition temperature	: > 320 °C / 608 °F
Vapour pressure	: < 0.5 Pa at 20 °C / 68 °F (estimated value(s))
Specific gravity	: Typical 0.901 at 15 °C / 59 °F
Density	: Typical 901 kg/m <sup>3</sup> at 15 °C / 59 °F
Water solubility	: Negligible.
n-octanol/water partition coefficient (log Pow)	: > 6 (based on information on similar products)
Kinematic viscosity	: Typical 411 mm <sup>2</sup> /s at 40 °C / 104 °F
Vapour density (air=1)	: > 1 (estimated value(s))
Electrical conductivity	: This material is not expected to be a static accumulator.
Evaporation rate (nBuAc=1)	: Data not available

### 10. STABILITY AND REACTIVITY

Stability	: Stable.
Conditions to Avoid	: Extremes of temperature and direct sunlight.
Materials to Avoid	: Strong oxidising agents.
Hazardous Decomposition Products	: Hazardous decomposition products are not expected to form during normal storage.

### 11. TOXICOLOGICAL INFORMATION

Basis for Assessment	: Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
Acute Oral Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat
Acute Dermal Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit
Acute Inhalation Toxicity	: Not considered to be an inhalation hazard under normal conditions of use.
Skin Irritation	: Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
Eye Irritation	: Expected to be slightly irritating.
Respiratory Irritation	: Inhalation of vapours or mists may cause irritation.
Sensitisation	: Not expected to be a skin sensitiser.
Repeated Dose Toxicity	: Not expected to be a hazard.
Mutagenicity	: Not considered a mutagenic hazard.
Carcinogenicity	: Not expected to be carcinogenic. Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies. Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

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Material	Carcinogenicity Classification
Highly refined mineral oil (IP346 <3%)	ACGIH Group A4: Not classifiable as a human carcinogen.
Highly refined mineral oil (IP346 <3%)	IARC 3: Not classifiable as to carcinogenicity to humans.
Highly refined mineral oil (IP346 <3%)	GHS / CLP: No carcinogenicity classification

**Reproductive and Developmental Toxicity Additional Information** : Not expected to be a hazard.  
 : Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal. ALL used oil should be handled with caution and skin contact avoided as far as possible.

**12. ECOLOGICAL INFORMATION**

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

**Acute Toxicity** : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract. Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

**Mobility** : Liquid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile. Floats on water.

**Persistence/degradability** : Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.

**Bioaccumulation Other Adverse Effects** : Contains components with the potential to bioaccumulate.  
 : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

**13. DISPOSAL CONSIDERATIONS**

**Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with

**Material Safety Data Sheet**

- applicable regulations. Do not dispose into the environment, in drains or in water courses.
- Container Disposal** : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
- Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

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**14. TRANSPORT INFORMATION**

**US Department of Transportation Classification (49CFR)**

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

**IMDG**

This material is not classified as dangerous under IMDG regulations.

**IATA (Country variations may apply)**

This material is either not classified as dangerous under IATA regulations or needs to follow country specific requirements.

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**15. REGULATORY INFORMATION**

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

**Federal Regulatory Status**

**Notification Status**

DSL	All components listed.
EINECS	All components listed or polymer exempt.
TSCA	All components listed.

Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

**State Regulatory Status**

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### California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

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#### 16. OTHER INFORMATION

- NFPA Rating (Health, Fire, Reactivity)** : 0, 1, 0  
**SDS Version Number** : 12.2  
**SDS Effective Date** : 02/05/2014  
**SDS Revisions** : A vertical bar (|) in the left margin indicates an amendment from the previous version.  
**SDS Regulation** : The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
**SDS Distribution** : The information in this document should be made available to all who may handle the product.  
**Disclaimer** : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.

Marvel Mystery Oil

By

Marvel Oil Company





MARVEL OIL CO., INC.  
625 WILLOWBROOK CTR PKWY  
WILLOWBROOK, IL 60527

## SAFETY DATA SHEET

### 1. Product and Company Identification

#### 1.1 Product Identifier

Product Name: Marvel Mystery Oil  
Product Code (SKU): MM12R (50094), MM13R (50095), MM13RC (50096)  
MM14R (50097) – See section 15 for discontinued SKU's

#### 1.2 Relevant Identified Uses Of The Substance

Product Use: Engine Oil Additive – Fuel additive (EPA Registered)

#### 1.3 Details of the Supplier of the SDS

Company Name: Marvel Oil Company, Inc.  
Street Address: 625 Willowbrook Centre Parkway  
City, State, Zip Code: Willowbrook, Illinois 60527

#### 1.4 Emergency Telephone Numbers

Phone Number: 1(630)455-3700  
Fax Number: 1(630)455-3868  
Transportation: 1(800)424-9300 (CHEMTREC)  
Medical Assistance: Call your local Poison Control Center

### 2. Hazard Identification:

#### 2.1 Classification of the Substance or Mixture

Hazard Classification: Flammable liquid 3  
Skin irritation 2  
Reproductive Toxicity 2  
Aspiration toxicity 1

#### 2.2 Label Elements



Pictogram:

Signal Word: Danger

Hazard Statement: Flammable liquid and vapor. Causes skin irritation.  
Suspected of damaging fertility of the un-born child. May be fatal if swallowed and enters airways.

Precautionary Statement: Keep away from heat, sparks, open flames or hot surfaces.  
Do not smoke. Keep containers tightly closed. Ground all containers and receiving equipment. Use explosion proof electrical, ventilation, and lighting equipment. Use only non-sparking tools. Take precautionary measures against static

discharge. Wear protective gloves, clothing, eye glasses and face shield. Do not handle until all safety precautions have been read and understood. Wash hands thoroughly after handling. If exposed, get medical attention. If on skin or hair, remove immediately all contaminated clothing and launder before re-use. Wash skin with soap and water. If skin irritation occurs, get medical attention. If swallowed, immediately call a poison control center or doctor. Do NOT induce vomiting. Store in a well ventilated place. Dispose of contents and container in accordance with all local, state, national and international regulations.

### 2.3 Other Hazards

Description of additional HNOC: None

### 3. Information on Ingredients:

3.1 Substance not applicable

#### 3.2 Mixture

<u>Component</u>	<u>CAS Number</u>	<u>Concentration (wt%)</u>
Petroleum Distillates (Hydrotreated Heavy Naphthenic)	64742-52-5	60-100%
Petroleum Distillates (Stoddard Solvent)	8052-41-3	10-30%
Tricresyl Phosphate	1330-78-5	0.1-1.0%
Ortho Dichlorobenzene	95-50-1	0.1-1.0%
Para Dichlorobenzene	106-46-7	<0.1%

### 4. First Aid Measures:

#### 4.1 Description of First Aid Measures

**Inhalation:** Remove to fresh air and promote deep breathing. Get medical attention if effects persist or you feel un-well.

**Skin:** In case of skin contact, wash thoroughly with soap and water. Remove contaminated clothing and footwear. Launder clothing before re-use. Call a physician if irritation develops or persists.

**Eyes:** In case of eye contact, immediately flush eyes with plenty of water. Remove contact lenses if worn. If irritation persists, get medical attention

**Ingestion:** If swallowed, do not induce vomiting. Never give anything by mouth to an unconscious person. Immediately call a poison control center or physician.

#### 4.2 Most important symptoms and effects – acute and chronic

**Inhalation:** May cause respiratory tract irritation. Vapors may cause drowsiness or dizziness.

**Skin:** Cause skin irritation. Symptoms may include redness, edema, drying, defatting, and cracking of skin.

**Eyes:** May cause temporary eye irritation. Symptoms may include discomfort or pain, excess blinking and tearing, with redness and swelling.

**Ingestion:** May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea, and vomiting.

### **4.3 Indication of any immediate medical attention and special treatment**

Symptoms may not appear immediately. Seek medical attention if effects develop or persist and you feel un-well.

## **5. Fire Fighting Measures:**

### **5.1 Extinguishing media**

Carbon dioxide, dry chemical, and alcohol foam

### **5.2 Special hazards arising from the substance or mixture**

CO<sub>2</sub>, CO, and hydrocarbons

### **5.3 Advice for Fire Fighters**

Keep up wind of fire. Wear full firefighting turn out gear (full bunker gear) and respiratory protection (SCBA). Cool closed containers exposed to fire with water. See Section 8 for personal protection.

## **6. Accidental Release Measures:**

### **6.1 Personal precautions, protective equipment, and emergency procedures**

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Eliminate all source of ignition.

### **6.2 Methods and materials for containment and clean up**

**For containment:** Contain and absorb spill with inert material. Place in suitable container for disposal. Do not flush to sewer or allow to enter waterways. See section 8 for PPE.

**For clean up:** Take up material and place in a suitable container. Vapors may be heavier than air and may travel along the ground to a distant source of ignition. Provide adequate ventilation.

## **7. Handling and Storage**

### **7.1 Precautions for safe handling**

Keep away from source of ignition. Do not smoke. Take precaution to eliminate static discharge. Avoid contact with skin and eyes. Avoid breathing vapor or mist. Do not swallow. Do not eat or drink while handling. Wash hands with soap and water after handling. Use only non-sparking tools.

### **7.2 Conditions for safe storage including incompatibilities**

Keep out of reach of children. Store in a well ventilated place. Do not store above 49°C (120°F).

### **7.3 Specific end uses**

**Shelf Life:** Shelf life is considered to be 7 – 10 years when properly stored.

## **8. Exposure Control/Personal Protection:**

### **8.1 Control parameters**

<b>Exposure Limits 8 hr TWA:</b>	<b>(OSHA PEL)</b>	<b>(ACGIH TWA)</b>
Petroleum Distillates (Hydrotreated Heavy Naphthenic)	not applicable	not applicable
Petroleum Distillates (Stoddard Solvent)	500 ppm	100 ppm
Tricresyl Phosphate	not applicable	not applicable
Ortho Dichlorobenzene	50 ppm	25 ppm
Para Dichlorobenzene	75 ppm	10 ppm

## 8.2 Exposure controls

Use adequate ventilation to keep exposure below recommended limits. Ensure that eye wash station and safety shower are close to work station.

**Hand Protection Equipment:** Wear chemical resistant gloves to prevent skin contact.

**Eye Protection Equipment:** Wear safety glasses or splash goggles to prevent eye contact.

**Skin and Body Protection:** Wear suitable protective clothing.

**Respiration/Ventilation Protection Requirements:** Provide good ventilation.

**Ingestion Protection Requirements:** Do not eat, drink or smoke while handling. Wash hands with soap and water after handling. Launder all clothing and foot wear before re-use.

## 9. Physical And Chemical Properties:

### 9.1 Information of basic chemical and physical properties

<b>Physical Form:</b>	thin liquid
<b>Color:</b>	clear red
<b>Odor:</b>	oil of wintergreen - minty
<b>Odor Threshold:</b>	not available
<b>pH:</b>	not applicable – oil based product
<b>Melting Point/Freeze Point:</b>	-51°C (-60°F)
<b>Initial Boiling Point:</b>	not available
<b>Flash Point (Seta Closed Cup):</b>	53°C (128°F)
<b>Flammability Limits:</b>	<b>Explosive Limits:</b> <b>Upper:</b> not available <b>Lower:</b> not available
<b>Evaporation Rate:</b>	not available
<b>Flammability Solid/Gas:</b>	not applicable
<b>Vapor Pressure:</b>	not available
<b>Vapor Density:</b>	not available
<b>Specific Gravity:</b>	0.876
<b>Solubility in Water:</b>	insoluble
<b>Auto Ignition Temperature:</b>	not available
<b>Partition coefficient (n/octanol/water):</b>	not available
<b>Viscosity (Kinimatic @ 100°C):</b>	2.0 – 3.0 cSt

### 9.2 Other information

<b>% NVM by Weight:</b>	75.0%
<b>% VOC Content (California):</b>	24.31%

## 10. Stability and Reactivity:

### 10.1 Reactivity

Does not react under normal conditions

### 10.2 Chemical stability

Stable

### 10.3 Possibility of hazardous reactions

Does not react under normal conditions

### 10.4 Conditions to avoid

Heat and incompatible materials

### 10.5 Incompatible materials

Strong oxidizers such as bleach and peroxides

### 10.6 Hazardous decomposition products

CO<sub>2</sub>, CO and hydrocarbons

## 11. Toxicological Information:

### 11.1 Information on Toxicological effects

#### Marvel Mystery Oil

LD50 – Oral Rat >2000 mg/Kg  
LD50 – Dermal Rabbit >2000 mg/Kg  
LC50 – Inhalation Rat >20 mg/L (4 hr)

#### Petroleum Distillates Hydrotreated Heavy Naphthenic (64742-52-5)

LD50 – Oral Rat >5000 mg/Kg  
LD50 – Dermal Rabbit >5000 mg/Kg  
LC50 – Inhalation Rat >5 mg/L (4 hr)

#### Tricresyl Phosphate (1330-78-5)

LD50 – Oral Rat 3000 mg/Kg

#### o-Dichlorobenzene (95-50-1)

LD50 – Oral Rat 500 mg/Kg  
LD50 – Dermal Rabbit >10000 mg/Kg  
LC50 – Inhalation Rat 8.15 mg/L (4 hr)

#### p-Dichlorobenzene (106-46-7)

LD50 – Oral Rat >2000 mg/Kg  
LD50 – Dermal Rabbit >2000 mg/Kg

Skin corrosion/irritation	Cause skin irritation
Serious eye damage/irritation	Based on available data, classification data are not met
Respiratory or skin sensitization	Based on available data, classification data are not met
Germ cell mutagenicity	Based on available data, classification data are not met
Carcinogenicity	Based on available data, classification data are not met
o-Dichlorobenzene (95-50-1)	IARC Group 3 – Not Classified
p-dichlorobenzene (106-46-7)	IARC Group 2B – Possible carcinogen to humans. NTP 1-Evidence of Carcinogenicity 3, Reasonably anticipated to be a human Carcinogen
Reproductive toxicity	Suspected of damaging fertility of un-born child
Specific target organs – single exposure	Based on available data, classification data are not met
Specific target organs – repeated exposure	Based on available data, classification data are not met
Aspiration hazard	May be fatal if swallowed and enters air ways.

Symptoms/injuries after inhalation	May cause respiratory tract irritation. Vapors may cause drowsiness and dizziness.
Symptoms/injuries after skin contact	Cause skin irritation. Symptoms may include redness, edema, drying, defatting, and cracking of skin.
Symptoms/injuries after eye contact	May cause temporary eye irritation. Symptoms may include discomfort or pain, excess blinking and tearing, with redness and swelling.
Symptoms/injuries after ingestion	May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea, and vomiting.

## 12. Ecological Information:

### 12.1 Toxicity

Not recommended for release into aquatic systems without treatment

### 12.2 Persistence and degradability

Not established

### 12.3 Bioaccumulative potential

Not established

### 12.4 Mobility in soil

Not established

### 12.5 Other adverse effects

None known

## 13. Disposal Considerations:

### 13.1 Waste treatment methods

**RCRA Hazardous Waste:**

Regulated as a hazardous waste (D-001 Ignitable).

**Waste Disposal Method:**

Dispose of in accordance with local, state and federal regulations

**Waste Disposal Vessel:**

Metal drums are recommended.

## 14. Transportation Information:

### 14.1 UN number

1268

### 14.2 UN Proper shipping name

Petroleum Distillate n.o.s.

### 14.3 Transport Hazard class

3

### 14.4 Packaging group

III

### 14.5 Marine Pollutant

No

### 14.6 Transportation in Bulk

Not applicable

#### 14.7 Special precautions

Use limited quantities

### 15. Regulatory Information:

#### 15.1 US Federal Regulations

**TSCA Status:** All ingredients are commercially available and listed by the manufacturer under TSCA.

#### 15.2 Foreign Regulations

**Canadian Status:** All materials contained in this product are listed on the Canadian Domestic Substance List (DSL). Consult Turtle Wax, Inc. regarding status of ingredients.

**European Union:** All materials contained in this product are listed on EINECS.

**AICS:** All materials are registered for AICS (Australia)

#### 15.3 State Regulations

##### State Regulatory Information:

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the SDS may also be applicable for state requirements. For details on your regulatory requirements, contact the appropriate agency in your state.

##### California Prop 65:

<u>CAS Number</u>	<u>Concentration</u>	<u>State Code</u>
p-Dichlorobenzene (106-46-7)	<0.1%	Cancer

#### 15.4 HIMS & NFPA Classifications

HIMS Classification:	Health	2
	Flammability	2
	Reactivity	0
NFPA Classification:	Health	2
	Flammability	2
	Reactivity	0

#### 15.5 Discontinued SKU's

These all utilized to same formula.

MM003, MM007, MM08, MM010, MM011, MM012R, MM013R, MM014R, MM015, MM016, MM017, MM018, MM613, MM005

### 16. Other Information:

<b>Reason For Issue</b>	Conversion to OSHA GHS SDS Format
<b>Prepared By</b>	James Heidel
<b>Preparer's Title</b>	Technical Director, R&D

**SDS Administrator**

Jean Mayszak - Technical Compliance Manager, R&D

**Approval Date**

March 10, 2015

**Supersedes Date**

December 27, 2012

**Revision Number**

#11

This information is, to the best of Turtle Wax, Inc.'s knowledge and belief, accurate and reliable. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy oneself as to the suitability and completeness of such information for their own particular use.



Platinum Bar & Chain Oil

By

Stihl

# STIHL PLATINUM BAR & CHAIN OIL

Packaged for Stihl Incorporated, 536 Viking Drive, Virginia Beach, VA 23452



## Safety Data Sheet

Conforms to HCS 2012 (29 CFR 1910.1200)

### Section 1. Identification

#### Product identifier

**Product Name:** STIHL PLATINUM BAR & CHAIN OIL

**Other names:** F-4

**Part/Product Number(s):** 0781-516-5001, 0781-516-5003, 0781-516-5005, 0781-516-5006, 0781-516-5007, 7010-871-181, 7010-871-0211

**Material Use:** Bar and chain oil, lubricant

**Uses advised against:** Not for internal engine use.

**Manufacturer:** Omni Specialty Packaging, LLC  
10399 Hwy 1 South  
Shreveport, LA 71115  
1-318-524-1100

**Issuing date:** May 8, 2015

**Revision date:** June 2, 2015

**Revision number:** 001

**Company contact:** OMNI EHS Department; E-Mail: [sds@osp.cc](mailto:sds@osp.cc); Contact phone: 318-524-1100 (Monday-Friday, 8:00 AM – 4:00 PM, CST)

**In case of emergency :** CHEMTREC: Within USA and Canada: 1 (800) 524-9300 (24/7)  
CHEMTREC Outside USA and Canada: +1 703-527-3887 (24/7)

### Section 2. Hazards Identification

**OSHA/HCS Status:** This product is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

**GHS Classification of the Substance or Mixture:** Not classified

#### GHS Label Elements

**Hazard pictograms:** None

**Signal word:** None

**Hazard statement:** None

#### Precautionary statements

**General:** Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

**Prevention:** Not applicable

**Response:** Not applicable

**Storage:** Not applicable

**Disposal:** Not applicable

Hazards not otherwise classified (HNOC): Defatting to the skin.

### Section 3. Composition/Information on Ingredients

Petroleum mineral oil lubricant base stock with proprietary performance additives mixture.

Substance/mixture: Mixture

Components Name	CAS number	Weight %*
Lubricant Base Oil (Petroleum) Highly refined mineral oils (C15-C50)	Various	95 – 99
Bar & Chain Oil Additive Mixture	Proprietary	1-5

This product does not contain known hazardous materials at the  $\geq 1\%$  level or known carcinogens at the  $\geq 0.1\%$  level as defined by 29 CFR 1910.1200.

\* The exact percentage of composition has been withheld as a trade secret.

### Section 4. First Aid Measures

#### Description of necessary first aid measures

General Advice:	No specific first aid measures are required. Get medical attention if irritation develops and persists.
Eye contact:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention if irritation develops and persists.
Skin contact:	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation or allergic reaction develops and persists.
Inhalation:	In case of inhalation of decomposition products in a fire, symptoms may be delayed. If inhaled, remove to fresh air. The exposed person may need to be kept under medical surveillance for 48 hours. Get medical attention if symptoms occur.
Ingestion:	Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training. Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8).

#### Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

#### Most Important

**Symptoms and Effects:** Personnel with pre-existing skin disorders should avoid contact with this product. Under normal use conditions, no adverse effects to health are known.

Eye contact:	Not expected to cause prolonged or significant eye irritation.
Skin contact:	Contact with skin is not expected to cause prolonged or significant irritation. Contact with skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.
Inhalation:	Not expected to be harmful if inhaled. Contains petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficult breathing.
Ingestion:	Not expected to be harmful if swallowed.
Note to physician:	Treat symptomatically.

## Section 5. Fire-Fighting Measures

Uniform Fire Code: Class IIIB  
Flash Point: >93.3°C (>200°F)

### Extinguishing Media

**Suitable Media:** In case of fire, use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water fog, alcohol resistant foam, dry chemical, carbon dioxide (CO<sub>2</sub>) extinguisher or spray.

**Unsuitable Media:** CAUTION: Use of water spray when fighting fire may be inefficient.

**Specific Hazards Arising from the Chemical:** Keep product and empty container away from heat and sources of ignition as product will burn. Contact with strong oxidizers may cause fire. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be contained, prevented from being discharged to any waterway, sewer or drain and disposed of in accordance with local regulations.

**Hazardous Combustion Products:** Combustion products may include the following: Carbon dioxide (CO<sub>2</sub>) Carbon monoxide (CO), and Nitrogen oxides.

**Protection of Fire Fighters:** Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## Section 6. Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel:** No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8). Floors may be slippery; use care to avoid falling.

**For emergency responders:** If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. Ensure adequate ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. See also the information in "For non-emergency personnel".

**Environmental precautions:** Avoid dispersal of spilled material onto soil or into waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). See Section 12 for ecological information.

### Methods and materials for containment and cleaning up

**Small Spills:** Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large Spills:** Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material (e.g. sand, earth, vermiculite or diatomaceous earth) and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor.

NOTE: If RQ (Reportable Quantity) is exceeded or if spills enter a body of water, report immediately to the USEPA's National Response Center at (800) 424-8802. Check with your local and state regulators regarding their reporting requirements.

## Section 7. Handling and Storage

### Precautions for safe handling

- Protective measures:** Safety glasses with side shields. Eye protection and face shield should be used if material is used under conditions that increase the chances of splattering. Put on appropriate personal protective equipment (see Section 8). Keep out of reach of children.
- Advice on general occupational hygiene:** Do not get in eyes, on skin or on clothing. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas.  
See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, Including any incompatibilities:** Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials, strong oxidizing agents (see Section 10) and food and drink. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Use appropriate containment to avoid environmental contamination. Avoid contaminating soil or releases into sewage or drainage systems and bodies of water.
- Bulk material handling:** Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient.

## Section 8. Exposure Controls/Personal Protection

### Control parameters

#### Occupational Exposure Limits

Chemical name	ACGIH		OSHA		NIOSH	
	TLV	STEL	PEL	STEL	TWA	Ceiling
Lubricant Base Oil (Petroleum) Highly refined mineral oils (C15-C50)	5 mg/m <sup>3</sup> (mist)	10 mg/m <sup>3</sup> (mist)	5 mg/m <sup>3</sup> (mist)	–	–	–

- Appropriate engineering controls:** Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Emergency shower and eyewash station.
- Environmental exposure controls:** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

- Hygiene measures:** Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.
- Eye/Face Protection:** Wear safety glasses with side shields. A face shield may be necessary under some conditions.
- Skin and Body Protection**
- Hand protection:** Wear protective gloves if prolonged or repeated contact is likely. Wear chemical resistant gloves. Recommended: Nitrile gloves. Consult your supervisor or Standard Operating Procedure (SOP) for special handling instructions.
- Body protection:** No protective equipment is needed under normal use conditions. For non-routine tasks, personal protection equipment for the body should be selected based on the task being performed and the risks involved.
- Other skin protection:** Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved.

**Respiratory protection:** No respiratory protection is normally required. If user operation generates an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from measured concentrations of this material. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

## Section 9. Physical and Chemical Properties

<u>Appearance</u>	<u>(Typical or Target)</u>
Physical State:	Liquid
Color:	Straw colored
Odor:	Petroleum like
Odor threshold:	Not available
pH:	Not applicable
Boiling Point:	Not available
Flash Point (Closed cup):	>93.3°C (>200°F) (Typical or Target)
Evaporation rate (Butyl acetate = 1):	Not available
Flammability (solid, gas)	Not applicable. Based on - Physical state
Flammable) Limit in Air	Not available
Vapor pressure:	Not available
Vapor density (Air = 1):	>1
Relative density:	0.90 - 0.92 g/l at 15°C (Typical or Target)
Solubility:	In soluble in water
Partition coefficient (n-Octanol/water):	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity – Kinematic (cSt (mm <sup>2</sup> /s)@ 40°C):	120 – 173
Viscosity – Kinematic (cSt (mm <sup>2</sup> /s) @ 100°C):	10 – 12.4
VOC %:	0 %

## Section 10. Stability and Reactivity

Reactivity:	Not reactive under normal storage conditions
Chemical stability:	Stable under normal storage conditions
Possibility of hazardous reactions:	None under normal processing.
Hazardous polymerization:	Hazardous polymerization does not occur.
Conditions to avoid:	Heat, flames and sparks.
Incompatible materials:	Oxidizing agents and open flames.
Hazardous decomposition products:	May include: Fumes, Oil vapors, Smoke, Carbon Oxides (including carbon monoxide and carbon dioxide), Aldehydes, Nitrogen oxides, and incomplete combustion products.

## Section 11. Toxicological Information

### Information on toxicological effects

**Basis for Assessment:** Information given is based on product data, a knowledge of the components and the toxicity of similar products.

**Likely Routes of Exposure:** Exposure may occur via skin absorption, skin or eye contact, inhalation, ingestion.

### Substance/Mixture

Acute Toxicity	Oral LD50	Dermal LD50	Inhalation LC50
Lubricant Base Oil (Petroleum) Highly refined mineral oils (C15- C50) Mixture - Typical	>2000 mg/Kg (rat)	>2000 mg/Kg (rabbit)	>2.18 mg/L (rat) 4h (mist)

**Aspiration hazard:** Not expected to be an aspiration hazard.

Skin Corrosion/Irritation:	No known significant effects or critical hazards.
Serious Eye Damage/Irritation:	No known significant effects or critical hazards.
Skin Sensitization:	No known significant effects or critical hazards.
Respiratory Sensitization:	No known significant effects or critical hazards.
Specific Target Organ Toxicity (Single Exposure) - STOT-SE:	No known significant effects or critical hazards.
Specific Target Organ Toxicity (Repeated Exposure) – STOT-RE:	No known significant effects or critical hazards.
Carcinogenicity:	No known significant effects or critical hazards.
Germ Cell Mutagenicity:	No known significant effects or critical hazards.
Reproductive Toxicity	No known significant effects or critical hazards.

#### Information on Toxicity Effects of Compounds

##### Lubricant Base Mineral Oil (Petroleum)

Mineral oils are known to cause cancer because of carcinogenic components (e.g. Benzene). The lubricant base mineral oils in this product have been highly refined by a variety of processes including severe solvent extraction, severe hydro cracking or severe hydro treating to reduce aromatics and improve performance characteristics. The oils in the is product meets the IP-346 criteria of less than 3 percent PHA's and are not considered to be a carcinogen by the International Agency for Research on Cancer.

None of the oils in this product requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IRAC) as: carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

## **Section 12. Ecological Information**

The information is based on data available for the material, the components of the material, and similar materials.

**Ecotoxicity:** No testing has been performed by the manufacturer. Ecotoxicity hazard is based on an evaluation of data for the components or a similar material. Not expected to be harmful to aquatic organisms.

**Mobility:** Base oil component – Low solubility and floats on water and is expected to migrate from water to land. Expected to partition to sediment and wastewater solids.

#### Persistence and degradation

**Biodegradation:** The material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

#### Bioaccumulative potential

**Bioaccumulation:** This product is not expected to bioaccumulate through food chain in the environment.

**Other adverse effects:** No known significant effects or critical hazards.

**Other ecological information:** Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

## **Section 13. Disposal Considerations**

**Disposal recommendations based on material supplied.**

**Waste treatment methods:** This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). Consult the appropriate state, regional, or local regulations for additional requirements. The generation of waste should be avoided or minimized wherever possible.

**Product waste:** Significant quantities of waste product residues should not be disposed of via the sanitary sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-

recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Incineration or landfill should only be considered when recycling is not feasible. Oil collection services are available for used oil recycling.

**Contaminated packaging:** Empty containers or liners may retain some product residues and could pose a potential fire and explosion hazard. Do not cut, puncture, or weld containers.

**Other information:** Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport Information

**General information:** Petroleum Lubricating oil - Not regulated.

	DOT Classification	IMDG	IATA
Bar & Chain Oil	Not Regulated	Not Regulated	Not Regulated

**Special precautions for user:** Transport within user's premises: Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 15. Regulatory Information

### United States Regulations

**United States Inventory (TSCA 8b):** All components are listed or exempted.

**SARA 302/304:** No products were found.

**SARA 311/312:** Immediate (Acute) Health Effects: No  
 Delayed (Chronic) Health Effects: No  
 Fire Hazard: No  
 Sudden Release of Pressure Hazard: No  
 Reactivity Hazard: No

### SARA 313:

The following components of this material are found on the EPCRA 313 list:  
 None

**Supplier notification:** This product does not contain any hazardous ingredients at or above regulated thresholds.

**CWA (Clean Water Act):** This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA:** This material, as supplied, does not contain any substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

### State Regulations

**Massachusetts:** None of the components are at or above regulated thresholds.  
**New Jersey:** None of the components are at or above regulated thresholds.  
**Pennsylvania:** None of the components are at or above regulated thresholds.  
**California Proposition 65:** WARNING: This product contains a chemical known to the State of California to cause cancer.  
 None

### Canada

**WHMIS Hazard Class:** Not classified. This Product Is Not Controlled Under WHMIS (Canada)

### International Chemical Inventories:

All components comply with the following chemical inventory requirements: DSL (Canada)



## Section 16. Other Information

<b>NFPA Rating:</b>	<b>Health Hazard – 1</b>	<b>Flammability – 1</b>	<b>Instability/Reactivity – 0</b>
<b>HMIS Rating:</b>	<b>Health Hazard – 1</b>	<b>Flammability – 1</b>	<b>Physical Hazards – 0</b>

(NFPA & HMIS Hazard Rating Key: 0 - Minimum Hazard; 1 - Slight Hazard; 2 - Moderate Hazard; 3 - High Hazard; 4 - Extreme Hazard; \* - Chronic Hazard Indicator, & PPE - Personal Protective Equipment Index A to L. These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS or Hazardous Material Identification System).

### Key to abbreviations:

OSHA = Occupational Safety and Health Administration

ACGIH= American Conference of Industrial Hygienists

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

CAS = Chemical Abstracts Service Registry Number

cSt = Centistroke (mm<sup>2</sup>/s)

GHS = Global Harmonized System of Classification and Labeling  
Of Chemicals.

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

OEL = Occupational Exposure Limit

SDS = Safety Data Sheet

STEL = Short term exposure Limit

UN = United Nations

UN Number = United Nations Number, a four digit number  
assigned by the United Nations Committee of Experts on  
the Transportation of Dangerous Goods

**Prepared By:** OMNI Specialty Packaging EH&S Department

**Revision Date:** June 2, 2015

**Status:** Final

**Revision Note:** Revision 001 of OSHA GHS SDS format.

### Consumer Product Improvement Act of 2008, General Conformity Certification

For Consumer Product Packages: This product has been evaluated and is certified to be labeled and packaged in compliance with the applicable provisions of the Federal Hazardous Substance Act as stated in 16 CFR 1500 and enforced by the Consumer Product Safety Commission. Where applicable the products that require Child Resistant Closures are packaged in accordance with the Poison Prevention Packaging Act as stated in 16 CFR 1700 and enforced by the Consumer Product Safety Commission. All closures have been tested in accordance with the latest protocols. No testing is required to certify compliance with the provisions. The date of the manufacturing is stamped on the product container.

### Disclaimer

All reasonably practicable steps have been taken to ensure the information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This information is furnished upon condition that the person receiving it shall make their own determination of the suitability of the material for their particular purpose.

End of Safety Data Sheet

HP 2 Cycle Engine Oil

By

Stihl

# STIHL HP (HIGH PERFORMANCE) 2-CYCLE ENGINE OIL

Packaged for Stihl Incorporated, 536 Viking Drive, Virginia Beach, VA 23452



## Safety Data Sheet

Conforms to HCS 2012 (29 CFR 1910.1200)

### Section 1. Identification

#### Product identifier

**Product Name:** STIHL HP (High Performance) 2-Cycle Engine Oil  
**Other names:** F3E  
**Part/Product Number(s):** 0781-319-8008, 0781-319-8009, 0781-319-8010, 0781-319-8014, 0781-319-8015, 0781-319-8016, 0781-319-8044, 0781-319-8045, 0781-319-8049, 0781-319-8051, 7010-871-0208, 7010-871-0177  
**Material Use:** 2-cycle engine fuel additive  
**Uses advised against:** Not for use in non-2-cycle engines  
**Manufacturer:** Omni Specialty Packaging, LLC  
10399 Hwy 1 South  
Shreveport, LA 71115  
1-318-524-1100  
**Issuing date:** May 21, 2015  
**Revision date:** June 2, 2015  
**Revision number:** 001  
**Company contact:** OMNI EHS Department; E-Mail: [sds@osp.cc](mailto:sds@osp.cc); Contact phone: 318-524-1100  
(Monday-Friday, 8:00 AM – 4:00 PM, CST)  
**In case of emergency:** CHEMTREC: Within USA and Canada: 1 (800) 524-9300 (24/7)  
CHEMTREC Outside USA and Canada: +1 703-527-3887 (24/7)

### Section 2. Hazards Identification

**OSHA/HCS Status:** This product is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).  
**Classification of the substance or Mixture:** Not classified

#### GHS Label Elements

**Hazard pictograms:**

**Signal word:** None

**Appearance:** Blue    **Physical State:** Liquid    **Odor:** Petroleum distillates

**Hazard statement:** None

#### Precautionary statements

**General:** Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

**Prevention:** Not applicable

**Response:** Not applicable

**Storage:** Not applicable

**Disposal:** Not applicable

**Hazards not otherwise classified (HNOC):** Defatting to the skin.

**Other information:** Product diluted with gasoline must be handled with the same precautions used for gasoline. Before mixing, the Safety Data Sheet for gasoline should be consulted for any precautionary measures necessary.

### Section 3. Composition/Information on Ingredients

Petroleum mineral oil lubricant base stock with proprietary performance additives mixture.

**Substance/mixture:** Mixture

<u>Components Name</u>	<u>CAS number</u>	<u>Weight %*</u>
Lubricant Base Oil (Petroleum) Highly refined mineral oils (C15-C50)	Various	85 – 95
2-Cycle Engine Oil Additives Mixture	Proprietary	5 – 15

This product does not contain known hazardous materials at the  $\geq 1\%$  level or known carcinogens at the  $\geq 0.1\%$  level as defined by 29 CFR 1910.1200.

\* The exact percentage of composition has been withheld as a trade secret.

### Section 4. First Aid Measures

#### Description of necessary first aid measures

- General Advice:** No specific first aid measures are required. Get medical attention if irritation develops and persists.
- Eye contact:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention if irritation develops and persists.
- Skin contact:** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation or allergic reaction develops and persists.
- Inhalation:** In case of inhalation of decomposition products in a fire, symptoms may be delayed. If inhaled, remove to fresh air. The exposed person may need to be kept under medical surveillance for 48 hours. Get medical attention if symptoms occur.
- Ingestion:** Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.
- Protection of first-aiders:** No action shall be taken involving any personal risk or without suitable training. Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8).

#### Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

#### **Most Important**

**Symptoms and Effects:** Personnel with pre-existing skin disorders should avoid contact with this product. Under normal use conditions, no adverse effects to health are known.

**Eye contact:** Not expected to cause prolonged or significant eye irritation.

**Skin contact:** Contact with skin is not expected to cause prolonged or significant irritation. Contact with skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

**Inhalation:** Not expected to be harmful if inhaled. Contains petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficult breathing.

**Ingestion:** Not expected to be harmful if swallowed.

**Note to physician:** Treat symptomatically.

## Section 5. Fire-Fighting Measures

Uniform Fire Code: Class IIIB  
Flash Point: 222°C (432°F)

### Extinguishing Media

**Suitable Media:** In case of fire, use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water fog, alcohol resistant foam, dry chemical, carbon dioxide (CO<sub>2</sub>) extinguisher or spray.

**Unsuitable Media:** CAUTION: Use of water spray when fighting fire may be inefficient.

**Specific Hazards Arising from the Chemical:** Keep product and empty container away from heat and sources of ignition as product will burn. Contact with strong oxidizers may cause fire. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be contained, prevented from being discharged to any waterway, sewer or drain and disposed of in accordance with local regulations.

**Hazardous Combustion Products:** Combustion products may include the following: Carbon dioxide (CO<sub>2</sub>) Carbon monoxide (CO), and Nitrogen oxides.

**Protection of Fire Fighters:** Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## Section 6. Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel:** No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling.

**For emergency responders:** If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. See also the information in "For non-emergency personnel".

**Environmental precautions:** Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). See Section 12 for ecological information.

### Methods and materials for containment and cleaning up

**Small Spills:** Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large Spills:** Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor.

NOTE: If RQ (Reportable Quantity) is exceeded or if spills enter a body of water, report immediately to the USEPA's National Response Center at (800) 424-8802. Check with your local and state regulators regarding their reporting requirements.

## Section 7. Handling and Storage

### Precautions for safe handling

**Protective measures:** Eye protection and face shield should be used if material is used under conditions that increase the chances of splattering. Put on appropriate personal protective equipment (see Section 8). Keep out of reach of children.

**NOTE:** Product diluted with gasoline must be handled with the same precautions used for gasoline. Before mixing, the Safety Data Sheet for gasoline should be consulted for any precautionary measures necessary.

**Advice on general occupational hygiene:** Do not get in eyes, on skin or on clothing. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas.  
See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities:** Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials, strong oxidizing agents (see Section 10) and food and drink. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Use appropriate containment to avoid environmental contamination. Avoid contaminating soil or releases into sewage or drainage systems and bodies of water.

## Section 8. Exposure Controls/Personal Protection

### Control parameters

#### Occupational Exposure Limits

Chemical name	ACGIH		OSHA		NIOSH	
	TLV	STEL	PEL	STEL	TWA	Ceiling
Lubricant Base Oil (Petroleum) Highly refined mineral oils (C15-C50)	5 mg/m <sup>3</sup> (mist)	10 mg/m <sup>3</sup> (mist)	5 mg/m <sup>3</sup> (mist)	–	–	–

**Appropriate engineering controls:** Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Emergency shower and eyewash station.

**Environmental exposure controls:** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures:** Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/Face Protection:** Wear safety glasses with side shields. A face shield may be necessary under some conditions.

### Skin and Body Protection

**Hand protection:** Wear protective gloves if prolonged or repeated contact is likely. Wear chemical resistant gloves. Recommended: Nitrile gloves. Consult your supervisor or Standard Operating Procedure (SOP) for special handling instructions.

**Body protection:** No protective equipment is needed under normal use conditions. For non-routine tasks, personal protection equipment for the body should be selected based on the

task being performed and the risks involved.

Other skin protection:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved.
Respiratory protection:	No respiratory protection is normally required. If user operation generates an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from measured concentrations of this material. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

## Section 9. Physical and Chemical Properties

Appearance	(Typical or Target)
Physical State:	Liquid
Color:	Blue
Odor:	Petroleum distillates
Odor threshold:	Not available
pH:	Not applicable
Boiling Point:	Not available
Flash Point (Closed cup):	222°C (432°F) (Typical or Target)
Pour Point:	-25°C (-13°F) (Typical or Target)
Evaporation rate (Butyl acetate = 1):	Not available
Flammability (solid, gas):	Not applicable. Based on - Physical state
Flammable) Limit in Air	Not available
Vapor pressure:	Not available
Vapor density (Air = 1):	>1
Relative density:	0.8820 - 0.8990 g/l at 15°C (Typical or Target)
Solubility:	In soluble in water
Partition coefficient (n-Octanol/water):	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity – Kinematic (cSt (mm <sup>2</sup> /s)@ 40°C):	85 to 100
Viscosity – Kinematic (cSt (mm <sup>2</sup> /s) @ 100°C):	10.3 to 12
VOC %:	<0.026%

## Section 10. Stability and Reactivity

Reactivity:	Not reactive under normal storage conditions
Chemical stability:	Stable under normal storage conditions
Possibility of hazardous reactions:	None under normal processing.
Hazardous polymerization:	Hazardous polymerization does not occur.
Conditions to avoid:	Heat, flames and sparks.
Incompatible materials:	Oxidizing agents, Halogens, Halogenated compounds
Hazardous decomposition products:	May include: Fumes, Oil vapors, Smoke, Carbon Oxides (including carbon monoxide and carbon dioxide), Aldehydes, Nitrogen oxides, and incomplete combustion products.

## Section 11. Toxicological Information

### Information on toxicological effects

Basis for Assessment:	Information given is based on product data, a knowledge of the components and the toxicity of similar products.
Likely Routes of Exposure:	Exposure may occur via skin absorption, skin or eye contact, inhalation, ingestion.

Substance/Mixture

Acute Toxicity	Oral LD50	Dermal LD50	Inhalation LC50
Lubricant Base Oil (Petroleum) Highly refined mineral oils (C15- C50) Mixture - Typical	>2000 mg/Kg (rat)	>2000 mg/Kg (rabbit)	>2.18 mg/L (rat) 4h (mist)

Aspiration hazard:	Not expected to be an aspiration hazard.
Skin Corrosion/Irritation:	No known significant effects or critical hazards.
Serious Eye Damage/Irritation:	No known significant effects or critical hazards.
Skin Sensitization:	No known significant effects or critical hazards.
Respiratory Sensitization:	No known significant effects or critical hazards.
Specific Target Organ Toxicity (Single Exposure) - STOT-SE:	No known significant effects or critical hazards.
Specific Target Organ Toxicity (Repeated Exposure) – STOT-RE:	No known significant effects or critical hazards.
Carcinogenicity:	No known significant effects or critical hazards.
Germ Cell Mutagenicity:	No known significant effects or critical hazards.
Reproductive Toxicity	No known significant effects or critical hazards.

#### Information on Toxicity Effects of Compounds

##### Lubricant Base Mineral Oil (Petroleum)

Mineral oils are known to cause cancer because of carcinogenic components (e.g. Benzene). The lubricant base mineral oils in this product have been highly refined by a variety of processes including severe solvent extraction, severe hydro cracking or severe hydro treating to reduce aromatics and improve performance characteristics. The oils in the is product meets the IP-346 criteria of less than 3 percent PHA's and are not considered to be a carcinogen by the International Agency for Research on Cancer.

None of the oils in this product requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IRAC) as: carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

##### 2-Cycle engine oils mix with gasoline:

2-cycle engine oils diluted with gasoline must be handled with the same precautions used for gasoline. Before mixing, the Safety Data Sheet for gasoline should be consulted for any precautionary measures necessary.

## Section 12. Ecological Information

The information is based on data available for the material, the components of the material, and similar materials.

**Ecotoxicity:** No testing has been performed by the manufacturer. Ecotoxicity hazard is based on an evaluation of data for the components or a similar material. Not expected to be harmful to aquatic organisms.

**Mobility:** Base oil component – Low solubility and floats and is expected to migrate from water to land. Expected to partition to sediment and wastewater solids.

**Soil/water partition coefficient (K<sub>oc</sub>):** Not available.

#### Persistence and degradation

**Biodegradation:** The material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

#### Bioaccumulative potential

**Bioaccumulation:** This product is not expected to bioaccumulate through food chain in the environment.

**Other adverse effects:** No known significant effects or critical hazards.



Other ecological information: Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

**Section 13. Disposal Considerations**

Disposal recommendations based on material supplied.

**Waste treatment methods:** This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). Consult the appropriate state, regional, or local regulations for additional requirements. The generation of waste should be avoided or minimized wherever possible.

**Product waste:** Significant quantities of waste product residues should not be disposed of via the sanitary sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Incineration or landfill should only be considered when recycling is not feasible. Oil collection services are available for used oil recycling.

**Contaminated packaging:** Empty containers or liners may retain some product residues and could pose a potential fire and explosion hazard. Do not cut, puncture, or weld containers.

**Other information:** Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Section 14. Transport Information**

General information: Petroleum Lubricating oil - Not regulated.

	DOT Classification	IMDG	IATA
Stihl HP 2-Cycle	Not Regulated	Not Regulated	Not Regulated

**Special precautions for user:** Transport within user's premises: Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Section 15. Regulatory Information**

United States Regulations

**United States Inventory (TSCA 8b):** All components are listed or exempted.  
**SARA 302/304:** No products were found.

**SARA 311/312:**

Immediate (Acute) Health Effects:	No
Delayed (Chronic) Health Effects:	No
Fire Hazard:	No
Sudden Release of Pressure Hazard:	No
Reactivity Hazard:	No

**SARA 313:**  
 The following components of this material are found on the EPCRA 313 list:  
 None

**Supplier notification:** This product does not contain any hazardous ingredients at or above regulated thresholds.

**CWA (Clean Water Act):** This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA:** This material, as supplied, does not contain any substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

**State Regulations**

Massachusetts:	None of the components are at or above regulated thresholds.
New Jersey:	None of the components are at or above regulated thresholds.
Pennsylvania:	None of the components are at or above regulated thresholds.
California Proposition 65:	WARNING: This product contains a chemical known to the State of California to cause cancer. Ethylbenzene - <0.1

**Canada**

WHMIS Hazard Class: Not classified.

**International Chemical Inventories:**

All components comply with the following chemical inventory requirements: DSL (Canada)

<b>Section 16. Other Information</b>
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<b>NFPA Rating:</b>	<b>Health Hazard – 1</b>	<b>Flammability – 1</b>	<b>Instability/Reactivity – 0</b>
<b>HMIS Rating:</b>	<b>Health Hazard – 1</b>	<b>Flammability – 1</b>	<b>Physical Hazards – 0</b>

(NFPA & HMIS Hazard Rating Key: 0 - Minimum Hazard; 1 - Slight Hazard; 2 - Moderate Hazard; 3 - High Hazard; 4 - Extreme Hazard; \* - Chronic Hazard Indicator, & PPE - Personal Protective Equipment Index A to L. These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS or Hazardous Material Identification System).

**Key to abbreviations:**

OSHA = Occupational Safety and Health Administration  
 ACGIH= American Conference of Industrial Hygienists  
 ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 CAS = Chemical Abstracts Service Registry Number  
 cSt = Centistroke (mm<sup>2</sup>/s)  
 GHS = Global Harmonized System of Classification and Labeling Of Chemicals.  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient  
 OEL= Occupational Exposure Limit  
 SDS = Safety Data Sheet  
 STEL = Short term exposure Limit  
 UN = United Nations  
 UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transportation of Dangerous Goods

**Prepared By: OMNI Specialty Packaging EH&S Department**

**Revision Date: June 2, 2015**

**Status: Final**

**Revision Note: Revision 001 of OSHA GHS SDS format.**

**Consumer Product Improvement Act of 2008, General Conformity Certification**

For Consumer Product Packages: This product has been evaluated and is certified to be labeled and packaged in compliance with the applicable provisions of the Federal Hazardous Substance Act as stated in 16 CFR 1500 and enforced by the Consumer Product Safety Commission. Where applicable the products that require Child Resistant Closures are packaged in accordance with the Poison Prevention Packaging Act as stated in 16 CFR 1700 and enforced by the Consumer Product Safety Commission. All closures have been tested in accordance with the latest protocols. No testing is required to certify compliance with the provisions. The date of the manufacturing is stamped on the product container.

**Disclaimer**

All reasonably practicable steps have been taken to ensure the information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This information is furnished upon condition that the person receiving it shall make their own determination of the suitability of the material for their particular purpose.

Gases

Propane

By

Worthington Cylinder Corp.

## 1. Identification

**Product identifier** Propane

**Other means of identification**

SDS number WC002

Product code UN1075

**Recommended use** Portable fuel.

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer/Supplier** Worthington Cylinder Corporation  
**Address** 300 E. Breed St., Chilton, WI 5301  
 United States

**Contact person** Ann Stiefvater  
**E-mail address** Ann.Stiefvater@worthingtonindustries.com  
**Telephone number** 1-920-849-1740  
**Emergency telephone number** 1-703-527-3887 International / CHEMTREC 1-800-424-9300 Domestic

## 2. Hazard(s) identification

**Physical hazards** Flammable gases Category 1  
 Gases under pressure Liquefied gas

**Health hazards** Not classified.

**OSHA defined hazards** Not classified.

### Label elements



**Signal word** Danger

**Hazard statement** Extremely flammable gas. Contains gas under pressure; may explode if heated.

**Precautionary statement**

**Prevention** Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

**Response** Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

**Storage** Protect from sunlight. Store in a well-ventilated place.

**Disposal** Dispose of waste and residues in accordance with local authority requirements.

**Hazard(s) not otherwise classified (HNOC)** May displace oxygen and cause rapid suffocation.

## 3. Composition/information on ingredients

### Mixtures

Chemical name	CAS number	%
Propane	74-98-6	87.5-100
Ethane	74-84-0	0-7
Propylene	115-07-1	0-5
Butane	106-97-8	0-2.5

## Additives

Chemical name	CAS number	%
Ethyl Mercaptan	75-08-1	<0.005

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4. First-aid measures

<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician or poison control center immediately.
<b>Skin contact</b>	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation develops and persists. If frostbite occurs, immerse involved area in warm water (between 100 F/38 C and 110 F/43 C, not exceeding 112 F/44 C). Keep immersed for 20 to 40 minutes. Seek medical assistance.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
<b>Ingestion</b>	Ingestion is not a typical route of exposure for gases or liquefied gases.
<b>Most important symptoms/effects, acute and delayed</b>	Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Very high exposure can cause suffocation from lack of oxygen. May cause drowsiness or dizziness.
<b>Indication of immediate medical attention and special treatment needed</b>	Exposure may aggravate pre-existing respiratory disorders. Treat symptomatically.
<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Dry chemical, CO2, water spray, fog, or foam.
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire-fighting equipment/instructions</b>	Move container from fire area if it can be done without risk.  Do not extinguish fires unless gas flow can be stopped safely; explosive re-ignition may occur. Promptly isolate the scene by removing all persons from the vicinity of the incident. No action shall be taken involving any personal risk or without suitable training. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus. Stop flow of material. Use water to keep fire exposed containers cool and to protect personnel effecting shutoff. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop leak. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply.
<b>General fire hazards</b>	Extremely flammable gas.

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Evacuate the area promptly. No action shall be taken involving any personal risk or without suitable training. Keep unnecessary personnel away.  Ensure adequate ventilation. In case of inadequate ventilation, use respiratory protection. Wear appropriate personal protective equipment (See Section 8).
<b>Methods and materials for containment and cleaning up</b>	Ventilate well, stop flow of gas or liquid if possible. Immediately contact emergency personnel.
<b>Environmental precautions</b>	Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent from entering into soil, ditches, sanitary sewers, waterways and/or groundwater.

## 7. Handling and storage

<b>Precautions for safe handling</b>	Eliminate all sources of ignition. Wear appropriate personal protective equipment (See Section 8). Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Do not get in eyes, on skin, on clothing. Use only with adequate ventilation.
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**Conditions for safe storage, including any incompatibilities**

Store in accordance with local, regional, national, and international regulations. Secure cylinders in an upright position at all times, close all valves when not in use. Store in a cool, dry, well-ventilated place. Keep container tightly closed and sealed until ready for use. Protect cylinders from damage.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Propane (CAS 74-98-6)	PEL	1800 mg/m3 1000 ppm
Additives	Type	Value
Ethyl Mercaptan (CAS 75-08-1)	Ceiling	25 mg/m3 10 ppm

#### US. ACGIH Threshold Limit Values

Components	Type	Value
Butane (CAS 106-97-8)	STEL	1000 ppm
Propylene (CAS 115-07-1)	TWA	500 ppm
Additives	Type	Value
Ethyl Mercaptan (CAS 75-08-1)	TWA	0.5 ppm

#### US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1900 mg/m3 800 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3 1000 ppm
Additives	Type	Value
Ethyl Mercaptan (CAS 75-08-1)	Ceiling	1.3 mg/m3 0.5 ppm

### Biological limit values

No biological exposure limits noted for the ingredient(s).

### Appropriate engineering controls

Provide adequate ventilation and minimize the risk of inhalation of gas. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

### Individual protection measures, such as personal protective equipment

#### Eye/face protection

Wear approved safety glasses or goggles.

#### Skin protection

##### Hand protection

Wear appropriate chemical resistant gloves.

##### Other

Wear protective clothing appropriate for the risk of exposure.

#### Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

#### Thermal hazards

Contact with liquefied gas might cause frostbites, in some cases with tissue damage. Wear appropriate thermal protective clothing, when necessary.

### General hygiene considerations

Do not eat, drink or smoke when using the product. Wash thoroughly after handling. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practices.

## 9. Physical and chemical properties

### Appearance

Colorless gas.

### Physical state

Gas.

### Form

Compressed liquefied gas.

### Color

Colorless.

### Odor

Rotten egg.

Odor threshold	Not available.
pH	Not applicable.
Melting point/freezing point	-306.4 °F (-188 °C)
Initial boiling point and boiling range	-43.6 °F (-42 °C) 14.7 psia
Flash point	-155.2 °F (-104.0 °C)
Evaporation rate	Not applicable.
Flammability (solid, gas)	Extremely flammable gas.
<b>Upper/lower flammability or explosive limits</b>	
Explosive limit - lower (%)	2.15 %
Explosive limit - upper (%)	9.6 %
Vapor pressure	127 psig (21°C / 70°F)
Vapor density	Not available.
Relative density	0.504 (liquid) 1.5 (vapor) (air=1) @ 15°C / 60°F
<b>Solubility(ies)</b>	
Solubility (water)	Slightly soluble in water.
Partition coefficient (n-octanol/water)	1.77
Auto-ignition temperature	809.6 °F (432 °C)
Decomposition temperature	Not available.
Viscosity	Not applicable.
<b>Other information</b>	
Molecular weight	45 g/mol
Percent volatile	100 %

## 10. Stability and reactivity

Reactivity	Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Polymerization will not occur.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong oxidizing agents. Strong acids. Halogens.
Hazardous decomposition products	Carbon oxides. Hydrocarbons.

## 11. Toxicological information

### Information on likely routes of exposure

Ingestion	Not likely, due to the form of the product.
Inhalation	High concentrations: Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. Breathing of high concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness.
Skin contact	Contact with liquefied gas may cause frostbite.
Eye contact	Contact with liquefied gas may cause frostbite.
Symptoms related to the physical, chemical and toxicological characteristics	Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Very high exposure can cause suffocation from lack of oxygen. May cause drowsiness or dizziness.

### Information on toxicological effects

Acute toxicity	High concentration: Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels.
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Components	Species	Test Results
Butane (CAS 106-97-8)		
<b>Acute</b>		
<i>Inhalation</i>		
LC50	Mouse	680 mg/l, 2 Hours
	Rat	658 mg/l, 4 Hours
Propane (CAS 74-98-6)		
<b>Acute</b>		
<i>Inhalation</i>		
LC50	Rat	> 1442 mg/l, 15 Minutes
Propylene (CAS 115-07-1)		
<b>Acute</b>		
<i>Inhalation</i>		
LC50	Mouse	680 mg/l, 2 Hours
	Rat	658 mg/l, 4 Hours
<b>Additives</b>	<b>Species</b>	<b>Test Results</b>
Ethyl Mercaptan (CAS 75-08-1)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rat	> 2000 mg/kg
<i>Inhalation</i>		
LC50	Mouse	4420 mg/l, 4 Hours
<i>Oral</i>		
LD50	Rat	682 mg/kg
<b>Skin corrosion/irritation</b>	Contact with liquefied gas might cause frostbites, in some cases with tissue damage.	
<b>Serious eye damage/eye irritation</b>	Direct contact with liquefied gas may cause eye damage from frostbite.	
<b>Respiratory or skin sensitization</b>		
<b>Respiratory sensitization</b>	Not classified.	
<b>Skin sensitization</b>	Not classified.	
<b>Germ cell mutagenicity</b>	Not classified.	
<b>Carcinogenicity</b>	Not classified.	
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>		
Propylene (CAS 115-07-1)	3 Not classifiable as to carcinogenicity to humans.	
<b>Reproductive toxicity</b>	Not classified.	
<b>Specific target organ toxicity - single exposure</b>	Not classified.	
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.	
<b>Aspiration hazard</b>	Not classified.	
<b>12. Ecological information</b>		
<b>Ecotoxicity</b>	Not expected to be harmful to aquatic organisms.	
<b>Persistence and degradability</b>	The product is readily biodegradable.	
<b>Bioaccumulative potential</b>	The product is not expected to bioaccumulate.	
<b>Partition coefficient n-octanol / water (log Kow)</b>		
Propane (CAS Mixture)	1.77	
Butane (CAS 106-97-8)	2.89	
Propane (CAS 74-98-6)	2.36	
Propylene (CAS 115-07-1)	1.77	
<b>Mobility in soil</b>	May evaporate quickly.	
<b>Mobility in general</b>	May evaporate quickly.	

Other adverse effects None known.

### 13. Disposal considerations

**Disposal instructions** Use the container until empty. Do not dispose of any non-empty container. Empty containers have residual vapor that is flammable and explosive. Cylinders should be emptied and returned to a hazardous waste collection point. Do not puncture or incinerate even when empty. Dispose in accordance with all applicable regulations.

**Hazardous waste code** D001: Waste Flammable material with a flash point <140 °F

**Waste from residues / unused products** Dispose in accordance with all applicable regulations.

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied.

### 14. Transport information

#### DOT

**UN number** UN1075  
**UN proper shipping name** Petroleum Gases, liquefied  
**Transport hazard class(es)**  
**Class** 2.1  
**Subsidiary risk** -  
**Packing group** Not applicable.  
**Environmental hazards**  
**Marine pollutant** No  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.  
**Special provisions** 19, T50  
**Packaging exceptions** 306  
**Packaging non bulk** 304  
**Packaging bulk** 314, 315

#### IATA

**UN number** UN1075  
**UN proper shipping name** Petroleum Gases, liquefied  
**Transport hazard class(es)**  
**Class** 2.1  
**Subsidiary risk** -  
**Label(s)** 2.1  
**Packing group** Not applicable.  
**Environmental hazards** No  
**ERG Code** 10L  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

#### IMDG

**UN number** UN1075  
**UN proper shipping name** Petroleum Gases, liquefied  
**Transport hazard class(es)**  
**Class** 2.1  
**Subsidiary risk** -  
**Label(s)** 2.1  
**Packing group** Not applicable.  
**Environmental hazards**  
**Marine pollutant** No  
**EmS** F-D, S-U  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** This product is a compressed or liquefied gas and when transported in bulk is covered under IGC code.

### 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
All components are on the U.S. EPA TSCA Inventory List.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Butane (CAS 106-97-8)	LISTED
Ethyl Mercaptan (CAS 75-08-1)	LISTED
Propane (CAS 74-98-6)	LISTED
Propylene (CAS 115-07-1)	LISTED

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

<b>Hazard categories</b>	Immediate Hazard - No
	Delayed Hazard - No
	Fire Hazard - Yes
	Pressure Hazard - Yes
	Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical**      Yes

**SARA 313 (TRI reporting)**

<b>Chemical name</b>	<b>CAS number</b>	<b>% by wt.</b>
Propylene	115-07-1	0-5

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Butane (CAS 106-97-8)  
Ethyl Mercaptan (CAS 75-08-1)  
Propane (CAS 74-98-6)  
Propylene (CAS 115-07-1)

**Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)**      Hazardous substance

**Safe Drinking Water Act (SDWA)**      Not regulated.

**US state regulations**

**US. Massachusetts RTK - Substance List**

Butane (CAS 106-97-8)  
Ethyl Mercaptan (CAS 75-08-1)  
Propane (CAS 74-98-6)  
Propylene (CAS 115-07-1)

**US. New Jersey Worker and Community Right-to-Know Act**

Butane (CAS 106-97-8)  
Ethyl Mercaptan (CAS 75-08-1)  
Propane (CAS 74-98-6)  
Propylene (CAS 115-07-1)

**US. Pennsylvania Worker and Community Right-to-Know Law**

Butane (CAS 106-97-8)  
Ethyl Mercaptan (CAS 75-08-1)  
Propane (CAS 74-98-6)  
Propylene (CAS 115-07-1)

**US. Rhode Island RTK**

Butane (CAS 106-97-8)  
Ethyl Mercaptan (CAS 75-08-1)  
Propane (CAS 74-98-6)  
Propylene (CAS 115-07-1)

**US. California Proposition 65**

## US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

### International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

### 16. Other information, including date of preparation or last revision

Issue date	05-May-2014
Revision date	25-March-2015
Version #	03
NFPA Ratings	



### Disclaimer

All information in this Material Safety Data Sheet is believed to be accurate and reliable. However, no guarantee or warranty of any kind is made with regard to the accuracy of information or the suitability of the recommendations contained herein. It is the user's responsibility to assess the safety and toxicity of this product under their own conditions of use and to comply with all applicable laws and regulations.

Oxygen

By

Airgas

# SAFETY DATA SHEET

# Airgas

Oxygen

## Section 1. Identification

GHS product identifier	Oxygen
Chemical name	: oxygen
Other means of identification	: Molecular oxygen; Oxygen molecule; Pure oxygen; O <sub>2</sub> ; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)
Product use	: Synthetic/Analytical chemistry.
Synonym	: Molecular oxygen; Oxygen molecule; Pure oxygen; O <sub>2</sub> ; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)
SDS #	: 001043
Supplier's details	: Airgas USA, LLC and its affiliates 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
24-hour telephone	: 1-866-734-3438

## Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: OXIDIZING GASES - Category 1 GASES UNDER PRESSURE - Compressed gas

### GHS label elements

Hazard pictograms



Signal word	: Danger
Hazard statements	: May cause or intensify fire; oxidizer. Contains gas under pressure; may explode if heated.

### Precautionary statements

General	: Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Open valve slowly. Use only with equipment cleaned for Oxygen service.
Prevention	: Keep away from clothing, incompatible materials and combustible materials. Keep reduction valves, valves and fittings free from oil and grease.
Response	: In case of fire: Stop leak if safe to do so.
Storage	: Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.
Disposal	: Not applicable.
Hazards not otherwise classified	: None known.

### Section 3. Composition/information on ingredients

Substance/mixture : Substance  
 Chemical name : oxygen  
 Other means of identification : Molecular oxygen; Oxygen molecule; Pure oxygen; O<sub>2</sub>; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)

#### CAS number/other identifiers

CAS number : 7782-44-7  
 Product code : 001043

Ingredient name	%	CAS number
oxygen	100	7782-44-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

#### Description of necessary first aid measures

**Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

**Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion** : As this product is a gas, refer to the inhalation section.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

**Eye contact** : Contact with rapidly expanding gas may cause burns or frostbite.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : Contact with rapidly expanding gas may cause burns or frostbite.  
**Frostbite** : Try to warm up the frozen tissues and seek medical attention.  
**Ingestion** : As this product is a gas, refer to the inhalation section.

##### Over-exposure signs/symptoms

**Eye contact** : No specific data.  
**Inhalation** : No specific data.  
**Skin contact** : No specific data.  
**Ingestion** : No specific data.

#### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.  
**Specific treatments** : No specific treatment.

## Section 4. First aid measures

- Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

- Unsuitable extinguishing media : None known.

- Specific hazards arising from the chemical : Contains gas under pressure. Oxidizing material. This material increases the risk of fire and may aid combustion. Contact with combustible material may cause fire. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

- Hazardous thermal decomposition products : No specific data.

- Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk.

- Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

- For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

- Large spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling



## Section 7. Handling and storage

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Keep away from clothing, incompatible materials and combustible materials. Keep reduction valves free from grease and oil. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Separate from acids, alkalies, reducing agents and combustibles. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

oxygen

None.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

### Skin protection

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before

## Section 8. Exposure controls/personal protection

- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Gas. [Compressed gas.]
- Color** : Colorless. Blue.
- Molecular weight** : 32 g/mole
- Molecular formula** : O<sub>2</sub>
- Boiling/condensation point** : -183°C (-297.4°F)
- Melting/freezing point** : -218.4°C (-361.1°F)
- Critical temperature** : -118.15°C (-180.7°F)
- Odor** : Odorless.
- Odor threshold** : Not available.
- pH** : Not available.
- Flash point** : [Product does not sustain combustion.]
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Extremely flammable in the presence of the following materials or conditions: reducing materials, combustible materials and organic materials.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : 1.1 (Air = 1)
- Specific Volume (ft<sup>3</sup>/lb)** : 12.0482
- Gas Density (lb/ft<sup>3</sup>)** : 0.083
- Relative density** : Not applicable.
- Solubility** : Not available.
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : 0.65
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- SADT** : Not available.
- Viscosity** : Not applicable.

## Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.

## Section 10. Stability and reactivity

- Possibility of hazardous reactions** : Hazardous reactions or instability may occur under certain conditions of storage or use. Conditions may include the following:  
contact with combustible materials  
Reactions may include the following:  
risk of causing fire
- Conditions to avoid** : No specific data.
- Incompatible materials** : Highly reactive or incompatible with the following materials:  
combustible materials  
reducing materials  
grease  
oil
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Hazardous polymerization** : Under normal conditions of storage and use, hazardous polymerization will not occur.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Not available.

#### Irritation/Corrosion

Not available.

#### Sensitization

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

**Eye contact** : Contact with rapidly expanding gas may cause burns or frostbite.

## Section 11. Toxicological information

- Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.  
 Ingestion : As this product is a gas, refer to the inhalation section.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact : No specific data.  
 Inhalation : No specific data.  
 Skin contact : No specific data.  
 Ingestion : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- Potential immediate effects : Not available.  
 Potential delayed effects : Not available.

#### Long term exposure

- Potential immediate effects : Not available.  
 Potential delayed effects : Not available.

#### Potential chronic health effects

Not available.

- General : No known significant effects or critical hazards.  
 Carcinogenicity : No known significant effects or critical hazards.  
 Mutagenicity : No known significant effects or critical hazards.  
 Teratogenicity : No known significant effects or critical hazards.  
 Developmental effects : No known significant effects or critical hazards.  
 Fertility effects : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

Not available.

### Persistence and degradability

Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
oxygen	0.65	-	low

### Mobility in soil

- Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

## Section 12. Ecological information

Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

## Section 14. Transport information

	DOT	TDG	Mexic	IMDG	IATA
UN number	UN1072	UN1072	UN1072	UN1072	UN1072
UN proper shipping name	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED
Transport hazard class(es)	2.2 (5.1) 	2.2 	2.2 (5.1) 	2.2 (5.1) 	2.2 (5.1) 
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	<p><b>Limited quantity</b> Yes.</p> <p><b>Packaging instruction</b> <b>Passenger aircraft</b> Quantity limitat on: 75 kg</p> <p><b>Cargo aircraft</b> Quantity limitation: 150 kg</p> <p><b>Special provisions</b> A52</p>	<p>Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2), 2.23-2.25 (Class 5).</p> <p><b>Explosive Limit and Limited Quantity Index</b> 0.125</p> <p><b>ERAP Index</b> 3000</p> <p><b>Passenger Carrying Ship Index</b> 50</p> <p><b>Passenger Carrying Road or Rail Index</b> 75</p> <p><b>Special provisions</b> 42</p>	-	-	<p><b>Passenger and Cargo Aircraft</b>Quantity limitation: 75 kg <b>Cargo Aircraft Only</b> Quantity limitation: 150 kg</p>

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Oxygen

## Section 14. Transport information

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

## Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: This material is listed or exempted.  
United States Inventory (TSCA 8b): This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

### SARA 302/304

#### Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

### SARA 311/312

Classification : Sudden release of pressure

#### Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
oxygen	100	No.	Yes.	No.	No.	No.

### State regulations

Massachusetts : This material is listed.  
New York : This material is not listed.  
New Jersey : This material is listed.  
Pennsylvania : This material is listed.

### International regulations

#### International lists

#### National inventory

Australia : This material is listed or exempted.  
Canada : This material is listed or exempted.  
China : This material is listed or exempted.  
Europe : This material is listed or exempted.  
Japan : Not determined.  
Malaysia : Not determined.  
New Zealand : This material is listed or exempted.  
Philippines : This material is listed or exempted.  
Republic of Korea : This material is listed or exempted.

## Section 15. Regulatory information

### Canada

WHMIS (Canada) : Class A: Compressed gas.  
 Class C: Oxidizing material.  
**CEPA Toxic substances:** This material is not listed.  
**Canadian ARET:** This material is not listed.  
**Canadian NPRI:** This material is not listed.  
**Alberta Designated Substances:** This material is not listed.  
**Ontario Designated Substances:** This material is not listed.  
**Quebec Designated Substances:** This material is not listed.

## Section 16. Other information

Canada Label requirements : Class A: Compressed gas.  
 Class C: Oxidizing material.

### Hazardous Material Information System (U.S.A.)

Health	0
Flammability	0
Physical hazards	3

**Caution:** HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

### National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### Procedure used to derive the classification

Classification	Justification
Ox. Gas 1, H270 Press. Gas Comp. Gas, H280	Expert judgment According to package

### History

Date of printing : 8/26/2015  
 Date of issue/Date of revision : 8/26/2015  
 Date of previous issue : No previous validation  
 Version : 0.01

## Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



Argon

By

Airgas

# SAFETY DATA SHEET

# Airgas

Argon

## Section 1. Identification

GHS product identifier : Argon  
Chemical name : argon  
Other means of identification : Argon.  
Product use : Synthetic/Analytical chemistry.  
Synonym : Argon.  
SDS # : 001004  
Supplier's details : Airgas USA, LLC and its affiliates  
259 North Radnor-Chester Road  
Suite 100  
Radnor, PA 19087-5283  
1-610-687-5253  
  
Emergency telephone number (with hours of operation) : 1-866-734-3438

## Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).  
Classification of the substance or mixture : GASES UNDER PRESSURE - Compressed gas

### GHS label elements

Hazard pictograms :



Signal word : Warning  
Hazard statements : Contains gas under pressure; may explode if heated.  
May displace oxygen and cause rapid suffocation.

### Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction.  
Prevention : Use and store only outdoors or in a well ventilated place.  
Response : Not applicable.  
Storage : Protect from sunlight. Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.  
Disposal : Not applicable.  
Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

### Section 3. Composition/information on ingredients

Substance/mixture : Substance  
 Chemical name : argon  
 Other means of identification : Argon.

#### CAS number/other identifiers

CAS number : 7440-37-1  
 Product code : 001004

Ingredient name	%	CAS number
Argon	100	7440-37-1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

#### Description of necessary first aid measures

**Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

**Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion** : As this product is a gas, refer to the inhalation section.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

**Eye contact** : Contact with rapidly expanding gas may cause burns or frostbite.  
**Inhalation** : No known significant effects or critical hazards. Acts as a simple asphyxiant.  
**Skin contact** : Contact with rapidly expanding gas may cause burns or frostbite.  
**Frostbite** : Try to warm up the frozen tissues and seek medical attention.  
**Ingestion** : As this product is a gas, refer to the inhalation section.

##### Over-exposure signs/symptoms

**Eye contact** : No specific data.  
**Inhalation** : No specific data.  
**Skin contact** : No specific data.  
**Ingestion** : No specific data.

#### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## Section 4. First aid measures

- Specific treatments : No specific treatment.
- Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

- Hazardous thermal decomposition products : No specific data.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill : Immediately contact emergency personnel. Stop leak if without risk.
- Large spill : Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Argon	Oxygen Depletion [Asphyxiant]

**Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

#### Skin protection

## Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Gas.
- Color** : Colorless.
- Molecular weight** : 39.95 g/mole
- Molecular formula** : Ar
- Boiling/condensation point** : -185.9°C (-302.6°F)
- Melting/freezing point** : -189.2°C (-308.6°F)
- Critical temperature** : -122.4°C (-188.3°F)
- Odor** : Odorless.
- Odor threshold** : Not available.
- pH** : Not available.
- Flash point** : [Product does not sustain combustion.]
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : 1.66 (Air = 1)
- Specific Volume (ft<sup>3</sup>/lb)** : 9.7087
- Gas Density (lb/ft<sup>3</sup>)** : 0.103
- Relative density** : Not applicable.
- Solubility** : Not available.
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : 0.74
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.

Argon

## Section 9. Physical and chemical properties

SADT : Not available.

Viscosity : Not applicable.

## Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Not available.

#### Irritation/Corrosion

Not available.

#### Sensitization

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Not available.

## Section 11. Toxicological information

Information on the likely routes of exposure : Not available.

### Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.  
 Inhalation : No known significant effects or critical hazards. Acts as a simple asphyxiant.  
 Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.  
 Ingestion : As this product is a gas, refer to the inhalation section.

### Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.  
 Inhalation : No specific data.  
 Skin contact : No specific data.  
 Ingestion : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

Potential immediate effects : Not available.  
 Potential delayed effects : Not available.

#### Long term exposure

Potential immediate effects : Not available.  
 Potential delayed effects : Not available.

### Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.  
 Carcinogenicity : No known significant effects or critical hazards.  
 Mutagenicity : No known significant effects or critical hazards.  
 Teratogenicity : No known significant effects or critical hazards.  
 Developmental effects : No known significant effects or critical hazards.  
 Fertility effects : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

Not available.

### Persistence and degradability

Not available.



## Section 12. Ecological information

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Argon	0.74	-	low

### Mobility in soil






Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

## Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1006	UN1006	UN1006	UN1006	UN1006
UN proper shipping name	ARGON, COMPRESSED	ARGON, COMPRESSED	ARGON, COMPRESSED	ARGON, COMPRESSED	ARGON, COMPRESSED
Transport hazard class(es)	2.2 	2.2 	2.2 	2.2 	2.2 
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	<u>Limited quantity</u> Yes.  <u>Packaging instruction</u> <b>Passenger aircraft</b> Quantity limitation: 75 kg  <b>Cargo aircraft</b> Quantity limitation: 150 kg	<u>Explosive Limit and Limited Quantity Index</u> 0.125  <u>Passenger Carrying Road or Rail Index</u> 75  <u>Special provisions</u> 42	-	-	<u>Passenger and Cargo Aircraft</u> Quantity limitation: 75 kg <u>Cargo Aircraft Only</u> Quantity limitation: 150 kg

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

## Section 14. Transport information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

## Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** This material is listed or exempted.  
**United States inventory (TSCA 8b):** This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

### SARA 302/304

#### Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

### SARA 311/312

Classification : Sudden release of pressure

#### Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Argon	100	No.	Yes.	No.	No.	No.

### State regulations

Massachusetts : This material is listed.  
New York : This material is not listed.  
New Jersey : This material is listed.  
Pennsylvania : This material is listed.  
Canada inventory : This material is listed or exempted.

### International regulations

## Section 15. Regulatory information

International lists : **Australia inventory (AICS):** This material is listed or exempted.  
**China inventory (IECSC):** This material is listed or exempted.  
**Japan inventory:** Not determined.  
**Korea inventory:** This material is listed or exempted.  
**Malaysia Inventory (EHS Register):** Not determined.  
**New Zealand Inventory of Chemicals (NZIoC):** This material is listed or exempted.  
**Philippines inventory (PICCS):** This material is listed or exempted.  
**Taiwan inventory (CSNN):** Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

### Canada

WHMIS (Canada) : Class A: Compressed gas.  
**CEPA Toxic substances:** This material is not listed.  
**Canadian ARET:** This material is not listed.  
**Canadian NPRI:** This material is not listed.  
**Alberta Designated Substances:** This material is not listed.  
**Ontario Designated Substances:** This material is not listed.  
**Quebec Designated Substances:** This material is not listed.

## Section 16. Other information

Canada Label requirements : Class A: Compressed gas.

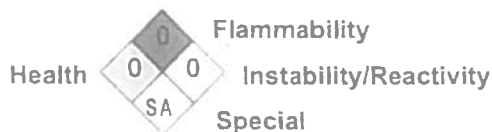
### Hazardous Material Information System (U.S.A.)

Health	0
Flammability	0
Physical hazards	0

**Caution:** HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

### National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

## Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### History

Date of printing	: 2/16/2015.
Date of issue/Date of revision	: 2/16/2015.
Date of previous issue	: 2/16/2015.
Version	: 0.05
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations ACGIH – American Conference of Governmental Industrial Hygienists AIHA – American Industrial Hygiene Association CAS – Chemical Abstract Services CEPA – Canadian Environmental Protection Act CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act (EPA) CFR – United States Code of Federal Regulations CPR – Controlled Products Regulations DSL – Domestic Substances List GWP – Global Warming Potential IARC – International Agency for Research on Cancer ICAO – International Civil Aviation Organisation Inh – Inhalation LC – Lethal concentration LD – Lethal dosage NDSL – Non-Domestic Substances List NIOSH – National Institute for Occupational Safety and Health TDG – Canadian Transportation of Dangerous Goods Act and Regulations TLV – Threshold Limit Value TSCA – Toxic Substances Control Act WEEL – Workplace Environmental Exposure Level WHMIS – Canadian Workplace Hazardous Material Information System

References : Not available.

Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Acetylene

By

Airgas

# SAFETY DATA SHEET

**Airgas**

Acetylene

## Section 1. Identification

GHS product identifier : Acetylene  
Chemical name : acetylene  
Other means of identification : Ethyne; Ethine; Narcylen; C2H2; Acetylen; UN 1001; Vinylene  
Product use : Synthetic/Analytical chemistry.  
Synonym : Ethyne; Ethine; Narcylen; C2H2; Acetylen; UN 1001; Vinylene  
SDS # : 001001  
Supplier's details : Airgas USA, LLC and its affiliates  
259 North Radnor-Chester Road  
Suite 100  
Radnor, PA 19087-5283  
1-610-687-5253  
24-hour telephone : 1-866-734-3438

## Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).  
Classification of the substance or mixture : FLAMMABLE GASES - Category 1  
GASES UNDER PRESSURE - Compressed gas

### GHS label elements

#### Hazard pictograms



Signal word

Danger

Hazard statements

Extremely flammable gas.  
May form explosive mixtures with air.  
Contains gas under pressure; may explode if heated.  
May displace oxygen and cause rapid suffocation.

### Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Fusible plugs in top, bottom, or valve melt at 98°C to 107°C (208°F to 224°F). Do not discharge at pressures above 15psig (103kpa). Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Approach suspected leak area with caution.

Prevention : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response : Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

Storage : Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Disposal : Not applicable.

Hazards not otherwise : In addition to any other important health or physical hazards, this product may displace

Acetylene

### Section 3. Composition/information on ingredients

Substance/mixture : Substance  
Chemical name : acetylene  
Other means of identification : Ethyne; Ethine; Narcylen; C<sub>2</sub>H<sub>2</sub>; Acetylen; UN 1001; Vinylene

#### CAS number/other identifiers

CAS number : 74-86-2  
Product code : 001001

Ingredient name	%	CAS number
acetylene	100	74-86-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

#### Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : As this product is a gas, refer to the inhalation section.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.  
Inhalation : No known significant effects or critical hazards.  
Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.  
Frostbite : Try to warm up the frozen tissues and seek medical attention.  
Ingestion : As this product is a gas, refer to the inhalation section.

##### Over-exposure signs/symptoms

Eye contact : No specific data.  
Inhalation : No specific data.  
Skin contact : No specific data.  
Ingestion : No specific data.

#### Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## Section 4. First aid measures

- Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

- Unsuitable extinguishing media : None known.

- Specific hazards arising from the chemical : Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

- Hazardous thermal decomposition products : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide

- Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

- Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

- For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

- Large spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.



## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
acetylene	NIOSH REL (United States, 10/2013). CEIL: 2662 mg/m <sup>3</sup> CEIL: 2500 ppm

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

### Skin protection

## Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Gas.
- Color** : Colorless.
- Molecular weight** : 26.04 g/mole
- Molecular formula** : C<sub>2</sub>H<sub>2</sub>
- Melting/freezing point** : -81°C (-113.8°F)
- Critical temperature** : 35.25°C (95.5°F)
- Odor** : Mild. Ethereal.
- Odor threshold** : Not available.
- pH** : Not available.
- Flash point** : Closed cup: -18.15°C (-0.67°F)
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and oxidizing materials.
- Lower and upper explosive (flammable) limits** : Lower: 2.3%  
Upper: 100%
- Vapor pressure** : 635 (psig)
- Vapor density** : 0.907 (Air = 1)
- Specific Volume (ft<sup>3</sup>/lb)** : 14.7058
- Gas Density (lb/ft<sup>3</sup>)** : 0.0691
- Relative density** : Not applicable.
- Solubility** : Not available.
- Solubility in water** : 1.2 g/l
- Partition coefficient: n-octanol/water** : 0.37
- Auto-ignition temperature** : 305°C (581°F)
- Decomposition temperature** : Not available.
- SADT** : Not available.

## Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- Incompatible materials** : Oxidizers
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Hazardous polymerization** : Under normal conditions of storage and use, hazardous polymerization will not occur.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Not available.

#### Irritation/Corrosion

Not available.

#### Sensitization

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Not available.

#### Potential acute health effects

**Eye contact** : Contact with rapidly expanding gas may cause burns or frostbite.

## Section 11. Toxicological information

- Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.  
 Ingestion : As this product is a gas, refer to the inhalation section.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact : No specific data.  
 Inhalation : No specific data.  
 Skin contact : No specific data.  
 Ingestion : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- Potential immediate effects : Not available.  
 Potential delayed effects : Not available.

#### Long term exposure

- Potential immediate effects : Not available.  
 Potential delayed effects : Not available.

#### Potential chronic health effects

Not available.

- General : No known significant effects or critical hazards.  
 Carcinogenicity : No known significant effects or critical hazards.  
 Mutagenicity : No known significant effects or critical hazards.  
 Teratogenicity : No known significant effects or critical hazards.  
 Developmental effects : No known significant effects or critical hazards.  
 Fertility effects : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

Not available.

### Persistence and degradability

Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
acetylene	0.37	-	low

### Mobility in soil

- Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

Acetylene






## Section 12. Ecological information

Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

## Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1001	UN1001	UN1001	UN1001	UN1001
UN proper shipping name	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	<p><u>Limited quantity</u> Yes.</p> <p><u>Packaging instruction</u> <b>Passenger aircraft</b> Quantity limitation: Forbidden</p> <p><b>Cargo aircraft</b> Quantity limitation: 15 kg</p>	<p>Product classified as per the following sections of the Transportation of Dangerous Goods Regulations 2.13.2.17 (Class 2).</p> <p><u>Explosive Limit and Limited Quantity Index</u> 0</p> <p><u>Passenger Carrying Ship Index</u> 75</p> <p><u>Passenger Carrying Road or Rail Index</u> Forbidden</p> <p><u>Special provisions</u> 38</p>			<p><u>Passenger and Cargo Aircraft</u> Quantity limitation: 0 Forbidden <u>Cargo Aircraft Only</u> Quantity limitation: 15 kg</p>

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Acetylene

## Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined  
United States inventory (TSCA 8b): This material is listed or exempted.  
Clean Air Act (CAA) 112 regulated flammable substances: acetylene

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

### SARA 302/304

#### Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

### SARA 311/312

Classification : Fire hazard  
Sudden release of pressure

#### Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
acetylene	100	Yes.	Yes.	No.	No.	No.

### State regulations

Massachusetts : This material is listed.  
New York : This material is not listed.  
New Jersey : This material is listed.  
Pennsylvania : This material is listed.

### International regulations

#### International lists

#### National inventory

Australia : This material is listed or exempted.  
Canada : This material is listed or exempted.  
China : This material is listed or exempted.  
Europe : This material is listed or exempted.  
Japan : This material is listed or exempted.  
Malaysia : Not determined.  
New Zealand : This material is listed or exempted.  
Philippines : This material is listed or exempted.  
Republic of Korea : This material is listed or exempted.  
Taiwan : This material is listed or exempted.

### Canada

WHMIS (Canada) : Class A: Compressed gas.

## Section 15. Regulatory information

**CEPA Toxic substances:** This material is not listed.

**Canadian ARET:** This material is not listed.

**Canadian NPRI:** This material is listed.

**Alberta Designated Substances:** This material is not listed.

**Ontario Designated Substances:** This material is not listed.

**Quebec Designated Substances:** This material is not listed.

## Section 16. Other information

**Canada Label requirements :** Class A: Compressed gas.  
Class B-1: Flammable gas.  
Class F: Dangerously reactive material.

### Hazardous Material Information System (U.S.A.)

Health	1
Flammability	4
Physical hazards	2

**Caution:** HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

### National Fire Protection Association (U.S.A.)



Note: The instability hazard rating for acetylene, dissolved (stabilized acetylene) is 2.

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### Procedure used to derive the classification

Classification	Justification
Flam. Gas 1, H220 Press. Gas Comp. Gas, H280	Expert judgment According to package

### History

Date of printing : 3/8/2016  
Date of issue/Date of revision : 3/8/2016  
Date of previous issue : No previous validation  
Version : 0.01

## Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



Propane

By

Airgas

# SAFETY DATA SHEET

# Airgas

Propane

## Section 1. Identification

GHS product identifier	: Propane
Chemical name	: propane
Other means of identification	: Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied, n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant.
Product use	: Synthetic/Analytical chemistry.
Synonym	: Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied, n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant.
SDS #	: 001045
Supplier's details	: Airgas USA, LLC and its affiliates 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
24-hour telephone	: 1-866-734-3438

## Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Liquefied gas

### GHS label elements

Hazard pictograms



Signal word	: Danger
Hazard statements	: Extremely flammable gas. Contains gas under pressure; may explode if heated. May cause frostbite. May form explosive mixtures in Air. May displace oxygen and cause rapid suffocation.

### Precautionary statements

General	: Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Approach suspected leak area with caution.
Prevention	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Response	: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.
Storage	: Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-

## Section 2. Hazards identification

- Disposal : Not applicable.
- Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

## Section 3. Composition/information on ingredients

- Substance/mixture : Substance
- Chemical name : propane
- Other means of identification : Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied, n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant.

### CAS number/other identifiers

- CAS number : 74-98-6
- Product code : 001045

Ingredient name	%	CAS number
Propane	100	74-98-6

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact : Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion : As this product is a gas, refer to the inhalation section.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact : No known significant effects or critical hazards.
- Inhalation : No known significant effects or critical hazards.
- Skin contact : No known significant effects or critical hazards.
- Frostbite : Try to warm up the frozen tissues and seek medical attention.
- Ingestion : As this product is a gas, refer to the inhalation section.

#### Over-exposure signs/symptoms

- Eye contact : No specific data.
- Inhalation : No specific data.

## Section 4. First aid measures

Ingestion : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments : No specific treatment.
- Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Hazardous thermal decomposition products : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

## Section 6. Accidental release measures

- Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Propane	<p><b>NIOSH REL (United States, 10/2013).</b>            TWA: 1800 mg/m<sup>3</sup> 10 hours.            TWA: 1000 ppm 10 hours.</p> <p><b>OSHA PEL (United States, 2/2013).</b>            TWA: 1800 mg/m<sup>3</sup> 8 hours.            TWA: 1000 ppm 8 hours.</p> <p><b>OSHA PEL 1989 (United States, 3/1989).</b>            TWA: 1800 mg/m<sup>3</sup> 8 hours.            TWA: 1000 ppm 8 hours.</p>

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

## Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Gas. [Liquefied compressed gas.]
- Color** : Colorless.
- Molecular weight** : 44.11 g/mole
- Molecular formula** : C<sub>3</sub>H<sub>8</sub>
- Boiling/condensation point** : -161.48°C (-258.7°F)
- Melting/freezing point** : -187.6°C (-305.7°F)
- Critical temperature** : 96.55°C (205.8°F)
- Odor** : Odorless.BUT MAY HAVE SKUNK ODOR ADDED.
- Odor threshold** : Not available.
- pH** : Not available.
- Flash point** : Closed cup: -104°C (-155.2°F)  
Open cup: -104°C (-155.2°F)
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and oxidizing materials.
- Lower and upper explosive (flammable) limits** : Lower: 1.8%  
Upper: 8.4%
- Vapor pressure** : 109 (psig)

## Section 9. Physical and chemical properties

Specific Volume (ft <sup>3</sup> /lb)	: 8.6206
Gas Density (lb/ft <sup>3</sup> )	: 0.116 (25°C / 77 to °F)
Relative density	: Not applicable.
Solubility	: Not available.
Solubility in water	: 0.0244 g/l
Partition coefficient: n-octanol/water	: 1.09
Auto-ignition temperature	: 287°C (548.6°F)
Decomposition temperature	: Not available.
SADT	: Not available.
Viscosity	: Not applicable.

## Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Incompatible materials	: Oxidizers
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Not available.

IDLH : 2100 ppm

#### Irritation/Corrosion

Not available.

#### Sensitization

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

## Section 11. Toxicological information

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

### Potential acute health effects

Eye contact : No known significant effects or critical hazards.  
Inhalation : No known significant effects or critical hazards.  
Skin contact : No known significant effects or critical hazards.  
Ingestion : As this product is a gas, refer to the inhalation section.

### Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.  
Inhalation : No specific data.  
Skin contact : No specific data.  
Ingestion : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

Potential immediate effects : Not available.  
Potential delayed effects : Not available.

#### Long term exposure

Potential immediate effects : Not available.  
Potential delayed effects : Not available.

### Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.  
Carcinogenicity : No known significant effects or critical hazards.  
Mutagenicity : No known significant effects or critical hazards.  
Teratogenicity : No known significant effects or critical hazards.  
Developmental effects : No known significant effects or critical hazards.  
Fertility effects : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.



Propane

## Section 12. Ecological information

### Toxicity

Not available.

### Persistence and degradability

Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Propane	1.09	-	low

### Mobility in soil






Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

## Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1978	UN1978	UN1978	UN1978	UN1978
UN proper shipping name	PROPANE	PROPANE	PROPANE	PROPANE	PROPANE
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	<u>Limited quantity</u> Yes. <u>Packaging instruction</u> <b>Passenger aircraft</b> Quantity limitation: Forbidden.  <b>Cargo aircraft</b> Quantity limitation: 150 kg	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations, 2.13-2.17 (Class 2).  <u>Explosive Limit and Limited Quantity Index</u> 0.125	-	-	<u>Passenger and Cargo Aircraft</u> Quantity limitation: 0 <u>Forbidden Cargo Aircraft Only</u> Quantity limitation: 150 kg

## Section 14. Transport information

		<u>Passenger Carrying Ship Index</u> 65			
		<u>Passenger Carrying Road or Rail Index</u> Forbidden			
		<u>Special provisions</u> 29, 42			

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

## Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**United States inventory (TSCA 8b):** This material is listed or exempted.  
**Clean Air Act (CAA) 112 regulated flammable substances:** propane

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

**SARA 302/304**

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

**SARA 311/312**

Classification : Fire hazard  
Sudden release of pressure

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Propane	100	Yes.	Yes.	No.	No.	No.

State regulations

Massachusetts : This material is listed.

## Section 15. Regulatory information

- New Jersey : This material is listed.
- Pennsylvania : This material is listed.

### International regulations

#### International lists

#### National inventory

- Australia : This material is listed or exempted.
- Canada : This material is listed or exempted.
- China : This material is listed or exempted.
- Europe : This material is listed or exempted.
- Japan : This material is listed or exempted.
- Malaysia : This material is listed or exempted.
- New Zealand : This material is listed or exempted.
- Philippines : This material is listed or exempted.
- Republic of Korea : This material is listed or exempted.
- Taiwan : This material is listed or exempted.

### Canada

- WHMIS (Canada) : Class A: Compressed gas.  
Class B-1: Flammable gas.
- CEPA Toxic substances:** This material is not listed.
- Canadian ARET:** This material is not listed.
- Canadian NPRI:** This material is listed.
- Alberta Designated Substances:** This material is not listed.
- Ontario Designated Substances:** This material is not listed.
- Quebec Designated Substances:** This material is not listed.

## Section 16. Other information

- Canada Label requirements : Class A: Compressed gas.  
Class B-1: Flammable gas.

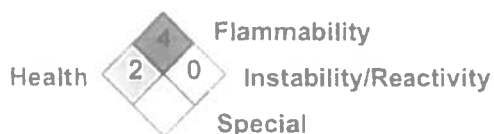
### Hazardous Material Information System (U.S.A.)

Health	1
Flammability	4
Physical hazards	2

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

### National Fire Protection Association (U.S.A.)



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## Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### Procedure used to derive the classification

Classification	Justification
Flam. Gas 1, H220 Press. Gas Liq. Gas, H280	Expert judgment Expert judgment

### History

Date of printing	: 10/20/2015
Date of issue/Date of revision	: 10/20/2015
Date of previous issue	: No previous validation
Version	: 0.01
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

Other special considerations : The information below is given to call attention to the issue of "Naturally occurring radioactive materials". Although Radon-222 levels in the product represented by this MSDS do not present any direct Radon exposure hazard, customers should be aware of the potential for Radon daughter build up within their processing systems, whatever the source of their product streams. Radon-222 is a naturally occurring radioactive gas which can be a contaminant in natural gas. During subsequent processing, Radon tends to be concentrated in Liquefied Petroleum Gas streams and in product streams having a similar boiling point range. Industry experience has shown that this product may contain small amounts of Radon-222 and its radioactive decay products, called Radon "daughters". The actual concentration of Radon-222 and radioactive daughters in the delivered product is dependent on the geographical source of the natural gas and storage time prior to delivery. Process equipment (i.e. lines, filters, pumps and reaction units) may accumulate significant levels of radioactive daughters and show a gamma radiation reading during operation. A potential external radiation hazard exists at or near any pipe valve or vessel containing a Radon enriched stream, or containing internal deposits of radioactive material due to the transmission of gamma radiation through its wall. Field studies reported in the literature have not shown any conditions that subject workers to cumulative exposures in excess of general population limits. Equipment emitting gamma radiation should be presumed to be internally contaminated with alpha emitting decay products which may be a hazard if inhaled or ingested. Protective equipment such as coveralls, gloves, and respirator (NIOSH/MHSA approved for high efficiency particulates and radionuclides, or supplied air) should be worn by personnel entering a vessel or working on contaminated process equipment to prevent skin contamination, ingestion, or inhalation of any residues containing alpha radiation. Airborne contamination may be minimized by handling scale and/or contaminated materials in a wet state.

Propane

## Section 16. Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Nitrogen

By

Airgas

# SAFETY DATA SHEET

# Airgas

Nitrogen

## Section 1. Identification

GHS product identifier : Nitrogen  
Chemical name : nitrogen  
Other means of identification : nitrogen (dot); nitrogen gas; Nitrogen NF, Nitrogen FG  
Product use : Synthetic/Analytical chemistry.  
Synonym : nitrogen (dot); nitrogen gas; Nitrogen NF, Nitrogen FG  
SDS # : 001040  
Supplier's details : Airgas USA, LLC and its affiliates  
259 North Radnor-Chester Road  
Suite 100  
Radnor, PA 19087-5283  
1-610-687-5253  
24-hour telephone : 1-866-734-3438

## Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : GASES UNDER PRESSURE - Compressed gas

### GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : Contains gas under pressure; may explode if heated.  
May displace oxygen and cause rapid suffocation.

### Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction.

Prevention : Not applicable.

Response : Not applicable.

Storage : Protect from sunlight. Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Disposal : Not applicable.

Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

### Section 3. Composition/information on ingredients

Substance/mixture : Substance  
 Chemical name : nitrogen  
 Other means of identification : nitrogen (dot); nitrogen gas; Nitrogen NF, Nitrogen FG

#### CAS number/other identifiers

CAS number : 7727-37-9  
 Product code : 001040

Ingredient name	%	CAS number
Nitrogen	100	7727-37-9

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

#### Description of necessary first aid measures

**Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

**Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion** : As this product is a gas, refer to the inhalation section.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

**Eye contact** : Contact with rapidly expanding gas may cause burns or frostbite.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : Contact with rapidly expanding gas may cause burns or frostbite.  
**Frostbite** : Try to warm up the frozen tissues and seek medical attention.  
**Ingestion** : As this product is a gas, refer to the inhalation section.

##### Over-exposure signs/symptoms

**Eye contact** : No specific data.  
**Inhalation** : No specific data.  
**Skin contact** : No specific data.  
**Ingestion** : No specific data.

#### Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed.



## Section 4. First aid measures

- Specific treatments : No specific treatment.
- Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Hazardous thermal decomposition products : Decomposition products may include the following materials:  
nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill : Immediately contact emergency personnel. Stop leak if without risk.
- Large spill : Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

## Section 7. Handling and storage

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Nitrogen	Oxygen Depletion [Asphyxiant]

**Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### Appearance

Physical state	: Gas. [Compressed gas.]
Color	: Colorless.
Molecular weight	: 28.02 g/mole
Molecular formula	: N <sub>2</sub>
Boiling/condensation point	: -196°C (-320.8°F)
Melting/freezing point	: -210.01°C (-346°F)
Critical temperature	: -146.95°C (-232.5°F)
Odor	: Odorless.
Odor threshold	: Not available.
pH	: Not available.
Flash point	: [Product does not sustain combustion.]
Burning time	: Not applicable.
Burning rate	: Not applicable.
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: 0.967 (Air = 1) Liquid Density@BP: 50.46 lb/ft <sup>3</sup> (808.3 kg/m <sup>3</sup> )
Specific Volume (ft <sup>3</sup> /lb)	: 13.8889
Gas Density (lb/ft <sup>3</sup> )	: 0.072
Relative density	: Not applicable.
Solubility	: Not available.
Solubility in water	: Not available.
Partition coefficient: n-octanol/water	: 0.67
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
SADT	: Not available.
Viscosity	: Not applicable.

## Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 10. Stability and reactivity

### Irritation/Corrosion

Not available.

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

### Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.  
Inhalation : No known significant effects or critical hazards.  
Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.  
Ingestion : As this product is a gas, refer to the inhalation section.

### Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.  
Inhalation : No specific data.  
Skin contact : No specific data.  
Ingestion : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

Potential immediate effects : Not available.  
Potential delayed effects : Not available.

#### Long term exposure

Potential immediate effects : Not available.  
Potential delayed effects : Not available.

### Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

## Section 11. Toxicological information

- Mutagenicity : No known significant effects or critical hazards.  
 Teratogenicity : No known significant effects or critical hazards.  
 Developmental effects : No known significant effects or critical hazards.  
 Fertility effects : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

Not available.

### Persistence and degradability

Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Nitrogen	0.67	-	low

### Mobility in soil






Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

## Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1066	UN1066	UN1066	UN1066	UN1066
UN proper shipping name	NITROGEN, COMPRESSED	NITROGEN, COMPRESSED	NITROGEN, COMPRESSED	NITROGEN, COMPRESSED	NITROGEN, COMPRESSED
Transport hazard class(es)	2.2 	2.2 	2.2 	2.2 	2.2 

## Section 14. Transport information

Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	<p><b>Limited quantity</b> Yes.</p> <p><b>Packaging instruction</b> Passenger aircraft Quantity limitation: 75 kg</p> <p>Cargo aircraft Quantity limitation: 150 kg</p>	<p>Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).</p> <p><b>Explosive Limit and Limited Quantity Index</b> 0.125</p> <p><b>Passenger Carrying Road or Rail Index</b> 75</p>	-	-	<p><b>Passenger and Cargo Aircraft</b> Quantity limitation: 75 kg</p> <p><b>Cargo Aircraft Only</b> Quantity limitation: 150 kg</p>

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

## Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** This material is listed or exempted.  
**United States inventory (TSCA 8b):** This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

### SARA 302/304

#### Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

### SARA 311/312

Classification : Sudden release of pressure

#### Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard

## Section 15. Regulatory information

### State regulations

Massachusetts	: This material is listed.
New York	: This material is not listed.
New Jersey	: This material is listed.
Pennsylvania	: This material is listed.

### International regulations

#### International lists

#### National inventory

Australia	: This material is listed or exempted.
Canada	: This material is listed or exempted.
China	: This material is listed or exempted.
Europe	: This material is listed or exempted.
Japan	: Not determined.
Malaysia	: Not determined.
New Zealand	: This material is listed or exempted.
Philippines	: This material is listed or exempted.
Republic of Korea	: This material is listed or exempted.
Taiwan	: This material is listed or exempted.

#### Canada

WHMIS (Canada)	: Class A: Compressed gas.
<b>CEPA Toxic substances:</b>	This material is not listed.
<b>Canadian ARET:</b>	This material is not listed.
<b>Canadian NPRI:</b>	This material is not listed.
<b>Alberta Designated Substances:</b>	This material is not listed.
<b>Ontario Designated Substances:</b>	This material is not listed.
<b>Quebec Designated Substances:</b>	This material is not listed.

## Section 16. Other information

Canada Label requirements : Class A: Compressed gas.

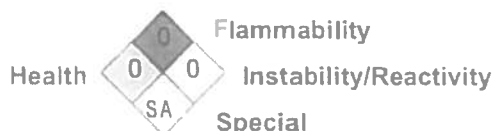
### Hazardous Material Information System (U.S.A.)

Health	0
Flammability	0
Physical hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

### National Fire Protection Association (U.S.A.)



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## Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### Procedure used to derive the classification

Classification	Justification
Press. Gas Comp. Gas, H280	Expert judgment

### History

Date of printing : 8/7/2015  
 Date of issue/Date of revision : 8/7/2015  
 Date of previous issue : No previous validation  
 Version : 0.01  
 Key to abbreviations : ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 UN = United Nations  
 References : Not available.

Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



Oxygen

By

BOC

**SAFETY DATA SHEET**  
**Oxygen, compressed**Issue Date: 16.01.2013  
Last revised date: 02.06.2015

Version: 1. 2

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1/13**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Product name: Oxygen, compressed

**Additional identification**

Chemical name: oxygen

Chemical formula: O<sub>2</sub>

INDEX No. 008-001-00-8

CAS-No. 7782-44-7

EC No. 231-956-9

REACH Registration No. Listed in Annex IV/V of Regulation (EC) No 1907/2006 (REACH), exempted from registration.

**1.2 Relevant identified uses of the substance or mixture and uses advised against****Identified uses:**Industrial and professional. Perform risk assessment prior to use.  
Balance gas for mixtures. Calibration gas. Carrier gas. Chemical synthesis.  
Combustion, melting and cutting processes. Food packaging gas. Laboratory  
use. Laser gas. Oxidising agent. Process gas. Shielding gas in gas welding.  
Test gas. Use of gas to manufacture pharmaceutical products.  
Consumer use.**Uses advised against**Oxidising agent.  
Industrial or technical grade unsuitable for medical and/or food applications  
or inhalation.**1.3 Details of the supplier of the safety data sheet****Supplier**BOC  
Priestley Road, Worsley  
M28 2UT Manchester

Telephone: 0800 111 333

E-mail: ReachSDS@boc.com

**1.4 Emergency telephone number: 0800 111 333**

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**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

Classification according to Directive 67/548/EEC or 1999/45/EC as amended.

O; R8

The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended.

**Physical Hazards**

Oxidising gases	Category 1	H270: May cause or intensify fire, oxidiser.
Gases under pressure	Compressed gas	H280: Contains gas under pressure; may explode if heated.

**2.2 Label Elements**



**Signal Words:** Danger

**Hazard Statement(s):** H270: May cause or intensify fire; oxidiser.  
 H280: Contains gas under pressure; may explode if heated.

**Precautionary Statement**

**Prevention:** P220: Keep/Store away from combustible materials  
 P244: Keep valves and fittings free from oil and grease.

**Response:** P370+P376: In case of fire: Stop leak if safe to do so.

**Storage:** P403: Store in a well-ventilated place.

**Disposal:** None.

**2.3 Other hazards:** None.

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**SECTION 3: Composition/information on ingredients**

**3.1 Substances**

Chemical name	oxygen
INDEX No.:	008-001-00-8
CAS-No.:	7782-44-7
EC No.:	231-956-9
REACH Registration No.:	Listed in Annex IV/V of Regulation (EC) No 1907/2006 (REACH), exempted from registration.
Purity:	100 % The purity of the substance in this section is used for classification only, and does not represent the actual purity of the substance as supplied, for which other documentation should be consulted.
Trade name:	-

**SECTION 4: First Aid Measures**

General:	Move the exposed person to fresh air at once.
<b>4.1 Description of first aid measures</b>	
Inhalation:	Move the exposed person to fresh air at once.
Eye contact:	Adverse effects not expected from this product.
Skin Contact:	Adverse effects not expected from this product.
Ingestion:	Ingestion is not considered a potential route of exposure
<b>4.2 Most important symptoms and effects, both acute and delayed:</b>	Continuous inhalation of concentrations higher than 75% may cause nausea, dizziness, respiratory difficulty and convulsion.
<b>4.3 Indication of any immediate medical attention and special treatment needed</b>	
Hazards:	None.
Treatment:	None.

**SECTION 5: Firefighting Measures**

General Fire Hazards:	Heat may cause the containers to explode.
<b>5.1 Extinguishing media</b>	
Suitable extinguishing media:	Water. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media:	None.
<b>5.2 Special hazards arising from the substance or mixture:</b>	Supports combustion.

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Hazardous Combustion Products: None.

**5.3 Advice for firefighters**

**Special fire fighting procedures:** In case of fire: Stop leak if safe to do so. Continue water spray from protected position until container stays cool. Use extinguishants to contain the fire. Isolate the source of the fire or let it burn out.

**Special protective equipment for firefighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Guideline: EN 469 Protective clothing for firefighters. Performance requirements for protective clothing for firefighting. EN 15090 Footwear for firefighters. EN 659 Protective gloves for firefighters. EN 443 Helmets for fire fighting in buildings and other structures. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

**SECTION 6: Accidental Release Measures**

- |   |  |
|---|--|
| <b>6.1 Personal precautions, protective equipment and emergency procedures:</b> | Evacuate area. Eliminate all ignition sources if safe to do so. Provide adequate ventilation. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Monitor the concentration of the released product. |
| <b>6.2 Environmental Precautions:</b>   | Prevent further leakage or spillage if safe to do so.  |
| <b>6.3 Methods and material for containment and cleaning up:</b>                | Provide adequate ventilation.  |
| <b>6.4 Reference to other sections:</b>   | Refer to sections 8 and 13.  |

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5/13**SECTION 7: Handling and Storage:**

- 7.1 Precautions for safe handling:** Only experienced and properly instructed persons should handle gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Keep equipment free from oil and grease. Open valve slowly to avoid pressure shock. Use only oxygen approved lubricants and sealants. Use only with equipment cleaned for oxygen service and rated for the pressure. Refer to supplier's handling instructions. The substance must be handled in accordance with good industrial hygiene and safety procedures. Protect containers from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the container contents. When moving containers, even for short distances, use appropriate equipment eg. trolley, hand truck, fork truck etc. Secure cylinders in an upright position at all times, close all valves when not in use. Provide adequate ventilation. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Avoid suckback of water, acid and alkalis. Keep container below 50°C in a well ventilated place. Observe all regulations and local requirements regarding storage of containers. When using do not eat, drink or smoke. Store in accordance with local/regional/national/international regulations. Never use direct flame or electrical heating devices to raise the pressure of a container. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Damaged valves should be reported immediately to the supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminants particularly oil and water. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to transfer gases from one container to another. Container valve guards or caps should be in place.
- 7.2 Conditions for safe storage, including any incompatibilities:** Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible material. Avoid asphalted locations for storage, transfer and use (ignition risk if spilt). Segregate from flammable gases and other flammable materials being stored.
- 7.3 Specific end use(s):** None.

**SECTION 8: Exposure Controls/Personal Protection****8.1 Control Parameters****Occupational Exposure Limits**

None of the components have assigned exposure limits.

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**8.2 Exposure controls**

**Appropriate engineering controls:** Consider a work permit system e.g. for maintenance activities. Ensure adequate air ventilation. Avoid oxygen rich (>23,5%) atmospheres. Gas detectors should be used when quantities of oxidising gases may be released. Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Systems under pressure should be regularly checked for leakages. Preferably use permanent leak tight connections (eg. welded pipes). Do not eat, drink or smoke when using the product.

**Individual protection measures, such as personal protective equipment**

**General information:** A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Keep self contained breathing apparatus readily available for emergency use. Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

**Eye/face protection:** Wear eye protection to EN 166 when using gases.  
 Guideline: EN 166 Personal Eye Protection.

**Skin protection**  
**Hand Protection:** Wear working gloves while handling containers  
 Guideline: EN 388 Protective gloves against mechanical risks.

**Body protection:** No special precautions.

**Other:** Wear safety shoes while handling containers  
 Guideline: ISO 20345 Personal protective equipment - Safety footwear.

**Respiratory Protection:** Not required.

**Thermal hazards:** No precautionary measures are necessary.

**Hygiene measures:** Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Do not eat, drink or smoke when using the product.

**Environmental exposure controls:** For waste disposal, see section 13.

**SECTION 9: Physical And Chemical Properties**

**9.1 Information on basic physical and chemical properties**

**Appearance**

<b>Physical state:</b>	Gas
<b>Form:</b>	Compressed gas
<b>Colour:</b>	Colourless
<b>Odour:</b>	Odourless
<b>Odour Threshold:</b>	Odour threshold is subjective and is inadequate to warn of over exposure.

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pH:	not applicable.
Melting Point:	-218.4 °C
Boiling Point:	-183 °C
Sublimation Point:	not applicable.
Critical Temp. (°C):	-118.0 °C
Flash Point:	Not applicable to gases and gas mixtures.
Evaporation Rate:	Not applicable to gases and gas mixtures.
Flammability (solid, gas):	This product is not flammable.
Flammability limit - upper (%)-:	not applicable.
Flammability limit - lower (%)-:	not applicable.
Vapour pressure:	4,053 kPa ( -124.1 °C)
Vapour density (air=1):	No data available.
Relative density:	1.1
Solubility(ies)	
Solubility in Water:	39 mg/l
Partition coefficient (n-octanol/water):	Not known.
Autoignition Temperature:	not applicable.
Decomposition Temperature:	Not known.
Viscosity	
Kinematic viscosity:	No data available.
Dynamic viscosity:	No data available.
Explosive properties:	Not applicable.
Oxidising Properties:	Oxidising
9.2 Other information:	None.
Molecular weight:	32 g/mol ( O <sub>2</sub> )

<b>SECTION 10: Stability and Reactivity</b>
---

10.1 Reactivity:	No reactivity hazard other than the effects described in sub-section below.
10.2 Chemical Stability:	Stable under normal conditions.
10.3 Possibility of Hazardous Reactions:	Violently oxidises organic material. May react violently with combustible materials. May react violently with reducing agents.
10.4 Conditions to Avoid:	None.
10.5 Incompatible Materials:	Combustible materials Reducing Agents. Keep equipment free from oil and grease. For material compatibility see latest version of ISO-11114. Consider the potential toxicity hazard due to the presence of chlorinated or fluorinated polymers in high pressure (>30 bar) oxygen lines and equipment in case of combustion.



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10.6 Hazardous Decomposition Products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**SECTION 11: Toxicological Information**

General information: None.

**11.1 Information on toxicological effects**

Acute toxicity - Oral Product Based on available data, the classification criteria are not met.

Acute toxicity - Dermal Product Based on available data, the classification criteria are not met.

Acute toxicity - Inhalation Product Not classified for acute toxicity based on available data.

Skin Corrosion/Irritation Product Based on available data, the classification criteria are not met.

Serious Eye Damage/Eye Irritation Product Based on available data, the classification criteria are not met.

Respiratory or Skin Sensitisation Product Based on available data, the classification criteria are not met.

Germ Cell Mutagenicity Product Based on available data, the classification criteria are not met.

Carcinogenicity Product Based on available data, the classification criteria are not met.

Reproductive toxicity Product Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure Product Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure Product Based on available data, the classification criteria are not met.

Aspiration Hazard Product Not applicable to gases and gas mixtures..

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**SECTION 12: Ecological Information**
**12.1 Toxicity**

 Acute toxicity  
 Product

No ecological damage caused by this product.

**12.2 Persistence and Degradability**  
 Product

Not applicable to gases and gas mixtures..

**12.3 Bioaccumulative Potential**  
 Product

The substance is naturally occurring.

**12.4 Mobility in Soil**  
 Product

Because of its high volatility, the product is unlikely to cause ground or water pollution.

**12.5 Results of PBT and vPvB assessment**  
 Product

Not classified as PBT or vPvB.

**12.6 Other Adverse Effects:**

No ecological damage caused by this product.

**SECTION 13: Disposal Considerations**
**13.1 Waste treatment methods**

General information:

Do not discharge into any place where its accumulation could be dangerous. Vent to atmosphere in a well ventilated place.

Disposal methods:

 Refer to the EIGA code of practice (Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.org>) for more guidance on suitable disposal methods. Dispose of container via supplier only. Discharge, treatment, or disposal may be subject to national, state, or local laws.

European Waste Codes

Container:

16 05 04\*: gases in pressure containers (including halons) containing dangerous substances

**SECTION 14: Transport Information**

## ADR

14.1 UN Number:	UN 1072
14.2 UN Proper Shipping Name:	OXYGEN, COMPRESSED
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.2, 5.1
Hazard No. (ADR):	25
Tunnel restriction code:	(E)
Emergency Action Code:	25
14.4 Packing Group:	-
14.5 Environmental hazards:	not applicable

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14.6 Special precautions for user: -

**RID**

 14.1 UN Number: UN 1072  
 14.2 UN Proper Shipping Name: OXYGEN, COMPRESSED  
 14.3 Transport Hazard Class(es)  
   Class: 2  
   Label(s): 2.2, 5.1  
 14.4 Packing Group: -  
 14.5 Environmental hazards: not applicable  
 14.6 Special precautions for user: -

**IMDG**

 14.1 UN Number: UN 1072  
 14.2 UN Proper Shipping Name: OXYGEN, COMPRESSED  
 14.3 Transport Hazard Class(es)  
   Class: 2.2  
   Label(s): 2.2, 5.1  
   EmS No.: F-C, S-W  
 14.3 Packing Group: -  
 14.5 Environmental hazards: not applicable  
 14.6 Special precautions for user: -

**IATA**

 14.1 UN Number: UN 1072  
 14.2 Proper Shipping Name: Oxygen, compressed  
 14.3 Transport Hazard Class(es)  
   Class: 2.2  
   Label(s): 2.2, 5.1  
 14.4 Packing Group: -  
 14.5 Environmental hazards: not applicable  
 14.6 Special precautions for user: -  
   Other information  
     Passenger and cargo aircraft: Allowed.  
     Cargo aircraft only: Allowed.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: not applicable

**Additional identification:** Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the container valve is closed and not leaking. Container valve guards or caps should be in place. Ensure adequate air ventilation.

**SECTION 15: Regulatory information**

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

EU Regulations

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Directive 96/82/EC (Seveso II): on the control of major accident hazards involving dangerous substances:

Chemical name	CAS-No.	Concentration
oxygen	7782-44-7	100 %

Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work:

Chemical name	CAS-No.	Concentration
oxygen	7782-44-7	100 %

**National Regulations**

Management of Health and Safety at Work Regulations (1999 No. 3242). The Regulatory Reform (Fire Safety) Order 2005 (2005 No. 1541). Control of Substances Hazardous to Health Regulations (COSHH, 2002 No. 2677). Provision and Use of Work Equipment Regulations (PUWER, 1998 No. 2306). Personal Protective Equipment Regulations (1992 No. 2966). Control of Major Accident Hazards Regulations (COMAH, 2015 No. 483). Pressure Systems Safety Regulations (PSSR, 2000 No. 128). Only products that comply with the food regulations (EC) No. 1333/2008 and (EU) No. 231/2012 and are labelled as such may be used as food additives.  
This Safety Data Sheet has been produced to comply with Regulation (EU) 453/2010.

15.2 Chemical safety  
assessment:

No Chemical Safety Assessment has been carried out.

**SECTION 16: Other Information**

Revision Information:

Not relevant.

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12/13**Key literature references and sources for data:**

Various sources of data have been used in the compilation of this SDS, they include but are not exclusive to:

Agency for Toxic Substances and Diseases Registry (ATSDR) (<http://www.atsdr.cdc.gov/>).

European Chemical Agency: Guidance on the Compilation of Safety Data Sheets.

European Chemical Agency: Information on Registered Substances <http://apps.echa.europa.eu/registered/registered-sub.aspx#search>

European Industrial Gases Association (EIGA) Doc. 169 Classification and Labelling guide.

International Programme on Chemical Safety (<http://www.inchem.org/>)

ISO 10156:2010 Gases and gas mixtures - Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets.

Matheson Gas Data Book, 7th Edition.

National Institute for Standards and Technology (NIST) Standard Reference Database Number 69.

The ESIS (European chemical Substances Information System) platform of the former European Chemicals Bureau (ECB) ESIS (<http://ecb.jrc.ec.europa.eu/esis/>).

The European Chemical Industry Council (CEFIC) ERICards.

United States of America's National Library of Medicine's toxicology data network TOXNET (<http://toxnet.nlm.nih.gov/index.html>)

Threshold Limit Values (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH).

Substance specific information from suppliers.

Details given in this document are believed to be correct at the time of publication.

EH40 (as amended) Workplace exposure limits.

**Wording of the R-phrases and H-statements in sections 2 and 3**

R8 Contact with combustible material may cause fire.  
H270 May cause or intensify fire; oxidiser.  
H280 Contains gas under pressure; may explode if heated.

**Training information:**

Users of breathing apparatus must be trained. Ensure operators understand the hazard of oxygen enrichment. Ensure operators understand the hazards.

**Classification according to Regulation (EC) No 1272/2008 as amended.**

Ox. Gas 1, H270  
Press. Gas Compr. Gas, H280

**Other information:**

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Ensure adequate air ventilation. Ensure all national/local regulations are observed. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Note: When the Product Name appears in the SDS header the decimal sign and its position comply with rules for the structure and drafting of international standards, and is a comma on the line. As an example 2,000 is two (to three decimal places) and not two thousand, whilst 1.000 is one thousand and not one (to three decimal places).

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Disclaimer:

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

Argon

By

BOC

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1 Product identifier**

**Product name:** Argon, compressed

**Trade name:** Argon Pureshield, Argon Pure, Argon Industrial, Argon Grade N6.0, Argon Research Grade N5.5, Argon Zero Grade N5.0, Argon Food Grade

**Additional identification**

**Chemical name:** Argon

**Chemical formula:** Ar

**INDEX No.** -

**CAS-No.** 7440-37-1

**EC No.** 231-147-0

**REACH Registration No.** Listed in Annex IV/V of Regulation (EC) No 1907/2006 (REACH), exempted from registration.

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**Identified uses:** Industrial and professional. Perform risk assessment prior to use. Balance gas for mixtures. Blanketing gas. Calibration gas. Carrier gas. Combustion, melting and cutting processes. Fire suppressant gas. Food packaging gas. Inerting gas. Inflation systems. Laboratory use. Laser gas. Pressure head gas, operational assist gas in pressure systems. Process gas. Purge gas. Test gas. Consumer use.

**Uses advised against** Shielding gas in gas welding. Industrial or technical grade unsuitable for medical and/or food applications or inhalation.

**1.3 Details of the supplier of the safety data sheet**

**Supplier**  
BOC  
Priestley Road, Worsley  
M28 2UT Manchester

**Telephone:** 0800 111 333

**E-mail:** ReachSDS@boc.com

**1.4 Emergency telephone number: 0800 111 333**

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

Classification according to Directive 67/548/EEC or 1999/45/EC as amended.

Not classified



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Classification according to Regulation (EC) No 1272/2008 as amended.

**Physical Hazards**

Gases under pressure

Compressed gas H280: Contains gas under pressure; may explode if heated.

**2.2 Label Elements**



Signal Words: Warning

Hazard Statement(s): H280: Contains gas under pressure, may explode if heated.

**Precautionary Statement**

Prevention: None.

Response: None.

Storage: P403: Store in a well-ventilated place.

Disposal: None.

**Supplemental label information**

EIGA-As: Asphyxiant in high concentrations.

**2.3 Other hazards:** None.

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SDS No.: 000010021700  
3/12**SECTION 3: Composition/information on ingredients****3.1 Substances**

Chemical name	Argon
INDEX No.:	-
CAS-No.:	7440-37-1
EC No.:	231-147-0
REACH Registration No.:	Listed in Annex IV/V of Regulation (EC) No 1907/2006 (REACH), exempted from registration.
Purity:	100 % The purity of the substance in this section is used for classification only, and does not represent the actual purity of the substance as supplied, for which other documentation should be consulted.
Trade name:	Argon Pureshield, Argon Pure, Argon Industrial, Argon Grade N6.0, Argon Research Grade N5.5, Argon Zero Grade N5.0, Argon Food Grade

**SECTION 4: First Aid Measures**

**General:** In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

**4.1 Description of first aid measures**

**Inhalation:** In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

**Eye contact:** Adverse effects not expected from this product.

**Skin Contact:** Adverse effects not expected from this product.

**Ingestion:** Ingestion is not considered a potential route of exposure.

**4.2 Most important symptoms and effects, both acute and delayed:** Respiratory arrest.

**4.3 Indication of any immediate medical attention and special treatment needed**

**Hazards:** None.

**Treatment:** None.

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**SECTION 5: Firefighting Measures**

**General Fire Hazards:** Heat may cause the containers to explode.

**5.1 Extinguishing media**

**Suitable extinguishing media:** Material will not burn. In case of fire in the surroundings: use appropriate extinguishing agent.

**Unsuitable extinguishing media:** None.

**5.2 Special hazards arising from the substance or mixture:** None.

**Hazardous Combustion Products:** None.

**5.3 Advice for firefighters**

**Special fire fighting procedures:** In case of fire: Stop leak if safe to do so. Continue water spray from protected position until container stays cool. Use extinguishants to contain the fire. Isolate the source of the fire or let it burn out.

**Special protective equipment for firefighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Guideline: EN 469 Protective clothing for firefighters. Performance requirements for protective clothing for firefighting. EN 15090 Footwear for firefighters. EN 659 Protective gloves for firefighters. EN 443 Helmets for fire fighting in buildings and other structures. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

**SECTION 6: Accidental Release Measures**

**6.1 Personal precautions, protective equipment and emergency procedures:** Evacuate area. Provide adequate ventilation. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Guideline EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

**6.2 Environmental Precautions:** Prevent further leakage or spillage if safe to do so.

**6.3 Methods and material for containment and cleaning up:** Provide adequate ventilation.

**6.4 Reference to other sections:** Refer to sections 8 and 13.

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SDS No.: 000010021700  
5/12**SECTION 7: Handling and Storage:**

- 7.1 Precautions for safe handling:** Only experienced and properly instructed persons should handle gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Refer to supplier's handling instructions. The substance must be handled in accordance with good industrial hygiene and safety procedures. Protect containers from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the container contents. When moving containers, even for short distances, use appropriate equipment eg. trolley, hand truck, fork truck etc. Secure cylinders in an upright position at all times, close all valves when not in use. Provide adequate ventilation. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Avoid suckback of water, acid and alkalis. Keep container below 50°C in a well ventilated place. Observe all regulations and local requirements regarding storage of containers. When using do not eat, drink or smoke. Store in accordance with local/regional/national/international regulations. Never use direct flame or electrical heating devices to raise the pressure of a container. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Damaged valves should be reported immediately to the supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminants particularly oil and water. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to transfer gases from one container to another. Container valve guards or caps should be in place.
- 7.2 Conditions for safe storage, including any incompatibilities:** Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible material.
- 7.3 Specific end use(s):** None.

**SECTION 8: Exposure Controls/Personal Protection****8.1 Control Parameters****Occupational Exposure Limits**

None of the components have assigned exposure limits.

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**8.2 Exposure controls**

**Appropriate engineering controls:** Consider a work permit system e.g. for maintenance activities. Ensure adequate air ventilation. Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Oxygen detectors should be used when asphyxiating gases may be released. Systems under pressure should be regularly checked for leakages. Preferably use permanent leak tight connections (eg. welded pipes). Do not eat, drink or smoke when using the product.

**Individual protection measures, such as personal protective equipment**

**General information:** A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Keep self contained breathing apparatus readily available for emergency use. Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

**Eye/face protection:** Wear eye protection to EN 166 when using gases.  
 Guideline: EN 166 Personal Eye Protection.

**Skin protection**

**Hand Protection:** Wear working gloves while handling containers  
 Guideline: EN 388 Protective gloves against mechanical risks.

**Body protection:** No special precautions.

**Other:** Wear safety shoes while handling containers  
 Guideline: ISO 20345 Personal protective equipment - Safety footwear.

**Respiratory Protection:** Not required

**Thermal hazards:** No precautionary measures are necessary.

**Hygiene measures:** Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Do not eat, drink or smoke when using the product.

**Environmental exposure controls:** For waste disposal, see section 13.

**SECTION 9: Physical And Chemical Properties**

**9.1 Information on basic physical and chemical properties**

**Appearance**

<b>Physical state:</b>	Gas
<b>Form:</b>	Compressed gas
<b>Colour:</b>	Colourless
<b>Odour:</b>	Odourless
<b>Odour Threshold:</b>	Odour threshold is subjective and is inadequate to warn of over exposure.

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pH:	not applicable.
Melting Point:	-189 °C
Boiling Point:	-186 °C
Sublimation Point:	not applicable.
Critical Temp. (°C):	-122.0 °C
Flash Point:	Not applicable to gases and gas mixtures.
Evaporation Rate:	Not applicable to gases and gas mixtures.
Flammability (solid, gas):	This product is not flammable.
Flammability limit - upper (%)-:	not applicable.
Flammability limit - lower(%)-:	not applicable.
Vapour pressure:	No reliable data available.
Vapour density (air=1):	1.38
Relative density:	1.4
Solubility(ies)	
Solubility in Water:	61 mg/l
Partition coefficient (n-octanol/water):	Not known.
Autoignition Temperature:	not applicable.
Decomposition Temperature:	Not known.
Viscosity	
Kinematic viscosity:	No data available.
Dynamic viscosity:	No data available.
Explosive properties:	Not applicable.
Oxidising Properties:	not applicable

9.2 Other information:	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.
Molecular weight:	40 g/mol ( Ar)

**SECTION 10: Stability and Reactivity**

10.1 Reactivity:	No reactivity hazard other than the effects described in sub-section below.
10.2 Chemical Stability:	Stable under normal conditions.
10.3 Possibility of Hazardous Reactions:	None.
10.4 Conditions to Avoid:	None.
10.5 Incompatible Materials:	No reaction with any common materials in dry or wet conditions.
10.6 Hazardous Decomposition Products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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General information: None

**11.1 Information on toxicological effects**

Acute toxicity - Oral Product	Based on available data, the classification criteria are not met.
Acute toxicity - Dermal Product	Based on available data, the classification criteria are not met.
Acute toxicity - Inhalation Product	Not classified for acute toxicity based on available data.
Skin Corrosion/Irritation Product	Based on available data, the classification criteria are not met.
Serious Eye Damage/Eye Irritation Product	Based on available data, the classification criteria are not met.
Respiratory or Skin Sensitisation Product	Based on available data, the classification criteria are not met.
Germ Cell Mutagenicity Product	Based on available data, the classification criteria are not met.
Carcinogenicity Product	Based on available data, the classification criteria are not met.
Reproductive toxicity Product	Based on available data, the classification criteria are not met.
Specific Target Organ Toxicity - Single Exposure Product	Based on available data, the classification criteria are not met.
Specific Target Organ Toxicity - Repeated Exposure Product	Based on available data, the classification criteria are not met.
Aspiration Hazard Product	Not applicable to gases and gas mixtures..

**SECTION 12: Ecological Information****12.1 Toxicity**

Acute toxicity Product	No ecological damage caused by this product.
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- 12.2 Persistence and Degradability  
 Product The substance is naturally occurring
- 12.3 Bioaccumulative Potential  
 Product The product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.
- 12.4 Mobility in Soil  
 Product The substance is a gas, not applicable.
- 12.5 Results of PBT and vPvB  
 assessment  
 Product Not classified as PBT or vPvB.
- 12.6 Other Adverse Effects: No ecological damage caused by this product

**SECTION 13: Disposal Considerations**
**13.1 Waste treatment methods**

- General information:** Do not discharge into any place where its accumulation could be dangerous. Vent to atmosphere in a well ventilated place.
- Disposal methods:** Refer to the EIGA code of practice (Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.org>) for more guidance on suitable disposal methods. Dispose of container via supplier only. Discharge, treatment, or disposal may be subject to national, state, or local laws.

European Waste Codes

- Container:** 16 05 05: Gases in pressure containers other than those mentioned in 16 05 04.

**SECTION 14: Transport Information**
**ADR**

- 14.1 UN Number: UN 1006
- 14.2 UN Proper Shipping Name: ARGON, COMPRESSED
- 14.3 Transport Hazard Class(es)  
 Class: 2  
 Label(s): 2.2  
 Hazard No. (ADR): 20  
 Tunnel restriction code: (E)  
 Emergency Action Code: 2T
- 14.4 Packing Group: -
- 14.5 Environmental hazards: not applicable
- 14.6 Special precautions for user: -



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**RID**

14.1 UN Number:	UN 1006
14.2 UN Proper Shipping Name:	ARGON, COMPRESSED
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.2
14.4 Packing Group:	-
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	-

**IMDG**

14.1 UN Number:	UN 1006
14.2 UN Proper Shipping Name:	ARGON, COMPRESSED
14.3 Transport Hazard Class(es)	
Class:	2.2
Label(s):	2.2
EmS No.:	F-C, S-V
14.3 Packing Group:	-
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	-

**IATA**

14.1 UN Number:	UN 1006
14.2 Proper Shipping Name:	Argon, compressed
14.3 Transport Hazard Class(es):	
Class:	2.2
Label(s):	2.2
14.4 Packing Group:	-
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	-
Other information	
Passenger and cargo aircraft:	Allowed.
Cargo aircraft only:	Allowed.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: not applicable

Additional identification:	Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the container valve is closed and not leaking. Container valve guards or caps should be in place. Ensure adequate air ventilation.
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<b>SECTION 15: Regulatory information</b>
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15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

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**National Regulations**

Management of Health and Safety at Work Regulations (1999 No. 3242). The Regulatory Reform (Fire Safety) Order 2005 (2005 No. 1541). Control of Substances Hazardous to Health Regulations (COSHH, 2002 No. 2677). Provision and Use of Work Equipment Regulations (PUWER, 1998 No. 2306). Personal Protective Equipment Regulations (1992 No. 2966). Control of Major Accident Hazards Regulations (COMAH, 2015 No. 483). Pressure Systems Safety Regulations (PSSR, 2000 No. 128). Only products that comply with the food regulations (EC) No. 1333/2008 and (EU) No. 231/2012 and are labelled as such may be used as food additives. This Safety Data Sheet has been produced to comply with Regulation (EU) 453/2010.

**15.2 Chemical safety assessment:**

No Chemical Safety Assessment has been carried out.

**SECTION 16: Other Information**
**Revision Information:**

Not relevant.

**Key literature references and sources for data:**

Various sources of data have been used in the compilation of this SDS, they include but are not exclusive to:

- Agency for Toxic Substances and Diseases Registry (ATSDR) (<http://www.atsdr.cdc.gov/>).
- European Chemical Agency: Guidance on the Compilation of Safety Data Sheets.
- European Chemical Agency: Information on Registered Substances <http://apps.echa.europa.eu/registered/registered-sub.aspx#search>
- European Industrial Gases Association (EIGA) Doc. 169 Classification and Labelling guide.
- International Programme on Chemical Safety (<http://www.inchem.org/>)
- ISO 10156:2010 Gases and gas mixtures - Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets.
- Matheson Gas Data Book, 7th Edition.
- National Institute for Standards and Technology (NIST) Standard Reference Database Number 69.
- The ESIS (European chemical Substances Information System) platform of the former European Chemicals Bureau (ECB) ESIS (<http://ecb.jrc.ec.europa.eu/esis/>).
- The European Chemical Industry Council (CEFIC) ERICards.
- United States of America's National Library of Medicine's toxicology data network TOXNET (<http://toxnet.nlm.nih.gov/index.html>)
- Threshold Limit Values (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH).
- Substance specific information from suppliers.

Details given in this document are believed to be correct at the time of publication. EH40 (as amended) Workplace exposure limits.

**Wording of the R-phrases and H-statements in sections 2 and 3**

H280 Contains gas under pressure; may explode if heated.

**Training information:**

Users of breathing apparatus must be trained. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Ensure operators understand the hazards.

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Classification according to Regulation (EC) No 1272/2008 as amended.

Press. Gas Compr. Gas, H280

**Other information:**

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Ensure adequate air ventilation. Ensure all national/local regulations are observed. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Note: When the Product Name appears in the SDS header the decimal sign and its position comply with rules for the structure and drafting of international standards, and is a comma on the line. As an example 2,000 is two (to three decimal places) and not two thousand, whilst 1.000 is one thousand and not one (to three decimal places).

Last revised date:

10.06.2015

Disclaimer:

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

Acetylene

By

BOC

**SAFETY DATA SHEET**  
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SDS No.: 000010030152  
1/15**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Product name:** Acetylene, dissolved**Trade name:** Acetylene**Additional identification****Chemical name:** acetylene (ethyne)**Chemical formula:** C<sub>2</sub>H<sub>2</sub>  
**INDEX No.** 601-015-00-0  
**CAS-No.** 74-86-2  
**EC No.** 200-816-9  
**REACH Registration No.** 01-2119457406-36-0041**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**Identified uses:** Industrial and professional. Perform risk assessment prior to use.  
Fuel gas for welding, cutting, heating, brazing and soldering applications. Use as a fuel. Use for electronic component manufacture. Using gas alone or in mixtures for the calibration of analysis equipment. Using gas as feedstock in chemical processes. Formulation of mixtures with gas in pressure receptacles. Metal coating by spray gun. Lubrication of moulds for the manufacture of glass bottles.  
Consumer use.

**Uses advised against** Fuel gas for welding, cutting, heating, brazing and soldering applications. Contact supplier for more information on uses. Uses other than those listed above are not supported.

**1.3 Details of the supplier of the safety data sheet****Supplier**BOC  
Priestley Road, Worsley  
M28 2UT Manchester**Telephone:** 0800 111 333**E-mail:** ReachSDS@boc.com**1.4 Emergency telephone number:** 0800 111 333

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**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

Classification according to Directive 67/548/EEC or 1999/45/EC as amended.

F+; R12 R5 R6

The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended.

**Physical Hazards**

Flammable gas	Category 1	H220: Extremely flammable gas.
Chemically unstable gases	Category A	H230: May react explosively even in the absence of air.
Gases under pressure	Dissolved gas	H280: Contains gas under pressure; may explode if heated.

**2.2 Label Elements**



**Signal Words:** Danger

**Hazard Statement(s):** H220: Extremely flammable gas.  
H230: May react explosively even in the absence of air.  
H280: Contains gas under pressure; may explode if heated.

**Precautionary Statement**

**Prevention:** P202: Do not handle until all safety precautions have been read and understood.  
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Response:** P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381: Eliminate all ignition sources if safe to do so.

**Storage:** P403: Store in a well-ventilated place.

**Disposal:** P501: Dispose of cylinder via gas supplier only; cylinder contains a porous material which in some cases contains asbestos.

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**2.3 Other hazards:** For safety reasons, acetylene is dissolved in a solvent, either acetone (CAS No, 67-64-1) or N,N-dimethylformamide (DMF) (CAS No. 68-12-2). A small quantity of the solvent (as an impurity) may be carried over with the acetylene as it is used. The concentration of the solvent in the gas is below the limit which could affect the classification of the acetylene.

**SECTION 3: Composition/information on ingredients****3.1 Substances**

**Chemical name** acetylene (ethyne)  
**INDEX No.:** 601-015-00-0  
**CAS-No.:** 74-86-2  
**EC No.:** 200-816-9  
**REACH Registration No.:** 01-2119457406-36-0041  
**Purity:** 100%

The purity of the substance in this section is used for classification only, and does not represent the actual purity of the substance as supplied, for which other documentation should be consulted.

**Trade name:** Acetylene

**SECTION 4: First Aid Measures**

**General:** In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

**4.1 Description of first aid measures**

**Inhalation:** In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

**Eye contact:** Adverse effects not expected from this product.

**Skin Contact:** Adverse effects not expected from this product.

**Ingestion:** Ingestion is not considered a potential route of exposure.

**4.2 Most important symptoms and effects, both acute and delayed:** Respiratory arrest.

**4.3 Indication of any immediate medical attention and special treatment needed**

**Hazards:** None.

**Treatment:** None.

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**SECTION 5: Firefighting Measures**

**General Fire Hazards:** Heat may cause the containers to explode.

**5.1 Extinguishing media**

**Suitable extinguishing media:** Water Spray or Fog. Dry powder. Foam.

**Unsuitable extinguishing media:** Carbon dioxide.

**5.2 Special hazards arising from the substance or mixture:**

Fire or excessive heat may produce hazardous decomposition products. When involved in a fire, acetylene can begin to decompose, breaking down into its constituent elements of hydrogen and carbon. The decomposition reaction is exothermic and produces heat. Acetylene cylinders are designed to contain and inhibit decomposition of acetylene, however, if left unchecked decomposition could lead to cylinder failure. Acetylene may continue to be a hazard after an external fire has been extinguished, due to the decomposition of the acetylene within the cylinder, and requires specific operational procedures.

**Hazardous Combustion Products:** If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition: carbon monoxide

**5.3 Advice for firefighters**

**Special fire fighting procedures:**

In case of fire: Stop leak if safe to do so. Do not extinguish flames at leak because possibility of uncontrolled explosive re-ignition exists. Continue water spray from protected position until container stays cool. Use extinguishants to contain the fire. Isolate the source of the fire or let it burn out. Acetylene cylinders that have been heated, damaged by fire or subjected to a flash back must not be moved until it has been demonstrated that there is no decomposition of the acetylene within the cylinder. Acetylene cylinders should be cooled with a water spray and a hazard zone designated around them. Water cooling should be continued for at least one hour. After a minimum of one hour of water cooling the cylinder's temperature should be checked to see if it has been effectively cooled. Effectively cooled means bringing the cylinder shell temperature down to ambient temperature. The "Wetting test" and/or thermal imaging equipment should be used to ascertain if the cylinder shell has been effectively cooled. When effective cooling of the cylinder shell has been achieved, water cooling should be stopped. The cylinder should still not be moved for a further one hour, during this time temperature checks of the cylinder shell should be made every 15 minutes. If any increase in temperature is observed a further one hour continuous water cooling should be applied to the cylinder before its temperature is re-checked. When the cylinder shell temperature remains at ambient temperature for one hour without being water cooled, and is not leaking, the cylinder may be moved.



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for firefighters:**

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Guideline: EN 469 Protective clothing for firefighters. Performance requirements for protective clothing for firefighting. EN 15090 Footwear for firefighters. EN 659 Protective gloves for firefighters. EN 443 Helmets for fire fighting in buildings and other structures. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

**SECTION 6: Accidental Release Measures****6.1 Personal precautions,  
protective equipment and  
emergency procedures:**

Evacuate area. Provide adequate ventilation. Consider the risk of potentially explosive atmospheres. Eliminate all ignition sources if safe to do so. Monitor the concentration of the released product. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

**6.2 Environmental Precautions:**

Prevent further leakage or spillage if safe to do so.

**6.3 Methods and material for  
containment and cleaning up:**

Provide adequate ventilation. Eliminate sources of ignition.

**6.4 Reference to other sections:**

Refer to sections 8 and 13.

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6/15**SECTION 7: Handling and Storage:****7.1 Precautions for safe handling:**

Only experienced and properly instructed persons should handle gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Purge system with dry inert gas (e.g. helium or nitrogen) before gas is introduced and when system is placed out of service. Purge air from system before introducing gas. Containers, which contain or have contained flammable or explosive substances, must not be inerted with liquid carbon dioxide. Assess the risk of a potentially explosive atmosphere and the need for suitable equipment i.e. explosion-proof. Take precautionary measures against static discharges. Keep away from ignition sources (including static discharges). Provide electrical earthing of equipment and electrical equipment usable in explosive atmospheres. Use only non-sparking tools. Refer to supplier's handling instructions. The substance must be handled in accordance with good industrial hygiene and safety procedures. Ensure the complete system has been (or is regularly) checked for leaks before use. Protect containers from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the container contents. When moving containers, even for short distances, use appropriate equipment eg. trolley, hand truck, fork truck etc. Secure cylinders in an upright position at all times, close all valves when not in use. Provide adequate ventilation. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Avoid suckback of water, acid and alkalis. Keep container below 50°C in a well ventilated place. Observe all regulations and local requirements regarding storage of containers. When using do not eat, drink or smoke. Store in accordance with local/regional/national/international regulations. Never use direct flame or electrical heating devices to raise the pressure of a container. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Damaged valves should be reported immediately to the supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminants particularly oil and water. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to transfer gases from one container to another. Container valve guards or caps should be in place. Avoid suckback of water, acid and alkalis. Solvent may accumulate in piping systems. For maintenance use appropriately chemically resistant gloves and goggles. Only equipment fitted with suitable means of preventing a 'flash back' should be fitted to the cylinders. Mechanical shock alone to a cold acetylene cylinder cannot initiate decomposition. For further information on safe use refer to EIGA "Code of Practice: Acetylene" IGC Doc 123.

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**7.2 Conditions for safe storage, including any incompatibilities:**

All electrical equipment in the storage areas should be compatible with the risk of a potentially explosive atmosphere. Segregate from oxidant gases and other oxidants being stored. Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible material. Acetylene cylinders should be stored vertically. If a cylinder has been transported horizontally, it should be stood upright for a minimum of 1 hour prior to use. This will allow the acetone to evenly re-distribute within the cylinder and prevent acetone being carried into the flame during use causing a 'flame thrower' effect.

**7.3 Specific end use(s):** None.

**SECTION 8: Exposure Controls/Personal Protection**

**8.1 Control Parameters**

**Occupational Exposure Limits**

None of the components have assigned exposure limits.

**DNEL-Values**

Critical component	type	Value	Remarks
acetylene (ethyne)	Worker - inhalative, long-term - systemic	2500 ppm	-
	Worker - inhalative, short-term - systemic	2500 ppm	-

**PNEC-Values**

Critical component	type	Value	Remarks
acetylene (ethyne)			PNEC not available.

**8.2 Exposure controls**

**Appropriate engineering controls:**

Consider a work permit system e.g. for maintenance activities. Ensure adequate air ventilation. Provide adequate general and local exhaust ventilation. Keep concentrations well below lower explosion limits. Gas detectors should be used when quantities of flammable gases or vapours may be released. Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Systems under pressure should be regularly checked for leakages. Product to be handled in a closed system. Use only permanent leak tight installations (e.g. welded pipes). Take precautionary measures against static discharges.

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**Individual protection measures, such as personal protective equipment**

<b>General information:</b>	A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Keep self contained breathing apparatus readily available for emergency use. Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. Do not eat, drink or smoke when using the product.
<b>Eye/face protection:</b>	Safety eyewear, goggles or face-shield to EN166 should be used to avoid exposure to liquid splashes. Wear eye protection to EN 166 when using gases. Guideline: EN 166 Personal Eye Protection.
<b>Skin protection</b>	
<b>Hand Protection:</b>	Wear working gloves while handling containers Guideline: EN 388 Protective gloves against mechanical risks.
<b>Body protection:</b>	Wear fire/flame resistant/retardant clothing. Guideline: ISO/TR 2801:2007 Clothing for protection against heat and flame -- General recommendations for selection, care and use of protective clothing.
<b>Other:</b>	Wear safety shoes while handling containers Guideline: ISO 20345 Personal protective equipment - Safety footwear.
<b>Respiratory Protection:</b>	Not required.
<b>Thermal hazards:</b>	No precautionary measures are necessary.
<b>Hygiene measures:</b>	Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Do not eat, drink or smoke when using the product.
<b>Environmental exposure controls:</b>	For waste disposal, see section 13.

<b>SECTION 9: Physical And Chemical Properties</b>
--

**9.1 Information on basic physical and chemical properties**

**Appearance**

<b>Physical state:</b>	Gas
<b>Form:</b>	Dissolved gas
<b>Colour:</b>	Colorless
<b>Odour:</b>	Garlic-like odor
<b>Odour Threshold:</b>	Odour threshold is subjective and is inadequate to warn of over exposure.
<b>pH:</b>	not applicable.
<b>Melting Point:</b>	-80.7 °C
<b>Boiling Point:</b>	-84.7 °C (101.3 hPa)

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<b>Sublimation Point:</b>	not applicable.
<b>Critical Temp. (°C):</b>	35.0 °C
<b>Flash Point:</b>	Not applicable to gases and gas mixtures
<b>Evaporation Rate:</b>	Not applicable to gases and gas mixtures
<b>Flammability (solid, gas):</b>	Flammable gas
<b>Flammability limit - upper (%):</b>	99.99 %(V)
<b>Flammability limit - lower (%):</b>	2.3 %(V)
<b>Vapour pressure:</b>	698.5968 kPa (25 °C)
<b>Vapour density (air=1):</b>	0.91 AIR=1
<b>Relative density:</b>	0.6208 (-82 °C )4 °C
<b>Solubility(ies)</b>	
<b>Solubility in Water:</b>	1,200 mg/l (25 °C)
<b>Partition coefficient (n-octanol/water):</b>	0.37
<b>Autoignition Temperature:</b>	305 °C
<b>Decomposition Temperature:</b>	635 °C
<b>Viscosity</b>	
<b>Kinematic viscosity:</b>	No data available.
<b>Dynamic viscosity:</b>	0.011 mPa.s
<b>Explosive properties:</b>	Not applicable.
<b>Oxidising Properties:</b>	not applicable.

<b>9.2 Other information:</b>	None.
<b>Molecular weight:</b>	26.02 g/mol (C <sub>2</sub> H <sub>2</sub> )

**SECTION 10: Stability and Reactivity**

<b>10.1 Reactivity:</b>	No reactivity hazard other than the effects described in sub-section below.
<b>10.2 Chemical Stability:</b>	Stable under normal conditions.
<b>10.3 Possibility of Hazardous Reactions:</b>	Can form a potentially explosive atmosphere in air. May react violently with oxidants. Forms explosive acetylides with copper, silver and mercury. Do not use alloys containing more than 65% copper.
<b>10.4 Conditions to Avoid:</b>	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. High temperature High pressure May decompose violently at high temperature and/or pressure or in the presence of a catalyst.
<b>10.5 Incompatible Materials:</b>	Air and oxidisers. For material compatibility see latest version of ISO-11114. Avoid contact with pure copper, mercury, silver and brass with greater than 65% copper. Do not use alloys containing more than 43% silver. For further information on safe use refer to EIGA "Code of Practice: Acetylene" IGC Doc 123.

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**10.6 Hazardous Decomposition Products:** Under normal conditions of storage and use, hazardous decomposition products should not be produced. If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition: The following decomposition products may be produced: carbon monoxide

<b>SECTION 11: Toxicological Information</b>
--

**General information:** None.

**11.1 Information on toxicological effects**

**Acute toxicity - Oral Product** Based on available data, the classification criteria are not met.

**Acute toxicity - Dermal Product** Based on available data, the classification criteria are not met.

**Acute toxicity - Inhalation Product** Based on available data, the classification criteria are not met.

acetylene (ethyne) LOEC: 100000 ppm

**Skin Corrosion/Irritation Product** Based on available data, the classification criteria are not met.

**Serious Eye Damage/Eye Irritation Product** Based on available data, the classification criteria are not met.

**Respiratory or Skin Sensitisation Product** Based on available data, the classification criteria are not met.

**Germ Cell Mutagenicity Product** Based on available data, the classification criteria are not met.

**Carcinogenicity Product** Based on available data, the classification criteria are not met.

**Reproductive toxicity Product** Based on available data, the classification criteria are not met.

**Specific Target Organ Toxicity - Single Exposure Product** Based on available data, the classification criteria are not met.

**Specific Target Organ Toxicity - Repeated Exposure Product** Based on available data, the classification criteria are not met.

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**Product**

Not applicable to gases and gas mixtures .

**SECTION 12: Ecological Information****12.1 Toxicity****Acute toxicity**  
**Product**

No ecological damage caused by this product.

**Acute toxicity - Fish**  
acetylene (ethyne)

LC 50 (Various, 96 h): 545 mg/l Remarks: QSAR

**Acute toxicity - Aquatic Invertebrates**  
acetylene (ethyne)

EC 50 (Water flea (Daphnia magna), 48 h): 242 mg/l

**Toxicity to microorganisms**  
acetylene (ethyne)

EC 50 (Alga, 72 h): 57 mg/l

**12.2 Persistence and Degradability**  
**Product**

Not applicable to gases and gas mixtures..

**12.3 Bioaccumulative Potential**  
**Product**

The product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.

**12.4 Mobility in Soil**  
**Product**

Because of its high volatility, the product is unlikely to cause ground or water pollution.

**12.5 Results of PBT and vPvB**  
**assessment**  
**Product**

Not classified as PBT or vPvB.

**12.6 Other Adverse Effects:**

No ecological damage caused by this product.

**SECTION 13: Disposal Considerations****13.1 Waste treatment methods****General information:**

Do not discharge into any place where its accumulation could be dangerous. Consult supplier for specific recommendations. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Dispose of cylinder via gas supplier only; cylinder contains a porous material which in some cases contains asbestos.

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**Disposal methods:** Refer to the EIGA code of practice (Doc. 30 "Disposal of Gases", downloadable at <http://www.eiga.org>) for more guidance on suitable disposal methods. Dispose of container via supplier only. Discharge, treatment, or disposal may be subject to national, state, or local laws.

**European Waste Codes**

**Container:** 16 05 04\*: gases in pressure containers (including halons) containing dangerous substances

**SECTION 14: Transport Information****ADR**

14.1 UN Number: UN 1001  
14.2 UN Proper Shipping Name: ACETYLENE, DISSOLVED  
14.3 Transport Hazard Class(es)  
Class: 2  
Label(s): 2.1  
Hazard No. (ADR): 239  
Tunnel restriction code: (B/D)  
Emergency Action Code: 2SE  
14.4 Packing Group: -  
14.5 Environmental hazards: not applicable  
14.6 Special precautions for user: -

**RID**

14.1 UN Number: UN 1001  
14.2 UN Proper Shipping Name: ACETYLENE, DISSOLVED  
14.3 Transport Hazard Class(es)  
Class: 2  
Label(s): 2.1  
14.4 Packing Group: -  
14.5 Environmental hazards: not applicable  
14.6 Special precautions for user: -

**IMDG**

14.1 UN Number: UN 1001  
14.2 UN Proper Shipping Name: ACETYLENE, DISSOLVED  
14.3 Transport Hazard Class(es)  
Class: 2.1  
Label(s): 2.1  
EmS No.: F-D, S-U  
14.3 Packing Group: -  
14.5 Environmental hazards: not applicable  
14.6 Special precautions for user: -



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**IATA**

14.1 UN Number:	UN 1001
14.2 Proper Shipping Name:	Acetylene, dissolved
14.3 Transport Hazard Class(es):	
Class:	2.1
Label(s):	2.1
14.4 Packing Group:	-
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	-
Other information	
Passenger and cargo aircraft:	Forbidden.
Cargo aircraft only:	Allowed.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: not applicable

**Additional identification:** Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the container valve is closed and not leaking. Container valve guards or caps should be in place. Ensure adequate air ventilation.

<b>SECTION 15: Regulatory information</b>
---

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:**
**EU Regulations**
**Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use:**

Chemical name	CAS-No.	Concentration
acetylene (ethyne)	74-86-2	100%

**Directive 96/82/EC (Seveso II): on the control of major accident hazards involving dangerous substances:**

Chemical name	CAS-No.	Concentration
acetylene (ethyne)	74-86-2	100%

**Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work:**

Chemical name	CAS-No.	Concentration
acetylene (ethyne)	74-86-2	100%

**National Regulations**

Dangerous Substances and Explosive Atmospheres Regulations (DSEAR 2002 No. 2776). Management of Health and Safety at Work Regulations (1999 No. 3242). The Regulatory Reform (Fire Safety) Order 2005 (2005 No. 1541). Control of Substances

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Hazardous to Health Regulations (COSHH, 2002 No. 2677). Provision and Use of Work Equipment Regulations (PUWER, 1998 No. 2306). Personal Protective Equipment Regulations (1992 No. 2966). Control of Major Accident Hazards Regulations (COMAH, 2015 No. 483). Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations (EPS, 1996 No. 192). Pressure Systems Safety Regulations (PSSR, 2000 No. 128). Only products that comply with the food regulations (EC) No. 1333/2008 and (EU) No. 231/2012 and are labelled as such may be used as food additives.

This Safety Data Sheet has been produced to comply with Regulation (EU) 453/2010. THE ACETYLENE SAFETY (ENGLAND AND WALES AND SCOTLAND) REGULATIONS 2014 No. 1639

15.2 Chemical safety assessment: CSA has been carried out.

**SECTION 16: Other Information**

Revision Information: Not relevant.

**Key literature references and sources for data:**

Various sources of data have been used in the compilation of this SDS, they include but are not exclusive to:

- Agency for Toxic Substances and Diseases Registry (ATSDR) (<http://www.atsdr.cdc.gov/>).
- European Chemical Agency: Guidance on the Compilation of Safety Data Sheets.
- European Chemical Agency: Information on Registered Substances <http://apps.echa.europa.eu/registered/registered-sub.aspx#search>
- European Industrial Gases Association (EIGA) Doc. 169 Classification and Labelling guide.
- International Programme on Chemical Safety (<http://www.inchem.org/>)
- ISO 10156:2010 Gases and gas mixtures - Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets
- Matheson Gas Data Book, 7th Edition.
- National Institute for Standards and Technology (NIST) Standard Reference Database Number 69.
- The ESIS (European chemical Substances Information System) platform of the former European Chemicals Bureau (ECB) ESIS (<http://ecb.jrc.ec.europa.eu/esis/>).
- The European Chemical Industry Council (CEFIC) ERICards.
- United States of America's National Library of Medicine's toxicology data network TOXNET (<http://toxnet.nlm.nih.gov/index.html>)
- Threshold Limit Values (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH).
- Substance specific information from suppliers.

Details given in this document are believed to be correct at the time of publication. EH40 (as amended) Workplace exposure limits.

**Wording of the R-phrases and H-statements in sections 2 and 3**

H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
R5	Heating may cause an explosion.
R6	Explosive with or without contact with air.
R12	Extremely flammable.

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**Training information:** Users of breathing apparatus must be trained. Ensure operators understand the flammability hazard.

**Classification according to Regulation (EC) No 1272/2008 as amended.**Flam. Gas 1, H220  
Chem. Unst. Gas A, H230  
Press. Gas Diss. Gas, H280

**Other information:** Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Ensure adequate air ventilation. Ensure all national/local regulations are observed. Ensure equipment is adequately earthed. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Note: When the Product Name appears in the SDS header the decimal sign and its position comply with rules for the structure and drafting of International standards, and is a comma on the line. As an example 2,000 is two (to three decimal places) and not two thousand, whilst 1.000 is one thousand and not one (to three decimal places).

**Last revised date:** 01.02.2016

**Disclaimer:** This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.



Propane

By

BOC

**SAFETY DATA SHEET**

**Propane**

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Last revised date: 08.09.2015

Version: 1.0

SDS No.: 000010021747  
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**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1 Product identifier**

**Product name:** Propane

**Trade name:** Propane Instrument Grade N2.5, Propane Pure Grade N2.0, Propane Research Grade N3.5, Propane Tech Grade N1.5, Care 40

**Additional identification**

**Chemical name:** propane

**Chemical formula:** C<sub>3</sub>H<sub>8</sub>

**INDEX No.** 601-003-00-5

**CAS-No.** 74-98-6

**EC No.** 200-827-9

**REACH Registration No.** 01-2119486944-21

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**Identified uses:** Industrial and professional. Perform risk assessment prior to use.  
Aerosol propellant. Refrigerant. Transfilling gas or liquid, Use as a fuel. Using gas alone or in mixtures for the calibration of analysis equipment. Formulation of mixtures with gas in pressure receptacles.  
Consumer use.

**Uses advised against** Aerosol propellant. Use as a fuel.  
Uses other than those listed above are not supported.

**1.3 Details of the supplier of the safety data sheet**

**Supplier**

BOC  
Priestley Road, Worsley  
M28 2UT Manchester

**Telephone:** 0800 111 333

**E-mail:** ReachSDS@boc.com

**1.4 Emergency telephone number: 0800 111 333**

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**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

Classification according to Directive 67/548/EEC or 1999/45/EC as amended.

F+; R12

The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended.

**Physical Hazards**

Flammable gas	Category 1	H220: Extremely flammable gas.
Gases under pressure	Liquefied gas	H280: Contains gas under pressure, may explode if heated.

**2.2 Label Elements**



**Signal Words:** Danger

**Hazard Statement(s):** H220: Extremely flammable gas.  
H280: Contains gas under pressure, may explode if heated.

**Precautionary Statement**

**Prevention:** P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Response:** P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381: Eliminate all ignition sources if safe to do so.

**Storage:** P403: Store in a well-ventilated place.

**Disposal:** None.

**2.3 Other hazards:** Contact with evaporating liquid may cause frostbite or freezing of skin.

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3/14**SECTION 3: Composition/information on ingredients****3.1 Substances**

<b>Chemical name</b>	propane
<b>INDEX No.:</b>	601-003-00-5
<b>CAS-No.:</b>	74-98-6
<b>EC No.:</b>	200-827-9
<b>REACH Registration No.:</b>	01-2119486944-21
<b>Purity:</b>	100%

The purity of the substance in this section is used for classification only, and does not represent the actual purity of the substance as supplied, for which other documentation should be consulted.

**Trade name:** Propane Instrument Grade N2.5, Propane Pure Grade N2.0, Propane Research Grade N3.5, Propane Tech Grade N1.5, Care 40

**SECTION 4: First Aid Measures**

**General:** In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

**4.1 Description of first aid measures**

**Inhalation:** In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

**Eye contact:** Rinse the eye with water immediately. Remove contact lenses, if present and easy to do. Continue rinsing. Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes.

**Skin Contact:** Contact with evaporating liquid may cause frostbite or freezing of skin.

**Ingestion:** Ingestion is not considered a potential route of exposure.

**4.2 Most important symptoms and effects, both acute and delayed:** Respiratory arrest. Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling. Loss of co-ordination. In low concentrations may cause narcotic effects. Dizziness. Headache. Unconsciousness. Nausea, vomiting.

**4.3 Indication of any immediate medical attention and special treatment needed**

**Hazards:** Respiratory arrest. Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling.

**Treatment:** Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.



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**SECTION 5: Firefighting Measures**

**General Fire Hazards:** Heat may cause the containers to explode.

**5.1 Extinguishing media**

**Suitable extinguishing media:** Water Spray or Fog. Dry powder. Foam.

**Unsuitable extinguishing media:** Carbon dioxide.

**5.2 Special hazards arising from the substance or mixture:** May explode in a fire.

**Hazardous Combustion Products:** Incomplete combustion may form carbon monoxide

**5.3 Advice for firefighters**

**Special fire fighting procedures:** In case of fire: Stop leak if safe to do so. Do not extinguish flames at leak because possibility of uncontrolled explosive re-ignition exists. Continue water spray from protected position until container stays cool. Use extinguishants to contain the fire. Isolate the source of the fire or let it burn out.

**Special protective equipment for firefighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Guideline: EN 469 Protective clothing for firefighters. Performance requirements for protective clothing for firefighting. EN 15090 Footwear for firefighters. EN 659 Protective gloves for firefighters. EN 443 Helmets for fire fighting in buildings and other structures. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

**SECTION 6: Accidental Release Measures**

**6.1 Personal precautions, protective equipment and emergency procedures:** Evacuate area. Provide adequate ventilation. Consider the risk of potentially explosive atmospheres. Eliminate all ignition sources if safe to do so. Monitor the concentration of the released product. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

**6.2 Environmental Precautions:** Prevent further leakage or spillage if safe to do so.

**6.3 Methods and material for containment and cleaning up:** Provide adequate ventilation. Eliminate sources of ignition.

**6.4 Reference to other sections:** Refer to sections 8 and 13.

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Only experienced and properly instructed persons should handle gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Purge system with dry inert gas (e.g. helium or nitrogen) before gas is introduced and when system is placed out of service. Purge air from system before introducing gas. Containers, which contain or have contained flammable or explosive substances, must not be inerted with liquid carbon dioxide. Assess the risk of a potentially explosive atmosphere and the need for suitable equipment i.e. explosion-proof. Take precautionary measures against static discharges. Keep away from ignition sources (including static discharges). Provide electrical earthing of equipment and electrical equipment usable in explosive atmospheres. Use only non-sparking tools. Refer to supplier's handling instructions. The substance must be handled in accordance with good industrial hygiene and safety procedures. Ensure the complete system has been (or is regularly) checked for leaks before use. Protect containers from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the container contents. When moving containers, even for short distances, use appropriate equipment eg. trolley, hand truck, fork truck etc. Secure cylinders in an upright position at all times, close all valves when not in use. Provide adequate ventilation. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Avoid suckback of water, acid and alkalis. Observe all regulations and local requirements regarding storage of containers. When using do not eat, drink or smoke. Store in accordance with local/regional/national/international regulations. Never use direct flame or electrical heating devices to raise the pressure of a container. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Damaged valves should be reported immediately to the supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminants particularly oil and water. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to transfer gases from one container to another. Container valve guards or caps should be in place.

**7.2 Conditions for safe storage, including any incompatibilities:**

All electrical equipment in the storage areas should be compatible with the risk of a potentially explosive atmosphere. Segregate from oxidant gases and other oxidants being stored. Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible material. Keep container below 50°C in a well ventilated place.

**7.3 Specific end use(s):**

None.

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**SECTION 8: Exposure Controls/Personal Protection**
**8.1 Control Parameters**
**Occupational Exposure Limits**

None of the components have assigned exposure limits.

**8.2 Exposure controls**
**Appropriate engineering controls:**

Consider a work permit system e.g. for maintenance activities. Ensure adequate air ventilation. Provide adequate general and local exhaust ventilation. Keep concentrations well below lower explosion limits. Gas detectors should be used when quantities of flammable gases or vapours may be released. Systems under pressure should be regularly checked for leakages. Product to be handled in a closed system. Use only permanent leak tight installations (e.g. welded pipes). Take precautionary measures against static discharges. Gas detectors should be used when toxic quantities may be released.

**Individual protection measures, such as personal protective equipment**
**General information:**

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Keep self contained breathing apparatus readily available for emergency use. Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. Do not eat, drink or smoke when using the product.

**Eye/face protection:**

Safety eyewear, goggles or face-shield to EN166 should be used to avoid exposure to liquid splashes. Wear eye protection to EN 166 when using gases. Guideline: EN 166 Personal Eye Protection.

**Skin protection**
**Hand Protection:**

Wear working gloves while handling containers  
 Guideline: EN 388 Protective gloves against mechanical risks.

**Body protection:**

Wear fire/flame resistant/retardant clothing.  
 Guideline: EN 943 Protective clothing against liquid and gaseous chemicals, including liquid aerosols and solid particles.

**Other:**

Wear safety shoes while handling containers  
 Guideline: ISO 20345 Personal protective equipment - Safety footwear.

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<b>Respiratory Protection:</b>	Respiratory protection may be required. When allowed by a risk assessment Respiratory Protective Equipment (RPE) may be used The selection of the Respiratory Protective Device (RPD) must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected RPD. Material: Filter AX Guideline: EN 14387 Respiratory protective devices. Gas filter(s) and combined filter(s). Requirements, testing, marking. Guideline: EN 136 Respiratory protective devices. Full face masks. Requirements, testing, marking.
<b>Thermal hazards:</b>	No precautionary measures are necessary.
<b>Hygiene measures:</b>	Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Do not eat, drink or smoke when using the product.
<b>Environmental exposure controls:</b>	For waste disposal, see section 13.

**SECTION 9: Physical And Chemical Properties**
**9.1 Information on basic physical and chemical properties**
**Appearance**

<b>Physical state:</b>	Gas
<b>Form:</b>	Liquefied gas
<b>Colour:</b>	Colourless
<b>Odour:</b>	Odourless
<b>Odour Threshold:</b>	Odour threshold is subjective and is inadequate to warn of over exposure.
<b>pH:</b>	not applicable
<b>Melting Point:</b>	-187.6 °C
<b>Boiling Point:</b>	-42.1 °C (101.325 kPa)
<b>Sublimation Point:</b>	not applicable
<b>Critical Temp. (°C):</b>	96.7 °C
<b>Flash Point:</b>	Not applicable to gases and gas mixtures.
<b>Evaporation Rate:</b>	Not applicable to gases and gas mixtures.
<b>Flammability (solid, gas):</b>	Flammable Gas
<b>Flammability limit - upper (%):</b>	12.5 %(V)
<b>Flammability limit - lower (%):</b>	1.7 %(V)
<b>Vapour pressure:</b>	953.25 kPa (25 °C)
<b>Vapour density (air=1):</b>	1.56 (0 °C) AIR=1
<b>Relative density:</b>	0.5853 (-45 °C) 4 °C
<b>Solubility(ies)</b>	
<b>Solubility in Water:</b>	75 mg/l
<b>Partition coefficient (n-octanol/water):</b>	2.36
<b>Autoignition Temperature:</b>	472 °C

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**Decomposition Temperature:** 650 °C Decomp to ethylene and ethane.

**Viscosity**

**Kinematic viscosity:** No data available.

**Dynamic viscosity:** 0.08 mPa.s (17.9 °C)

**Explosive properties:** Not applicable.

**Oxidising Properties:** not applicable.

**9.2 Other Information:** Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

**Molecular weight:** 44.09 g/mol (C<sub>3</sub>H<sub>8</sub>)

**Minimum ignition energy:** 0.25 mJ

**SECTION 10: Stability and Reactivity**

**10.1 Reactivity:** No reactivity hazard other than the effects described in sub-section below.

**10.2 Chemical Stability:** Stable under normal conditions.

**10.3 Possibility of Hazardous Reactions:** Can form a potentially explosive atmosphere in air. May react violently with oxidants.

**10.4 Conditions to Avoid:** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**10.5 Incompatible Materials:** Air and oxidisers. For material compatibility see latest version of ISO-11114.

**10.6 Hazardous Decomposition Products:** Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**SECTION 11: Toxicological Information**

**General information:** None.

**11.1 Information on toxicological effects**

**Acute toxicity - Oral Product** Based on available data, the classification criteria are not met.

**Acute toxicity - Dermal Product** Based on available data, the classification criteria are not met.

**Acute toxicity - Inhalation Product**

**Skin Corrosion/Irritation Product** Based on available data, the classification criteria are not met.

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9/14**Serious Eye Damage/Eye Irritation****Product** Based on available data, the classification criteria are not met.**Respiratory or Skin Sensitisation****Product** Based on available data, the classification criteria are not met.**Germ Cell Mutagenicity****Product** Based on available data, the classification criteria are not met.**Carcinogenicity****Product** Based on available data, the classification criteria are not met.**Reproductive toxicity****Product** Based on available data, the classification criteria are not met.**Specific Target Organ Toxicity - Single Exposure****Product** Based on available data, the classification criteria are not met.**Specific Target Organ Toxicity - Repeated Exposure****Product** Based on available data, the classification criteria are not met.**Aspiration Hazard****Product** Not applicable to gases and gas mixtures..**SECTION 12: Ecological Information****12.1 Toxicity****Acute toxicity****Product** No ecological damage caused by this product.**Acute toxicity - Fish**

propane LC50 (Fish, 96 h): 49.9 mg/l

**Acute toxicity - Aquatic Invertebrates**

propane EC50 (Water flea (Daphnia magna), 48 h): 27.1 mg/l

**Toxicity to microorganisms**

propane EC50 (Alga, 72 h): 11.9 mg/l

**12.2 Persistence and Degradability****Product** Not applicable to gases and gas mixtures..**12.3 Bioaccumulative Potential****Product** The product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.

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**12.4 Mobility in Soil**

**Product**

Because of its high volatility, the product is unlikely to cause ground or water pollution.

**12.5 Results of PBT and vPvB assessment**

**Product**

Not classified as PBT or vPvB.

**12.6 Other Adverse Effects:**

**Global Warming Potential**

Global warming potential: 3  
Contains greenhouse gas(es). When discharged in large quantities may contribute to the greenhouse effect.  
Global warming potential: 3  
Contains greenhouse gas(es) not covered by 842/2006/EC. Contains greenhouse gas(es). When discharged in large quantities may contribute to the greenhouse effect.

propane

Global warming potential: 3

Global warming potential: 3

**SECTION 13: Disposal Considerations**

**13.1 Waste treatment methods**

**General information:**

Do not discharge into any place where its accumulation could be dangerous. Consult supplier for specific recommendations. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor.

**Disposal methods:**

Refer to the EIGA code of practice (Doc.30 "Disposal of Gases", downloadable at <http://www.elga.org>) for more guidance on suitable disposal methods. Dispose of container via supplier only. Discharge, treatment, or disposal may be subject to national, state, or local laws.

**European Waste Codes**

**Container:**

16 05 04\*: gases in pressure containers (including halons) containing dangerous substances

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**SECTION 14: Transport Information**
**ADR**

14.1 UN Number:	UN 1978
14.2 UN Proper Shipping Name:	PROPANE
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.1
Hazard No. (ADR):	23
Tunnel restriction code:	(B/D)
Emergency Action Code:	2YE
14.4 Packing Group:	-
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	-

**RID**

14.1 UN Number:	UN 1978
14.2 UN Proper Shipping Name	PROPANE
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.1
14.4 Packing Group:	-
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	-

**IMDG**

14.1 UN Number:	UN 1978
14.2 UN Proper Shipping Name:	PROPANE
14.3 Transport Hazard Class(es)	
Class:	2.1
Label(s):	2.1
EmS No.:	F-D, S-U
14.3 Packing Group:	-
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	-

**IATA**

14.1 UN Number:	UN 1978
14.2 Proper Shipping Name:	Propane
14.3 Transport Hazard Class(es):	
Class:	2.1
Label(s):	2.1
14.4 Packing Group:	-
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	-
Other information	
Passenger and cargo aircraft:	Forbidden.
Cargo aircraft only:	Allowed.

**14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: not applicable**



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**Additional identification:**

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the container valve is closed and not leaking. Container valve guards or caps should be in place. Ensure adequate air ventilation.

**SECTION 15: Regulatory information**
**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:**
**EU Regulations**
**Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use:**

Chemical name	CAS-No.	Concentration
propane	74-98-6	

**Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work.:**

Chemical name	CAS-No.	Concentration
propane	74-98-6	100%

**Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breast feeding.:**

Chemical name	CAS-No.	Concentration
propane	74-98-6	100%

**Directive 96/82/EC (Seveso II): on the control of major accident hazards involving dangerous substances:**

Chemical name	CAS-No.	Concentration
propane	74-98-6	100%

**Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work:**

Chemical name	CAS-No.	Concentration
propane	74-98-6	100%

**National Regulations**

Dangerous Substances and Explosive Atmospheres Regulations (DSEAR 2002 No. 2776). Management of Health and Safety at Work Regulations (1999 No. 3242). The Regulatory Reform (Fire Safety) Order 2005 (2005 No. 1541). Control of Substances Hazardous to Health Regulations (COSHH, 2002 No. 2677). Provision and Use of Work

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Equipment Regulations (PUWER, 1998 No. 2306). Personal Protective Equipment Regulations (1992 No. 2966). Control of Major Accident Hazards Regulations (COMAH, 2015 No. 483). Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations (EPS, 1996 No. 192). Pressure Systems Safety Regulations (PSSR, 2000 No. 128). Only products that comply with the food regulations (EC) No. 1333/2008 and (EU) No. 231/2012 and are labelled as such may be used as food additives.

This Safety Data Sheet has been produced to comply with Regulation (EU) 453/2010.

**15.2 Chemical safety assessment:** CSA has been carried out.

#### SECTION 16: Other Information

**Revision Information:** Not relevant.

**Key literature references and sources for data:**

Various sources of data have been used in the compilation of this SDS, they include but are not exclusive to:

Agency for Toxic Substances and Diseases Registry (ATSDR)  
(<http://www.atsdr.cdc.gov/>).

European Chemical Agency: Guidance on the Compilation of Safety Data Sheets.

European Chemical Agency: Information on Registered Substances

<http://apps.echa.europa.eu/registered/registered-sub.aspx#search>

European Industrial Gases Association (EIGA) Doc. 169 Classification and Labelling guide.

International Programme on Chemical Safety (<http://www.inchem.org/>)

ISO 10156:2010 Gases and gas mixtures - Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets.

Matheson Gas Data Book, 7th Edition.

National Institute for Standards and Technology (NIST) Standard Reference Database Number 69.

The ESIS (European chemical Substances Information System) platform of the former European Chemicals Bureau (ECB) ESIS (<http://ecb.jrc.ec.europa.eu/esis/>).

The European Chemical Industry Council (CEFIC) ERICards.

United States of America's National Library of Medicine's toxicology data network TOXNET (<http://toxnet.nlm.nih.gov/index.html>)

Threshold Limit Values (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH).

Substance specific information from suppliers.

Details given in this document are believed to be correct at the time of publication. EH40 (as amended) Workplace exposure limits.

**Wording of the R-phrases and H-statements in sections 2 and 3**

H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated.
R12	Extremely flammable.

**Training information:**

Users of breathing apparatus must be trained. Ensure operators understand the flammability hazard.

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**Classification according to Regulation (EC) No 1272/2008 as amended.**

Flam. Gas 1, H220  
Press. Gas Liq. Gas, H280

**Other information:**

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Ensure adequate air ventilation. Ensure all national/local regulations are observed. Ensure equipment is adequately earthed. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Note: When the Product Name appears in the SDS header the decimal sign and its position comply with rules for the structure and drafting of international standards, and is a comma on the line. As an example 2,000 is two (to three decimal places) and not two thousand, whilst 1.000 is one thousand and not one (to three decimal places).

**Last revised date:**  
**Disclaimer:**

08.09.2015

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

Nitrogen

By

BOC

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SDS No.: 000010021697  
1/12**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

**Product name:** Nitrogen, compressed

**Trade name:** Nitrogen (Oxygen Free), Nitrogen BTCA 75, Nitrogen BTCA LE (Low Emission) Grade, Nitrogen CP Grade N5.2, Nitrogen Food Grade, Nitrogen ECD Grade, Nitrogen Grade N6.0, Nitrogen Pharmaceutical Grade, Nitrogen Research Grade N5.5, Nitrogen Zero Grade

**Additional identification**

**Chemical name:** Nitrogen

**Chemical formula:** N<sub>2</sub>

**INDEX No.** -

**CAS-No.** 7727-37-9

**EC No.** 231-783-9

**REACH Registration No.** Listed in Annex IV/V of Regulation (EC) No 1907/2006 (REACH), exempted from registration.

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**Identified uses:** Industrial and professional. Perform risk assessment prior to use. Aerosol propellant. Balance gas for mixtures. Blanketing gas. Calibration gas. Carrier gas. Fire suppressant gas. Food packaging gas. Inerting gas. Inflating tyres. Laboratory use. Laser gas. Pressure head gas, operational assist gas in pressure systems. Process gas. Purge gas. Test gas. Consumer use.

**Uses advised against** Beverage applications. Shielding gas in gas welding. Industrial or technical grade unsuitable for medical and/or food applications or inhalation.

**1.3 Details of the supplier of the safety data sheet**

**Supplier**  
BOC  
Priestley Road, Worsley  
M28 2UT Manchester

**E-mail:** ReachSDS@boc.com

**Telephone:** 0800 111 333**1.4 Emergency telephone number:** 0800 111 333**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification according to Directive 67/548/EEC or 1999/45/EC as amended.**

Not classified

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Classification according to Regulation (EC) No 1272/2008 as amended.

**Physical Hazards**

Gases under pressure

Compressed gas H280: Contains gas under pressure; may explode if heated.

**2.2 Label Elements**



**Signal Words:** Warning

**Hazard Statement(s):** H280: Contains gas under pressure; may explode if heated.

**Precautionary Statement**

**Prevention:** None.

**Response:** None.

**Storage:** P403: Store in a well-ventilated place.

**Disposal:** None.

**Supplemental label information**

EIGA-As: Asphyxiant in high concentrations.

**2.3 Other hazards:** None.

**SECTION 3: Composition/information on ingredients**

**3.1 Substances**

<b>Chemical name</b>	Nitrogen
<b>INDEX No.:</b>	-
<b>CAS-No.:</b>	7727-37-9
<b>EC No.:</b>	231-783-9
<b>REACH Registration No.:</b>	Listed in Annex IV/V of Regulation (EC) No 1907/2006 (REACH), exempted from registration.
<b>Purity:</b>	100%
	The purity of the substance in this section is used for classification only, and does not represent the actual purity of the substance as supplied, for which other documentation should be consulted.
<b>Trade name:</b>	Nitrogen (Oxygen Free), Nitrogen BTCA 75, Nitrogen BTCA LE (Low Emission) Grade, Nitrogen CP Grade N5.2, Nitrogen Food Grade, Nitrogen ECD Grade, Nitrogen Grade N6.0, Nitrogen Pharmaceutical Grade, Nitrogen Research Grade N5.5, Nitrogen Zero Grade

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3/12**SECTION 4: First Aid Measures**

**General:** In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

**4.1 Description of first aid measures**

**Inhalation:** In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

**Eye contact:** Adverse effects not expected from this product.

**Skin Contact:** Adverse effects not expected from this product.

**Ingestion:** Ingestion is not considered a potential route of exposure.

**4.2 Most important symptoms and effects, both acute and delayed:** Respiratory arrest.

**4.3 Indication of any immediate medical attention and special treatment needed**

**Hazards:** None.

**Treatment:** None.

**SECTION 5: Firefighting Measures**

**General Fire Hazards:** Heat may cause the containers to explode.

**5.1 Extinguishing media**

**Suitable extinguishing media:** Material will not burn. In case of fire in the surroundings: use appropriate extinguishing agent.

**Unsuitable extinguishing media:** None.

**5.2 Special hazards arising from the substance or mixture:** None.

**Hazardous Combustion Products:** None.

**5.3 Advice for firefighters**

**Special fire fighting procedures:** In case of fire: Stop leak if safe to do so. Continue water spray from protected position until container stays cool. Use extinguishants to contain the fire. Isolate the source of the fire or let it burn out.

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**Special protective equipment  
for firefighters:**

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Guideline: EN 469 Protective clothing for firefighters. Performance requirements for protective clothing for firefighting. EN 15090 Footwear for firefighters. EN 659 Protective gloves for firefighters. EN 443 Helmets for fire fighting in buildings and other structures. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

**SECTION 6: Accidental Release Measures**

**6.1 Personal precautions,  
protective equipment and  
emergency procedures:**

Evacuate area. Provide adequate ventilation. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Guideline EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

**6.2 Environmental Precautions:**

Prevent further leakage or spillage If safe to do so.

**6.3 Methods and material for  
containment and cleaning up:**

Provide adequate ventilation.

**6.4 Reference to other sections:**

Refer to sections 8 and 13.



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Only experienced and properly instructed persons should handle gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Refer to supplier's handling instructions. The substance must be handled in accordance with good industrial hygiene and safety procedures. Protect containers from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the container contents. When moving containers, even for short distances, use appropriate equipment eg. trolley, hand truck, fork truck etc. Secure cylinders in an upright position at all times, close all valves when not in use. Provide adequate ventilation. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Avoid suckback of water, acid and alkalis. Keep container below 50°C in a well ventilated place. Observe all regulations and local requirements regarding storage of containers. When using do not eat, drink or smoke. Store in accordance with local/regional/national/international regulations. Never use direct flame or electrical heating devices to raise the pressure of a container. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Damaged valves should be reported immediately to the supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminants particularly oil and water. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to transfer gases from one container to another. Container valve guards or caps should be in place.

**7.2 Conditions for safe storage, including any incompatibilities:**

Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible material.

**7.3 Specific end use(s):**

None.

**SECTION 8: Exposure Controls/Personal Protection****8.1 Control Parameters****Occupational Exposure Limits**

None of the components have assigned exposure limits.

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**8.2 Exposure controls**

**Appropriate engineering controls:** Consider a work permit system e.g. for maintenance activities. Ensure adequate air ventilation. Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Oxygen detectors should be used when asphyxiating gases may be released. Systems under pressure should be regularly checked for leakages. Preferably use permanent leak tight connections (eg. welded pipes). Do not eat, drink or smoke when using the product.

**Individual protection measures, such as personal protective equipment**

**General information:** A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Keep self contained breathing apparatus readily available for emergency use. Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

**Eye/face protection:** Wear eye protection to EN 166 when using gases.  
 Guideline: EN 166 Personal Eye Protection.

**Skin protection**  
**Hand Protection:** Wear working gloves while handling containers  
 Guideline: EN 388 Protective gloves against mechanical risks.

**Body protection:** No special precautions.

**Other:** Wear safety shoes while handling containers  
 Guideline: ISO 20345 Personal protective equipment - Safety footwear.

**Respiratory Protection:** Not required.

**Thermal hazards:** No precautionary measures are necessary.

**Hygiene measures:** Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Do not eat, drink or smoke when using the product.

**Environmental exposure controls:** For waste disposal, see section 13.

**SECTION 9: Physical And Chemical Properties**

**9.1 Information on basic physical and chemical properties**

**Appearance**

<b>Physical state:</b>	Gas
<b>Form:</b>	Compressed gas
<b>Colour:</b>	Colorless
<b>Odour:</b>	Odorless gas
<b>Odour Threshold:</b>	Odour threshold is subjective and is inadequate to warn of over exposure.

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<b>pH:</b>	not applicable.
<b>Melting Point:</b>	-210.01 °C
<b>Boiling Point:</b>	-196 °C
<b>Sublimation Point:</b>	not applicable.
<b>Critical Temp. (°C):</b>	-147.0 °C
<b>Flash Point:</b>	Not applicable to gases and gas mixtures.
<b>Evaporation Rate:</b>	Not applicable to gases and gas mixtures.
<b>Flammability (solid, gas):</b>	This product is not flammable.
<b>Flammability limit - upper (%):</b>	not applicable.
<b>Flammability limit - lower(%):</b>	not applicable.
<b>Vapour pressure:</b>	No reliable data available.
<b>Vapour density (air=1):</b>	0.97
<b>Relative density:</b>	0.8
<b>Solubility(ies)</b>	
<b>Solubility in Water:</b>	20 mg/l
<b>Partition coefficient (n-octanol/water):</b>	0.67 not applicable
<b>Autoignition Temperature:</b>	not applicable.
<b>Decomposition Temperature:</b>	Not known.
<b>Viscosity</b>	
<b>Kinematic viscosity:</b>	No data available.
<b>Dynamic viscosity:</b>	0.171 mPa.s (10.9 °C)
<b>Explosive properties:</b>	Not applicable.
<b>Oxidising Properties:</b>	not applicable.

<b>9.2 Other information:</b>	None.
<b>Molecular weight:</b>	28.01 g/mol (N <sub>2</sub> )

**SECTION 10: Stability and Reactivity**

<b>10.1 Reactivity:</b>	No reactivity hazard other than the effects described in sub-section below.
<b>10.2 Chemical Stability:</b>	Stable under normal conditions.
<b>10.3 Possibility of Hazardous Reactions:</b>	None.
<b>10.4 Conditions to Avoid:</b>	None.
<b>10.5 Incompatible Materials:</b>	No reaction with any common materials in dry or wet conditions.
<b>10.6 Hazardous Decomposition Products:</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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8/12**SECTION 11: Toxicological Information**

General information: None.

**11.1 Information on toxicological effects**

<b>Acute toxicity - Oral Product</b>	Based on available data, the classification criteria are not met.
<b>Acute toxicity - Dermal Product</b>	Based on available data, the classification criteria are not met.
<b>Acute toxicity - Inhalation Product</b>	Based on available data, the classification criteria are not met.
<b>Skin Corrosion/Irritation Product</b>	Based on available data, the classification criteria are not met.
<b>Serious Eye Damage/Eye Irritation Product</b>	Based on available data, the classification criteria are not met.
<b>Respiratory or Skin Sensitisation Product</b>	Based on available data, the classification criteria are not met.
<b>Germ Cell Mutagenicity Product</b>	Based on available data, the classification criteria are not met.
<b>Carcinogenicity Product</b>	Based on available data, the classification criteria are not met.
<b>Reproductive toxicity Product</b>	Based on available data, the classification criteria are not met.
<b>Specific Target Organ Toxicity - Single Exposure Product</b>	Based on available data, the classification criteria are not met.
<b>Specific Target Organ Toxicity - Repeated Exposure Product</b>	Based on available data, the classification criteria are not met.
<b>Aspiration Hazard Product</b>	Not applicable to gases and gas mixtures..

**SECTION 12: Ecological Information****12.1 Toxicity**

<b>Acute toxicity Product</b>	No ecological damage caused by this product.
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9/12**12.2 Persistence and Degradability**  
**Product**

The substance is naturally occurring.

**12.3 Bioaccumulative Potential**  
**Product**

The product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.

**12.4 Mobility in Soil**  
**Product**

The substance is a gas, not applicable.

**12.5 Results of PBT and vPvB**  
**assessment**  
**Product**

Not classified as PBT or vPvB.

**12.6 Other Adverse Effects:**

No ecological damage caused by this product.

**SECTION 13: Disposal Considerations****13.1 Waste treatment methods****General information:**

Do not discharge into any place where its accumulation could be dangerous. Vent to atmosphere in a well ventilated place.

**Disposal methods:**Refer to the EIGA code of practice (Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.org>) for more guidance on suitable disposal methods. Dispose of container via supplier only. Discharge, treatment, or disposal may be subject to national, state, or local laws.**European Waste Codes****Container:**

16 05 05: Gases in pressure containers other than those mentioned in 16 05 04.

**SECTION 14: Transport Information****ADR**

14.1 UN Number:	UN 1066
14.2 UN Proper Shipping Name:	NITROGEN, COMPRESSED
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.2
Hazard No. (ADR):	20
Tunnel restriction code:	(E)
Emergency Action Code:	2T
14.4 Packing Group:	-
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	-

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**RID**

14.1 UN Number:	UN 1066
14.2 UN Proper Shipping Name:	NITROGEN, COMPRESSED
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.2
14.4 Packing Group:	-
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	-

**IMDG**

14.1 UN Number:	UN 1066
14.2 UN Proper Shipping Name:	NITROGEN, COMPRESSED
14.3 Transport Hazard Class(es)	
Class:	2.2
Label(s):	2.2
EmS No.:	F-C, S-V
14.3 Packing Group:	-
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	-

**IATA**

14.1 UN Number:	UN 1066
14.2 Proper Shipping Name:	Nitrogen, compressed
14.3 Transport Hazard Class(es):	
Class:	2.2
Label(s):	2.2
14.4 Packing Group:	-
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	-
Other information	
Passenger and cargo aircraft:	Allowed.
Cargo aircraft only:	Allowed.

**14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** not applicable

**Additional identification:** Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the container valve is closed and not leaking. Container valve guards or caps should be in place. Ensure adequate air ventilation.

<b>SECTION 15: Regulatory information</b>
---

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:**

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11/12**National Regulations**

Management of Health and Safety at Work Regulations (1999 No. 3242). The Regulatory Reform (Fire Safety) Order 2005 (2005 No. 1541). Control of Substances Hazardous to Health Regulations (COSHH, 2002 No. 2677). Provision and Use of Work Equipment Regulations (PUWER, 1998 No. 2306). Personal Protective Equipment Regulations (1992 No. 2966). Control of Major Accident Hazards Regulations (COMAH, 2015 No. 483). Pressure Systems Safety Regulations (PSSR, 2000 No. 128). Only products that comply with the food regulations (EC) No. 1333/2008 and (EU) No. 231/2012 and are labelled as such may be used as food additives  
This Safety Data Sheet has been produced to comply with Regulation (EU) 453/2010.

**15.2 Chemical safety assessment:** No Chemical Safety Assessment has been carried out.**SECTION 16: Other Information****Revision Information:** Not relevant.**Key literature references and sources for data:**

Various sources of data have been used in the compilation of this SDS, they include but are not exclusive to:  
Agency for Toxic Substances and Diseases Registry (ATSDR) (<http://www.atsdr.cdc.gov/>).  
European Chemical Agency: Guidance on the Compilation of Safety Data Sheets.  
European Chemical Agency: Information on Registered Substances <http://apps.echa.europa.eu/registered/registered-sub.aspx#search>  
European Industrial Gases Association (EIGA) Doc. 169 Classification and Labelling guide  
International Programme on Chemical Safety (<http://www.inchem.org/>)  
ISO 10156:2010 Gases and gas mixtures - Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets.  
Matheson Gas Data Book, 7th Edition.  
National Institute for Standards and Technology (NIST) Standard Reference Database Number 69.  
The ESIS (European chemical Substances Information System) platform of the former European Chemicals Bureau (ECB) ESIS (<http://ecb.jrc.ec.europa.eu/esis/>).  
The European Chemical Industry Council (CEFIC) ERICards.  
United States of America's National Library of Medicine's toxicology data network TOXNET (<http://toxnet.nlm.nih.gov/index.html>)  
Threshold Limit Values (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH).  
Substance specific information from suppliers.  
Details given in this document are believed to be correct at the time of publication.  
EH40 (as amended) Workplace exposure limits.

**Wording of the R-phrases and H-statements in sections 2 and 3**

H280 Contains gas under pressure; may explode if heated.

**Training information:**

Users of breathing apparatus must be trained. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Ensure operators understand the hazards.

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12/12**Classification according to Regulation (EC) No 1272/2008 as amended.**

Press. Gas Compr. Gas, H280

**Other information:**

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Ensure adequate air ventilation. Ensure all national/local regulations are observed. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Note: When the Product Name appears in the SDS header the decimal sign and its position comply with rules for the structure and drafting of international standards, and is a comma on the line. As an example 2,000 is two (to three decimal places) and not two thousand, whilst 1.000 is one thousand and not one (to three decimal places).

**Last revised date:**

19.02.2016

**Disclaimer:**

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.



Butane

By

BOC

**SAFETY DATA SHEET****Butane n-**Issue Date: 16.01.2013  
Last revised date: 19.10.2015

Version: 1. 1

SDS No.: 000010021793  
1/14**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

**Product name:** Butane n-

**Trade name:** Butane (N-Butane) Instrument Grade N2.5, Butane (N-Butane) Pure Grade N2.0, Butane (N-Butane) Technical Grade N1.5

**Additional identification**

**Chemical name:** Butane

**Chemical formula:** C<sub>4</sub>H<sub>10</sub>

**INDEX No.** 601-004-00-0

**CAS-No.** 106-97-8

**EC No.** 203-448-7

**REACH Registration No.** 01-2119474691-32

**1.2 Relevant identified uses of the substance or mixture and uses advised against****Identified uses:**

Industrial and professional. Perform risk assessment prior to use.  
Aerosol propellant. Refrigerant. Transfilling gas or liquid, Use as a fuel. Using gas alone or in mixtures for the calibration of analysis equipment. Formulation of mixtures with gas in pressure receptacles.  
Consumer use.

**Uses advised against**

Use as a fuel. Aerosol propellant.  
Uses other than those listed above are not supported.

**1.3 Details of the supplier of the safety data sheet****Supplier**

BOC  
Priestley Road, Worsley  
M28 2UT Manchester

**Telephone:** 0800 111 333**E-mail:** ReachSDS@boc.com**1.4 Emergency telephone number:** 0800 111 333

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**SECTION 2: Hazards identification**
**2.1 Classification of the substance or mixture**

Classification according to Directive 67/548/EEC or 1999/45/EC as amended.

F+; R12

The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended.

**Physical Hazards**

Flammable gas	Category 1	H220: Extremely flammable gas.
Gases under pressure	Liquefied gas	H280: Contains gas under pressure; may explode if heated.

**2.2 Label Elements**

**Signal Words:** Danger

**Hazard Statement(s):** H220: Extremely flammable gas.  
 H280: Contains gas under pressure; may explode if heated.

**Precautionary Statement**

**Prevention:** P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Response:** P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
 P381: Eliminate all ignition sources if safe to do so.

**Storage:** P403: Store in a well-ventilated place.

**Disposal:** None.

**2.3 Other hazards:** Contact with evaporating liquid may cause frostbite or freezing of skin.

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3/14**SECTION 3: Composition/information on ingredients****3.1 Substances**

<b>Chemical name</b>	Butane
<b>INDEX No.:</b>	601-004-00-0
<b>CAS-No.:</b>	106-97-8
<b>EC No.:</b>	203-448-7
<b>REACH Registration No.:</b>	01-2119474691-32
<b>Purity:</b>	100%
	The purity of the substance in this section is used for classification only, and does not represent the actual purity of the substance as supplied, for which other documentation should be consulted.
<b>Trade name:</b>	Butane (N-Butane) Instrument Grade N2.5, Butane (N-Butane) Pure Grade N2.0, Butane (N-Butane) Technical Grade N1.5

**SECTION 4: First Aid Measures**

**General:** In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

**4.1 Description of first aid measures**

**Inhalation:** In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

**Eye contact:** Rinse the eye with water immediately. Remove contact lenses, if present and easy to do. Continue rinsing. Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes.

**Skin Contact:** Contact with evaporating liquid may cause frostbite or freezing of skin.

**Ingestion:** Ingestion is not considered a potential route of exposure.

**4.2 Most important symptoms and effects, both acute and delayed:** Respiratory arrest. Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling.

**4.3 Indication of any immediate medical attention and special treatment needed**

**Hazards:** Respiratory arrest. Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling.

**Treatment:** Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.

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**SECTION 5: Firefighting Measures**

**General Fire Hazards:** Heat may cause the containers to explode.

**5.1 Extinguishing media**

**Suitable extinguishing media:** Water Spray or Fog. Dry powder. Foam.

**Unsuitable extinguishing media:** Carbon dioxide.

**5.2 Special hazards arising from the substance or mixture:** Incomplete combustion may form carbon monoxide

**5.3 Advice for firefighters**

**Special fire fighting procedures:** In case of fire: Stop leak if safe to do so. Do not extinguish flames at leak because possibility of uncontrolled explosive re-ignition exists. Continue water spray from protected position until container stays cool. Use extinguishants to contain the fire. Isolate the source of the fire or let it burn out.

**Special protective equipment for firefighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Guideline: EN 469 Protective clothing for firefighters. Performance requirements for protective clothing for firefighting. EN 15090 Footwear for firefighters. EN 659 Protective gloves for firefighters. EN 443 Helmets for fire fighting in buildings and other structures. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

**SECTION 6: Accidental Release Measures**

**6.1 Personal precautions, protective equipment and emergency procedures:** Evacuate area. Provide adequate ventilation. Consider the risk of potentially explosive atmospheres. Eliminate all ignition sources if safe to do so. Monitor the concentration of the released product. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

**6.2 Environmental Precautions:** Prevent further leakage or spillage if safe to do so.

**6.3 Methods and material for containment and cleaning up:** Provide adequate ventilation. Eliminate sources of ignition.

**6.4 Reference to other sections:** Refer to sections 8 and 13.

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5/14**SECTION 7: Handling and Storage:****7.1 Precautions for safe handling:**

Only experienced and properly instructed persons should handle gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Purge system with dry inert gas (e.g. helium or nitrogen) before gas is introduced and when system is placed out of service. Purge air from system before introducing gas. Containers, which contain or have contained flammable or explosive substances, must not be inerted with liquid carbon dioxide. Assess the risk of a potentially explosive atmosphere and the need for suitable equipment i.e. explosion-proof. Take precautionary measures against static discharges. Keep away from ignition sources (including static discharges). Provide electrical earthing of equipment and electrical equipment usable in explosive atmospheres. Use only non-sparking tools. Refer to supplier's handling instructions. The substance must be handled in accordance with good industrial hygiene and safety procedures. Ensure the complete system has been (or is regularly) checked for leaks before use. Protect containers from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the container contents. When moving containers, even for short distances, use appropriate equipment eg. trolley, hand truck, fork truck etc. Secure cylinders in an upright position at all times, close all valves when not in use. Provide adequate ventilation. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Avoid suckback of water, acid and alkalis. Keep container below 50°C in a well ventilated place. Observe all regulations and local requirements regarding storage of containers. When using do not eat, drink or smoke. Store in accordance with local/regional/national/international regulations. Never use direct flame or electrical heating devices to raise the pressure of a container. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Damaged valves should be reported immediately to the supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminants particularly oil and water. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to transfer gases from one container to another. Container valve guards or caps should be in place.

**7.2 Conditions for safe storage, including any incompatibilities:**

All electrical equipment in the storage areas should be compatible with the risk of a potentially explosive atmosphere. Segregate from oxidant gases and other oxidants being stored. Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible material.

**7.3 Specific end use(s):**

None.

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**SECTION 8: Exposure Controls/Personal Protection**
**8.1 Control Parameters**
**Occupational Exposure Limits**

Chemical name	type	Exposure Limit Values	Source
Butane	TWA	600 ppm 1,450 mg/m3	UK. EH40 Workplace Exposure Limits (WELs) (12 2011)
	STEL	750 ppm 1,810 mg/m3	

**8.2 Exposure controls**
**Appropriate engineering controls:**

Consider a work permit system e.g. for maintenance activities. Ensure adequate air ventilation. Provide adequate general and local exhaust ventilation. Keep concentrations well below lower explosion limits. Gas detectors should be used when quantities of flammable gases or vapours may be released. Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Systems under pressure should be regularly checked for leakages. Product to be handled in a closed system. Use only permanent leak tight installations (e.g. welded pipes). Take precautionary measures against static discharges.

**Individual protection measures, such as personal protective equipment**
**General information:**

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Keep self contained breathing apparatus readily available for emergency use. Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. Do not eat, drink or smoke when using the product.

**Eye/face protection:**

Safety eyewear, goggles or face-shield to EN166 should be used to avoid exposure to liquid splashes. Wear eye protection to EN 166 when using gases. Guideline: EN 166 Personal Eye Protection.

**Skin protection**
**Hand Protection:**

Wear working gloves while handling containers  
 Guideline: EN 388 Protective gloves against mechanical risks.

**Body protection:**

Wear fire/flame resistant/retardant clothing.  
 Guideline: ISO/TR 2801:2007 Clothing for protection against heat and flame -- General recommendations for selection, care and use of protective clothing.

**Other:**

Wear safety shoes while handling containers  
 Guideline: ISO 20345 Personal protective equipment - Safety footwear.

**Respiratory Protection:**

Not required.

**Thermal hazards:**

No precautionary measures are necessary.

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**Hygiene measures:** Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Do not eat, drink or smoke when using the product.

**Environmental exposure controls:** For waste disposal, see section 13.

**SECTION 9: Physical And Chemical Properties**
**9.1 Information on basic physical and chemical properties**
**Appearance**

<b>Physical state:</b>	Gas
<b>Form:</b>	Liquefied gas
<b>Colour:</b>	Colourless
<b>Odour:</b>	Gasoline-like or natural gas odour
<b>Odour Threshold:</b>	Odour threshold is subjective and is inadequate to warn of over exposure.
<b>pH:</b>	not applicable.
<b>Melting Point:</b>	-138.2 °C
<b>Boiling Point:</b>	-0.5 °C
<b>Sublimation Point:</b>	not applicable.
<b>Critical Temp. (°C):</b>	152.0 °C
<b>Flash Point:</b>	-60 °C
<b>Evaporation Rate:</b>	Not applicable to gases and gas mixtures.
<b>Flammability (solid, gas):</b>	Flammable Gas
<b>Flammability limit - upper (%):</b>	9.5 %(V)
<b>Flammability limit - lower(%):</b>	1.4 %(V)
<b>Vapour pressure:</b>	242.65 kPa (25 °C)
<b>Vapour density (air=1):</b>	2.07 (0 °C) AIR=1
<b>Relative density:</b>	0.6012 (0 °C) 4 °C
<b>Solubility(ies)</b>	
<b>Solubility in Water:</b>	88 mg/l
<b>Partition coefficient (n-octanol/water):</b>	2.89
<b>Autoignition Temperature:</b>	365 °C
<b>Decomposition Temperature:</b>	435 °C
<b>Viscosity</b>	
<b>Kinematic viscosity:</b>	No data available.
<b>Dynamic viscosity:</b>	0.007 mPa.s (20 °C)
<b>Explosive properties:</b>	Not applicable.
<b>Oxidising Properties:</b>	not applicable.

**9.2 Other information:**

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

**Molecular weight:** 58.12 g/mol (C<sub>4</sub>H<sub>10</sub>)

**Minimum ignition energy:** 0.25 mJ



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**SECTION 10: Stability and Reactivity**

- |   |  |
|---|--|
| <b>10.1 Reactivity:</b>                         | No reactivity hazard other than the effects described in sub-section below.                          |
| <b>10.2 Chemical Stability:</b>                 | Stable under normal conditions.  |
| <b>10.3 Possibility of Hazardous Reactions:</b> | Can form a potentially explosive atmosphere in air. May react violently with oxidants.               |
| <b>10.4 Conditions to Avoid:</b>                | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.       |
| <b>10.5 Incompatible Materials:</b>             | Air and oxidisers. For material compatibility see latest version of ISO-11114.                       |
| <b>10.6 Hazardous Decomposition Products:</b>   | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

**SECTION 11: Toxicological Information**

General information: None.

**11.1 Information on toxicological effects**

<b>Acute toxicity - Oral Product</b>	Based on available data, the classification criteria are not met.
--------------------------------------	---

<b>Acute toxicity - Dermal Product</b>	Based on available data, the classification criteria are not met.
--	---

<b>Acute toxicity - Inhalation Product</b>	Not classified for acute toxicity based on available data.
--	--

Butane	LC 50 (Rat, 4 h): 658 mg/l
--------	----------------------------

<b>Repeated dose toxicity</b> Butane	LOAEL (Rat(Female, Male), Inhalation): 21,641 mg/m <sup>3</sup> NOAEL (Rat(Female, Male), Inhalation): 19,678 mg/m <sup>3</sup>
---	--

<b>Skin Corrosion/Irritation Product</b>	Based on available data, the classification criteria are not met.
--	---

<b>Serious Eye Damage/Eye Irritation Product</b>	Based on available data, the classification criteria are not met.
--	---

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Butane Not irritating

**Respiratory or Skin Sensitisation**
**Product**

Based on available data, the classification criteria are not met.

**Germ Cell Mutagenicity**
**Product**

Based on available data, the classification criteria are not met.

**Carcinogenicity**
**Product**

Based on available data, the classification criteria are not met.

**Reproductive toxicity**
**Product**

Based on available data, the classification criteria are not met.

**Specific Target Organ Toxicity - Single Exposure**
**Product**

Based on available data, the classification criteria are not met.

**Specific Target Organ Toxicity - Repeated Exposure**
**Product**

Based on available data, the classification criteria are not met.

**Aspiration Hazard**
**Product**

Not applicable to gases and gas mixtures..

**SECTION 12: Ecological Information**
**12.1 Toxicity**
**Acute toxicity**
**Product**

No ecological damage caused by this product.

**Acute toxicity - Fish**

## Butane

LC 50 (Various, 96 h): 24.11 mg/l (QSAR) Remarks: QSAR

**Acute toxicity - Aquatic Invertebrates**

## Butane

LC50 (Water flea (Daphnia magna), 48 h): 14.2 mg/l

**Toxicity to aquatic plants**

## Butane

LC50 (Alga, 72 h): 7.7 mg/l

**12.2 Persistence and Degradability**
**Product**

Not applicable to gases and gas mixtures..

**12.3 Bioaccumulative Potential**
**Product**

The product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.

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**12.4 Mobility in Soil**
**Product**

Because of its high volatility, the product is unlikely to cause ground or water pollution.

**12.5 Results of PBT and vPvB assessment**
**Product**

Not classified as PBT or vPvB.

**12.6 Other Adverse Effects:**
**Global Warming Potential**

 Global warming potential: 4  
 Contains greenhouse gas(es) not covered by 842/2006/EC. Contains greenhouse gas(es). When discharged in large quantities may contribute to the greenhouse effect.

Butane

**SECTION 13: Disposal Considerations**
**13.1 Waste treatment methods**
**General information:**

Do not discharge into any place where its accumulation could be dangerous. Consult supplier for specific recommendations. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor.

**Disposal methods:**

 Refer to the EIGA code of practice (Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.org>) for more guidance on suitable disposal methods. Dispose of container via supplier only. Discharge, treatment, or disposal may be subject to national, state, or local laws.

**European Waste Codes**
**Container:**

16 05 04\*: gases in pressure containers (including halons) containing dangerous substances

**SECTION 14: Transport Information**
**ADR**

14.1 UN Number:	UN 1011
14.2 UN Proper Shipping Name:	BUTANE
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.1
Hazard No. (ADR):	23
Tunnel restriction code:	(B/D)
Emergency Action Code:	2YE
14.4 Packing Group:	-
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	-

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**RID**

 14.1 UN Number: UN 1011  
 14.2 UN Proper Shipping Name: BUTANE  
 14.3 Transport Hazard Class(es)  
   Class: 2  
   Label(s): 2.1  
 14.4 Packing Group: -  
 14.5 Environmental hazards: not applicable  
 14.6 Special precautions for user: -

**IMDG**

 14.1 UN Number: UN 1011  
 14.2 UN Proper Shipping Name: BUTANE  
 14.3 Transport Hazard Class(es)  
   Class: 2.1  
   Label(s): 2.1  
   EmS No.: F-D, S-U  
 14.3 Packing Group: -  
 14.5 Environmental hazards: not applicable  
 14.6 Special precautions for user: -

**IATA**

 14.1 UN Number: UN 1011  
 14.2 Proper Shipping Name: Butane  
 14.3 Transport Hazard Class(es):  
   Class: 2.1  
   Label(s): 2.1  
 14.4 Packing Group: -  
 14.5 Environmental hazards: not applicable  
 14.6 Special precautions for user: -  
   Other information  
     Passenger and cargo aircraft: Forbidden.  
     Cargo aircraft only: Allowed.

**14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** not applicable

**Additional identification:** Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the container valve is closed and not leaking. Container valve guards or caps should be in place. Ensure adequate air ventilation.

**SECTION 15: Regulatory information**
**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:**
**EU Regulations**
**Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use:**

**SAFETY DATA SHEET**
**Butane n-**

 Issue Date: 16.01.2013  
 Last revised date: 19.10.2015

Version: 1. 1

 SDS No.: 000010021793  
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Chemical name	CAS-No.	Concentration
Butane	106-97-8	

**Directive 96/82/EC (Seveso II): on the control of major accident hazards involving dangerous substances:**

Chemical name	CAS-No.	Concentration
Butane	106-97-8	100%

**Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work:**

Chemical name	CAS-No.	Concentration
Butane	106-97-8	100%

**National Regulations**

Dangerous Substances and Explosive Atmospheres Regulations (DSEAR 2002 No. 2776). Management of Health and Safety at Work Regulations (1999 No. 3242). The Regulatory Reform (Fire Safety) Order 2005 (2005 No. 1541). Control of Substances Hazardous to Health Regulations (COSHH, 2002 No. 2677). Provision and Use of Work Equipment Regulations (PUWER, 1998 No. 2306). Personal Protective Equipment Regulations (1992 No. 2966). Control of Major Accident Hazards Regulations (COMAH, 2015 No. 483). Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations (EPS, 1996 No. 192). Pressure Systems Safety Regulations (PSSR, 2000 No. 128). Only products that comply with the food regulations (EC) No. 1333/2008 and (EU) No. 231/2012 and are labelled as such may be used as food additives.

This Safety Data Sheet has been produced to comply with Regulation (EU) 453/2010.

**15.2 Chemical safety assessment:** No Chemical Safety Assessment has been carried out.

**SECTION 16: Other Information**
**Revision Information:** Not relevant.

**SAFETY DATA SHEET****Butane n-**Issue Date: 16.01.2013  
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SDS No.: 000010021793  
13/14**Key literature references and sources for data:**

Various sources of data have been used in the compilation of this SDS, they include but are not exclusive to:

Agency for Toxic Substances and Diseases Registry (ATSDR) (<http://www.atsdr.cdc.gov/>).

European Chemical Agency: Guidance on the Compilation of Safety Data Sheets.

European Chemical Agency: Information on Registered Substances <http://apps.echa.europa.eu/registered/registered-sub.aspx#search>

European Industrial Gases Association (EIGA) Doc. 169 Classification and Labelling guide.

International Programme on Chemical Safety (<http://www.inchem.org/>)

ISO 10156:2010 Gases and gas mixtures - Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets.

Matheson Gas Data Book, 7th Edition.

National Institute for Standards and Technology (NIST) Standard Reference Database Number 69.

The ESIS (European chemical Substances Information System) platform of the former European Chemicals Bureau (ECB) ESIS (<http://ecb.jrc.ec.europa.eu/esis/>).

The European Chemical Industry Council (CEFIC) ERICards.

United States of America's National Library of Medicine's toxicology data network TOXNET (<http://toxnet.nlm.nih.gov/index.html>)

Threshold Limit Values (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH).

Substance specific information from suppliers.

Details given in this document are believed to be correct at the time of publication.

EH40 (as amended) Workplace exposure limits.

**Wording of the R-phrases and H-statements in sections 2 and 3**

H220 Extremely flammable gas.  
H280 Contains gas under pressure; may explode if heated.  
R12 Extremely flammable.

**Training information:**

Users of breathing apparatus must be trained. Ensure operators understand the flammability hazard.

**Classification according to Regulation (EC) No 1272/2008 as amended.**

Flam. Gas 1, H220  
Press. Gas Liq. Gas, H280

**Other information:**

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Ensure adequate air ventilation. Ensure all national/local regulations are observed. Ensure equipment is adequately earthed. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Note: When the Product Name appears in the SDS header the decimal sign and its position comply with rules for the structure and drafting of international standards, and is a comma on the line. As an example 2,000 is two (to three decimal places) and not two thousand, whilst 1.000 is one thousand and not one (to three decimal places).

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**Last revised date:** 19.10.2015

**Disclaimer:** This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

Oxygen

By

Praxair





Making our planet more productive™

# Oxygen, compressed

## Safety Data Sheet P-4638

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 06/23/2015 Supersedes: 05/11/2015

### SECTION 1: Product and company identification

#### 1.1. Product Identifier

Product form : Substance  
 Name : Oxygen, compressed  
 CAS No : 7782-44-7  
 Formula : O<sub>2</sub>  
 Other means of identification : Oxygen, Compressed; MediPure Oxygen; Aviator's Breathing Oxygen; USP Oxygen; Oxygen - Diving Grade

#### 1.2. Relevant Identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Medical applications.  
 Industrial use  
 Diving Gas (Underwater Breathing)

#### 1.3. Details of the supplier of the safety data sheet

Praxair, Inc.  
 39 Old Ridgebury Road  
 Danbury, CT 06810-5113 - USA  
 T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146  
[www.praxair.com](http://www.praxair.com)

#### 1.4. Emergency telephone number

Emergency number : Onsite Emergency: 1-800-645-4633

CHEMTREC, 24hr/day 7days/week  
 — Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887  
 (collect calls accepted, Contract 17729)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

Classification (GHS-US)

Ox. Gas 1 H270  
 Compressed gas H280

#### 2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US)



GHS03

GHS04

Signal word (GHS-US)

: DANGER

Hazard statements (GHS-US)

: H270 - MAY CAUSE OR INTENSIFY FIRE; OXIDIZER  
 H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED

Precautionary statements (GHS-US)

: P202 - Do not handle until all safety precautions have been read and understood  
 P220 - Keep/Store away from combustible materials, clothing  
 P244 - Keep reduction valves/valves and fittings free from oil and grease  
 P271+P403 - Use and store only outdoors or in a well-ventilated place.  
 P370+P376 - In case of fire: Stop leak if safe to do so  
 CGA-PG05 - Use a back flow preventive device in the piping.  
 CGA-PG20+CGA-PG10 - Use only with equipment of compatible materials of construction and rated for cylinder pressure.  
 CGA-PG22 - Use only with equipment cleaned for oxygen service.  
 CGA-PG21 - Open valve slowly.  
 CGA-PG06 - Close valve after each use and when empty.

EN (English US)

SDS ID: P-4638

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# Oxygen, compressed

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CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).

### 2.3. Other hazards

Other hazards not contributing to the classification

: Breathing 80 percent or more oxygen at atmospheric pressure for more than a few hours may cause nasal stuffiness, cough, sore throat, chest pain, and breathing difficulty. Breathing oxygen at higher pressure increases the likelihood of adverse effects within a shorter time period. Breathing pure oxygen under pressure may cause lung damage and central nervous system (CNS) effects, resulting in dizziness, poor coordination, tingling sensation, visual and hearing disturbances, muscular twitching, unconsciousness, and convulsions. Breathing oxygen under pressure may cause prolongation of adaptation to darkness and reduced peripheral vision.

### 2.4. Unknown acute toxicity (GHS-US)

No data available

## SECTION 3: Composition / ingredients

### 3.1. Substance

Name : Oxygen, compressed  
CAS No : 782-44-7

Name	Product Identifier	%
Oxygen	(CAS No) 7782-44-7	99.5 - 100

### 3.2. Mixture

Not applicable

## SECTION 4: Hazards

### 4.1. Description of first aid measures

First-aid measures after inhalation : Move to fresh air. Get medical advice/attention.  
 First-aid measures after skin contact : Adverse effects not expected from this product.  
 First-aid measures after eye contact : Adverse effects not expected from this product. In case of eye irritation: Rinse immediately with plenty of water. Consult an ophthalmologist if irritation persists.  
 First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

### 4.2. Most important symptoms and effects, both acute and delayed

No additional information available

### 4.3. Indication of any immediate medical attention and special treatment needed

None.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Vigorously accelerates combustion. Use media appropriate for surrounding fire. Water (e.g., safety shower) is the preferred extinguishing media for clothing fires.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Oxidizing agent; vigorously accelerates combustion. Contact with flammable materials may cause fire or explosion.

### 5.3. Advice for firefighters

Firefighting instructions : High-pressure, oxidizing gas.

Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.

Special protective equipment for fire fighters : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.

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- Specific methods : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.
- Stop flow of product if safe to do so.
- Use water spray or fog to knock down fire fumes if possible.
- Other information : Heat of fire can build pressure in container and cause it to rupture. Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by DOT.) No part of the container should be subjected to a temperature higher than 125°F (52°C). Smoking, flames, and electric sparks in the presence of enriched oxygen atmospheres are potential explosion hazards.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### General measures

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Ensure adequate air ventilation. Eliminate ignition sources. Evacuate area. Try to stop release. Monitor concentration of released product. Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Stop leak if safe to do so.

##### 6.1.1. For non-emergency personnel

No additional information available

##### 6.1.2. For emergency responders

No additional information available

#### 6.2. Environmental precautions

Try to stop release.

#### 6.3. Methods and material for containment and cleaning up

No additional information available

#### 6.4. Reference to other sections

See also sections 8 and 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

##### Precautions for safe handling

: Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

##### Safe use of the product

: **The suitability of this product as a component in underwater breathing gas mixtures is to be determined by or under the supervision of personnel experienced in the use of underwater breathing gas mixtures and familiar with the physiological effects, methods employed, frequency and duration of use, hazards, side effects, and precautions to be taken.**

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### 7.2. Conditions for safe storage, including any incompatibilities

#### Storage conditions

: Store only where temperature will not exceed 125°F (52°C). Post "No Smoking or Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g., NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16.

**OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE:** When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

None.

### 8.1. Control parameters

Oxygen, compressed (7782-44-7)	
ACGIH	Not established
USA OSHA	Not established
Oxygen (7782-44-7)	
ACGIH	Not established
USA OSHA	Not established

### 8.2. Exposure controls

#### Appropriate engineering controls

: Avoid oxygen rich (>23.5%) atmospheres. Use a local exhaust system with sufficient flow velocity to maintain an adequate supply of air in the worker's breathing zone. Mechanical (general): General exhaust ventilation may be acceptable if it can maintain an adequate supply of air.

#### Eye protection

: Wear safety glasses with side shields.

#### Skin and body protection

: Wear metatarsal shoes and work gloves for cylinder handling, and protective clothing where needed. Wear appropriate chemical gloves during cylinder changeout or wherever contact with product is possible. Select per OSHA 29 CFR 1910.132, 1910.136, and 1910.138. As needed for welding, wear hand, head, and body protection to help prevent injury from radiation and sparks. (See ANSI Z49.1.) At a minimum, this includes welder's gloves and protective goggles, and may include arm protectors, aprons, hats, and shoulder protection as well as substantial clothing.

#### Respiratory protection

: When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Gas  
 Appearance : Colorless gas.  
 Molecular mass : 32 g/mol  
 Color : Colorless.

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Odor	: No odor warning properties.
Odor threshold	: No data available
pH	: Not applicable.
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: -219 °C (-362°F)
Freezing point	: No data available
Boiling point	: -183 °C (-297°F)
Flash point	: Not applicable.
Critical temperature	: -118.6 °C (-181.48°F)
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: Not applicable.
Critical pressure	: 50.4 bar (731.4 psia)
Relative vapor density at 20 °C	: 0.0827 lb/ft <sup>3</sup> (1.325 kg/m <sup>3</sup> ) absolute vapor density at 70°F/21.1°C, 1 atm
Relative density	: 1.1
Density	: 1.4289 kg/m <sup>3</sup> (at 21.1 °C)
Relative gas density	: 1.1
Solubility	: Water: 39 mg/l
Log Pow	: Not applicable.
Log Kow	: Not applicable.
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Explosive properties	: Not applicable.
Oxidizing properties	: Oxidizer.
Explosion limits	: No data available

### 9.2. Other information

Gas group	: Compressed gas
Additional information	: Gas/vapor heavier than air. May accumulate in confined spaces, particularly at or below ground level.

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	No additional information available
<b>10.2. Chemical stability</b>	Stable under normal conditions.
<b>10.3. Possibility of hazardous reactions</b>	Violently oxidizes organic material.
<b>10.4. Conditions to avoid</b>	None under recommended storage and handling conditions (see section 7).
<b>10.5. Incompatible materials</b>	Keep equipment free from oil and grease. Consider the potential toxicity hazard due to the presence of chlorinated or fluorinated polymers in high pressure (> 30 bar) oxygen lines in case of combustion. May react violently with combustible materials. May react violently with reducing agents.
<b>10.6. Hazardous decomposition products</b>	None.

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### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified
	pH: Not applicable.
Serious eye damage/irritation	: Not classified
	pH: Not applicable.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general : No ecological damage caused by this product.

#### 12.2. Persistence and degradability

<b>Oxygen, compressed (7782-44-7)</b>	
Persistence and degradability	No ecological damage caused by this product.
<b>Oxygen (7782-44-7)</b>	
Persistence and degradability	No ecological damage caused by this product.

#### 12.3. Bioaccumulative potential

<b>Oxygen, compressed (7782-44-7)</b>	
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.
<b>Oxygen (7782-44-7)</b>	
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.

#### 12.4. Mobility in soil

<b>Oxygen, compressed (7782-44-7)</b>	
Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.
<b>Oxygen (7782-44-7)</b>	
Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.

#### 12.5. Other adverse effects

Effect on ozone layer	: None.
Effect on the global warming	: No known effects from this product.

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### SECTION 13: Disposal considerations

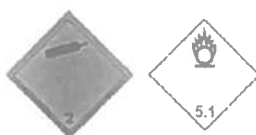
#### 13.1. Waste treatment m

Waste disposal recommendation : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

### SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1072 Oxygen, compressed, 2.2  
 UN-No.(DOT) : UN1072  
 Proper Shipping Name (DOT) : Oxygen, compressed  
 Transport hazard class(es) (DOT) : 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115  
 Hazard labels (DOT) : 2.2 - Non-flammable gas  
 5.1 - Oxidizer



DOT Special Provisions (49 CFR 172.102) : 110 - Fire extinguishers transported under UN1044 may include installed actuating cartridges (cartridges, power device of Division 1.4C or 1.4S), without changing the classification of Division 2.2, provided the aggregate quantity of deflagrating (propellant) explosives does not exceed 3.2 grams per extinguishing unit.  
 A14 - This material is not authorized to be transported as a limited quantity or consumer commodity in accordance with 173.306 of this subchapter when transported aboard an aircraft.

Additional Information

Emergency Response Guide (ERG) Number : 122 (UN1072)

Other information : No supplementary information available.

Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers:  
 - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

Transport by sea

UN-No. (IMDG) : 1072  
 Proper Shipping Name (IMDG) : OXYGEN, COMPRESSED  
 Class (IMDG) : 2 - Gases  
 MFAG-No : 122

Air transport

UN-No. (IATA) : 1072  
 Proper Shipping Name (IATA) : Oxygen, compressed  
 Class (IATA) : 2  
 Civil Aeronautics Law : Gases under pressure/Gases nonflammable nontoxic under pressure

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### Oxygen, compressed (7782-44-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

SARA Section 311/312 Hazard Classes	Sudden release of pressure hazard Fire hazard
-------------------------------------	--

All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory.

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This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

### 15.2. International regulations

#### CANADA

<b>Oxygen, compressed (7782-44-7)</b>
Listed on the Canadian DSL (Domestic Substances List)
<b>Oxygen (7782-44-7)</b>
Listed on the Canadian DSL (Domestic Substances List)

### EU-Regulations

<b>Oxygen, compressed (7782-44-7)</b>
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### 15.2.2. National regulations

<b>Oxygen, compressed (7782-44-7)</b>
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Phillippines Inventory of Chemicals and Chemical Substances)

### 15.3. US State regulations

<b>Oxygen, compressed(7782-44-7)</b>	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

<b>Oxygen (7782-44-7)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	

<b>Oxygen (7782-44-7)</b>
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

### SECTION 16: Other information

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### Other information

: When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc., it is the user's obligation to determine the conditions of safe use of the product.

Praxair SDSs are furnished on sale or delivery by Praxair or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your Praxair sales representative, local distributor, or supplier, or download from [www.praxair.com](http://www.praxair.com). If you have questions regarding Praxair SDSs, would like the document number and date of the latest SDS, or would like the names of the Praxair suppliers in your area, phone or write the Praxair Call Center (Phone: 1-800-PRAXAIR/1-800-772-9247; Address: Praxair Call Center, Praxair, Inc., P.O. Box 44, Tonawanda, NY 14151-0044).

PRAXAIR and the Flowing Airstream design are trademarks or registered trademarks of Praxair Technology, Inc. in the United States and/or other countries.

### NFPA health hazard

: 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

### NFPA fire hazard

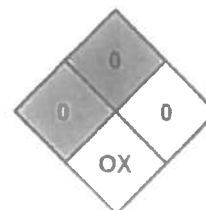
: 0 - Materials that will not burn.

### NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

### NFPA specific hazard

: OX - This denotes an oxidizer, a chemical which can greatly increase the rate of combustion/fire.



### HMIS III Rating

#### Health

: 0 Minimal Hazard - No significant risk to health

#### Flammability

: 0 Minimal Hazard

#### Physical

: 3 Serious Hazard

SDS US (GHS HazCom 2012) - Praxair

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

Argon

By

Praxair



Making our planet more productive

# Argon, compressed

## Safety Data Sheet P-4563

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 10/03/2014 Supersedes: 12/01/2009

### SECTION 1: Product and company identification

#### 1.1. Product Identifier

Product form : Substance  
 Name : Argon, compressed  
 CAS No : 7440-37-1  
 Formula : Ar  
 Other means of identification : Shielding gas, argon 40

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Industrial use, Use as directed.

#### 1.3. Details of the supplier of the safety data sheet

Praxair, Inc.  
 39 Old Ridgebury Road  
 Danbury, CT 06810-5113 - USA  
 T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146  
[www.praxair.com](http://www.praxair.com)

#### 1.4. Emergency telephone number

Emergency number : Onsite Emergencies: 1-800-645-4633  
 CHEMTREC: USA 1-800-424-9300, International 001-703-527-3887 (Collect calls accepted, contract 17729)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

Classification (GHS-US)  
 Compressed gas H280  
 Full text of H-phrases: see section 16

#### 2.2. Label elements

GHS-US labeling  
 Hazard pictograms (GHS-US)



GHS04

Signal word (GHS-US) : Warning  
 Hazard statements (GHS-US) : H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED  
 OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.  
 Precautionary statements (GHS-US) : P202 - Do not handle until all safety precautions have been read and understood  
 P271+P403 - Use and store only outdoors or in a well-ventilated place.  
 CGA-PG05 - Use a back flow preventive device in the piping.  
 CGA-PG10 - Use only with equipment rated for cylinder pressure.  
 CGA-PG06 - Close valve after each use and when empty.  
 CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).

#### 2.3. Other hazards

Other hazards not contributing to the classification : Asphyxiant in high concentrations.

#### 2.4. Unknown acute toxicity (GHS-US)

No data available

### SECTION 3: Composition/information on ingredients

#### 3.1. Substance

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according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Name	Product Identifier	%
Argon, compressed (Main constituent)	(CAS No) 7440-37-1	100

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures after inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
- First-aid measures after skin contact : Adverse effects not expected from this product.
- First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Get immediate medical attention.
- First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

### 4.2. Most important symptoms and effects, both acute and delayed

No additional information available

### 4.3. Indication of any immediate medical attention and special treatment needed

None.

## SECTION 5: Fire fighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

### 5.2. Special hazards arising from the substance or mixture

Reactivity : No reactivity hazard other than the effects described in sub-sections below.

### 5.3. Advice for firefighters

- Firefighting instructions : Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.
- Protection during firefighting : Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen.
- Special protective equipment for fire fighters : Use self-contained breathing apparatus. Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
- Specific methods : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. Stop flow of product if safe to do so. Use water spray or fog to knock down fire fumes if possible.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Evacuate area. Ensure adequate air ventilation. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Stop leak if safe to do so.

#### 6.1.1. For non-emergency personnel

No additional information available

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Try to stop release.

# Argon, compressed

## Safety Data Sheet

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

### 6.3. Methods and material for containment and cleaning up

No additional information available

### 6.4. Reference to other sections

See also sections 8 and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling

: Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

: Store in a cool, well-ventilated place. Store and use with adequate ventilation. Store only where temperature will not exceed 125°F (52°C). Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods.

**OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE:** When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

### 7.3. Specific end use(s)

None.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Argon, compressed (7440-37-1)	
ACGIH	Not established
USA OSHA	Not established

### 8.2. Exposure controls

Appropriate engineering controls

: Oxygen detectors should be used when asphyxiating gases may be released. Systems under pressure should be regularly checked for leakages. Provide adequate general and local exhaust ventilation. Consider work permit system e.g. for maintenance activities.

Hand protection

: Wear working gloves when handling gas containers.

Eye protection

: Wear safety glasses with side shields.

Respiratory protection

: When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Thermal hazard protection

: None necessary.

Environmental exposure controls

: None necessary.

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according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Other information : Wear safety shoes while handling containers.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Colorless gas.
Molecular mass	: 40 g/mol
Color	: Colorless.
Odor	: No data available
Odor threshold	: No data available
pH	: Not applicable.
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: -189 °C
Freezing point	: No data available
Boiling point	: -185.9 °C
Flash point	: No data available
Critical temperature	: -122.4 °C
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: Not applicable.
Critical pressure	: 4898 kPa
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Specific gravity / density	: 0.103 lb/ft <sup>3</sup> Vapor density at 70°F (21.1°C)
Relative gas density	: 1.38
Solubility	: Water: 61 mg/l
Log Pow	: Not applicable.
Log Kow	: Not applicable.
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Explosive properties	: Not applicable.
Oxidizing properties	: None.
Explosive limits	: No data available

#### 9.2. Other information

Gas group	: Compressed gas
Additional information	: Gas/vapor heavier than air. May accumulate in confined spaces, particularly at or below ground level.

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

#### 0.2. Chemical stability

Stable under normal conditions

#### 10.3. Possibility of hazard

None.

#### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

# Argon, compressed

## Safety Data Sheet

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

### 10.5 Incompatible materials

Using this product in welding and cutting may create additional hazards. The arc from electric arc welding may form gaseous reaction products such as carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. Other decomposition products of arc welding and cutting originate from the volatilization, reaction, and oxidization of the material being worked.

### 10.6 Hazardous decomposition products

None.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified pH: Not applicable.
Serious eye damage/irritation	: Not classified pH: Not applicable.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified No known effects from this product.
Aspiration hazard	: Not classified Not applicable.

## SECTION 12: Ecological information

### 12.1 Toxicity

Ecology - general : No ecological damage caused by this product.

### 12.2 Persistence and degradability

#### Argon, compressed (7440-37-1)

Persistence and degradability	No ecological damage caused by this product.
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### 12.3 Bioaccumulative potential

#### Argon, compressed (7440-37-1)

Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.

### 12.4 Mobility in soil

#### Argon, compressed (7440-37-1)

Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.

### 12.5 Other adverse effects

Effect on ozone layer : None.

Effect on the global warming : None.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Waste treatment methods : May be vented to atmosphere in a well ventilated place. Consult supplier for specific recommendations. Do not discharge into any place where its accumulation could be dangerous. Contact supplier if guidance is required.

# Argon, compressed

## Safety Data Sheet

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

### SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1006 Argon, compressed, 2.2  
UN-No.(DOT) : UN1006  
Proper Shipping Name (DOT) : Argon, compressed  
Department of Transportation (DOT) Hazard Classes : 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115  
Hazard labels (DOT) : 2.2 - Non-flammable gas



#### Additional information

Emergency Response Guide (ERG) Number : 121 (UN1006);120 (UN1951)  
Other information : No supplementary information available.  
Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers:  
- Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

#### Transport by sea

UN-No. (IMDG) : 1006  
Proper Shipping Name (IMDG) : ARGON, COMPRESSED  
Class (IMDG) : 2 - Gases  
MFAG-No : 121

#### Air transport

UN-No.(IATA) : 1006  
Proper Shipping Name (IATA) : ARGON, COMPRESSED  
Class (IATA) : 2  
Civil Aeronautics Law : Gases under pressure/Gases nonflammable nontoxic under pressure

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### Argon, compressed (7440-37-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

SARA Section 311/312 Hazard Classes : Sudden release of pressure hazard

#### 15.2. International regulations

##### CANADA

##### Argon, compressed (7440-37-1)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification : Class A - Compressed Gas

##### EU-Regulations

##### Argon, compressed (7440-37-1)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

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## Safety Data Sheet

according to U.S. Code of Federal Regulations 29 CFR 1910.1200 Hazard Communication.

Classification according to Regulation (EC) No. 1272/2008 [CLP]  
Compressed gas H280

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]  
Not classified

### 15.2.2. National regulations

#### Argon, compressed (7440-37-1)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

### 15.3. US State regulations

#### Argon, compressed(7440-37-1)

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: Other information

Revision date : 10/3/2014 12:00:00 AM

# Argon, compressed

## Safety Data Sheet

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

### Other information

: When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.

Fumes and gases produced during welding and cutting processes can be dangerous to your health and may cause serious lung disease. KEEP YOUR HEAD OUT OF FUMES. DO NOT BREATHE FUMES AND GASES. Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes; or may cause other similar discomfort. Contaminants in the air may add to the hazard of fumes and gases. One such contaminant, chlorinated hydrocarbon vapors from cleaning and degreasing activities, poses a special risk. DO NOT USE ELECTRIC ARCS IN THE PRESENCE OF CHLORINATED HYDROCARBON VAPORS—HIGHLY TOXIC PHOSGENE MAY BE PRODUCED. Metal coatings such as paint, plating, or galvanizing may generate harmful fumes when heated. Residues from cleaning materials may also be harmful. AVOID ARC OPERATIONS ON PARTS WITH PHOSPHATE RESIDUES (ANTI-RUST, CLEANING PREPARATIONS)—HIGHLY TOXIC PHOSPHINE MAY BE PRODUCED.

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc., it is the user's obligation to determine the conditions of safe use of the product.

Praxair SDSs are furnished on sale or delivery by Praxair or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your Praxair sales representative, local distributor, or supplier, or download from [www.praxair.com](http://www.praxair.com). If you have questions regarding Praxair SDSs, would like the document number and date of the latest SDS, or would like the names of the Praxair suppliers in your area, phone or write the Praxair Call Center (Phone: 1-800-PRAXAIR/1-800-772-9247; Address: Praxair Call Center, Praxair, Inc., P.O. Box 44, Tonawanda, NY 14151-0044).

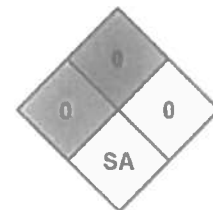
PRAXAIR and the Flowing Airstream design are trademarks or registered trademarks of Praxair Technology, Inc. in the United States and/or other countries.

### Full text of H-phrases:

Compressed gas  
H280

Gases under pressure Compressed gas  
CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED

NFPA health hazard : 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.  
NFPA fire hazard : 0 - Materials that will not burn.  
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.  
NFPA specific hazard : SA - This denotes gases which are simple asphyxiants.



### HMIS III Rating

Health : 0 Minimal Hazard - No significant risk to health  
Flammability : 0 Minimal Hazard  
Physical : 3 Serious Hazard

SDS US (GHS HazCom 2012) - Praxair

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

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Acetylene

By

Praxair

# Acetylene, dissolved

## Safety Data Sheet P-4559

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 02/03/2016 Supersedes: 01/12/2015

### SECTION 1: Product and company identification

#### 1.1. Product Identifier

Product form : Substance  
 Name : Acetylene, dissolved  
 CAS No : 74-86-2  
 Formula : C<sub>2</sub>H<sub>2</sub>  
 Other means of identification : Acetylen, ethine, ethyne, narylene

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Industrial use. Use as directed.

#### 1.3. Details of the supplier of the safety data sheet

Praxair, Inc.  
 39 Old Ridgebury Road  
 Danbury, CT 06810-5113 - USA  
 T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146  
[www.praxair.com](http://www.praxair.com)

#### 1.4. Emergency telephone number

Emergency number : Onsite Emergency: 1-800-645-4633

CHEMTREC, 24 hr/day 7 days/week  
 — Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887  
 (collect calls accepted, Contract 17729)

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Flam. Gas 1 H220  
 Dissolved gas H280

#### 2.2. Label elements

##### GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

DANGER

Hazard statements (GHS-US) :

H220 - EXTREMELY FLAMMABLE GAS  
 H231 - MAY REACT EXPLOSIVELY EVEN IN THE ABSENCE OF AIR AT ELEVATED PRESSURE AND/OR TEMPERATURE  
 H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED  
 OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION  
 CGA-HG04 - MAY FORM EXPLOSIVE MIXTURES WITH AIR

Precautionary statements (GHS-US) :

P202 - Do not handle until all safety precautions have been read and understood  
 P210 - Keep away from Heat, Open flames, Sparks, Hot surfaces. - No smoking  
 P271+P403 - Use and store only outdoors or in a well-ventilated place  
 P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely  
 P381 - Eliminate all ignition sources if safe to do so  
 P501 - Dispose of contents/container in accordance with container Supplier/owner instructions  
 CGA-PG05 - Use a back flow preventive device in the piping  
 CGA-PG13 - Fusible plugs in the top, bottom, or valve melt at 98°C to 107°C (208°F to 224°F).  
 Do not discharge at pressures above 15 psig (103 kPa)  
 CGA-PG06 - Close valve after each use and when empty

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# Acetylene, dissolved

## Safety Data Sheet P-4559

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 02/03/2016 Supersedes: 01/12/2015

CGA-PG11 - Never put cylinders into unventilated areas of passenger vehicles  
 CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)

### 2.3. Other hazards

Other hazards not contributing to the classification

: For safety reasons, the acetylene is dissolved in acetone (CAS no. 67-64-1; Flam. Liq. 2, Eye Irrit. 2, STOT SE 3) in the gas container. Vapour of the solvent is carried away as impurity when the acetylene is extracted from the gas container. The concentration of the solvent vapour in the gas is lower than the concentration limits to change the classification of the acetylene.

### 2.4. Unknown acute toxicity (GHS 05)

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Name	Product identifier	%
Acetylene, dissolved (Main constituent)	(CAS No) 74-86-2	100

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures after inhalation

: Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

First-aid measures after skin contact

: The liquid may cause frostbite. For exposure to liquid, immediately warm frostbite area with warm water not to exceed 105°F (41°C). Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal coloring and sensation have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water. Seek medical evaluation and treatment as soon as possible.

First-aid measures after eye contact

: Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately. Get immediate medical attention.

First-aid measures after ingestion

: Ingestion is not considered a potential route of exposure.

### 4.2. Most important symptoms and effects, both acute and delayed

No additional information available

### 4.3. Indication of any immediate medical attention and special treatment needed

Obtain medical assistance.

## SECTION 5: Fire fighting measures

### 5.1. Extinguishing media

Suitable extinguishing media

: See below. See CGA Pamphlet SB-4, Handling Acetylene Cylinders in Fire Situations, for further information.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard

: **EXTREMELY FLAMMABLE GAS.** If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.

Explosion hazard

: **EXTREMELY FLAMMABLE GAS.** Forms explosive mixtures with air and oxidizing agents.

Reactivity

: No reactivity hazard other than the effects described in sub-sections below.

# Acetylene, dissolved

## Safety Data Sheet P-4559

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.  
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### 5.3. Advice for firefighters

- Firefighting instructions** : Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.
- Protection during firefighting** : Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen.
- Special protective equipment for fire fighters** : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
- Specific methods** : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems
- Stop flow of product if safe to do so
- Use water spray or fog to knock down fire fumes if possible
- Continue water spray from protected position until container stays cool.
- Other information** : Acetylene containers are provided with pressure relief devices designed to vent contents when exposed to elevated temperature

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedure

- General measures** : Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Evacuate area. Ensure adequate ventilation. Stop leak if safe to do so.

#### 6.1.1. For non-emergency personnel

No additional information available

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

### 6.3. Methods and material for containment and cleaning up

No additional information available

### 6.4. Reference to other sections

See also sections 8 and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling** : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment

Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

# Acetylene, dissolved

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### 7.2. Conditions for safe storage, including any incompatibilities

#### Storage conditions

: Store only where temperature will not exceed 125°F (52°C). Post "No Smoking" or "Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g., NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16

**OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE:** When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

#### Storage area

: Acetylene trailers are designed and intended for outdoor use. Acetylene storage in excess of 2,500 cu ft (70.79 cubic meters) is prohibited in buildings and other occupancies.

### 7.3. Specific end use(s)

None.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Acetylene, dissolved (74-86-2)	
ACGIH	Not established
USA OSHA	Not established

### 8.2. Exposure controls

#### Appropriate engineering controls

: An explosion-proof local exhaust system or a mechanical system is acceptable if it can prevent oxygen deficiency and keep hazardous fumes and gases below all applicable exposure limits in the worker's breathing area. During welding, ensure that there is adequate ventilation to keep worker exposure below applicable limits for fumes, gases, and other by-products of welding. Do not breathe fumes or gases. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes, or may cause other similar discomfort.

#### Eye protection

: Wear safety glasses with side shields.

#### Skin and body protection

: As needed for welding, wear hand, head, and body protection to help prevent injury from radiation and sparks. (See ANSI Z49.1.) At a minimum, this includes welder's gloves and protective goggles, and may include arm protectors, aprons, hats, and shoulder protection as well as substantial clothing.

#### Respiratory protection

: When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

#### Thermal hazard protection

: Wear cold insulating gloves when transfilling or breaking transfer connections.

#### Environmental exposure controls

: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

#### Other information

: Consider the use of flame resistant anti-static safety clothing. Wear leather safety gloves and safety shoes when handling cylinders.

## SECTION 9: Physical and chemical properties

### Physical and chemical properties

#### Physical state

: Gas

# Acetylene, dissolved

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Appearance	: Colorless, odorless gas.
Molecular mass	: 26 g/mol
Colour	: Colourless.
Odour	: Garlic like. Poor warning properties at low concentrations.
Odour threshold	: No data available
pH	: Not applicable.
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: -80.8 °C (-113.4°F)
Freezing point	: No data available
Boiling point	: -84 °C (-119.2°F)
Flash point	: -17 °C (1.4°F)
Critical temperature	: 36 °C (97°F)
Auto-ignition temperature	: 305 °C (581°F)
Decomposition temperature	: 635 °C (1175°F)
Flammability (solid, gas)	: 2.5 - 100 vol %
Vapour pressure	: 44 bar (623 psig)
Critical pressure	: 61.38 bar (875 psig)
Relative vapour density at 20 °C	: No data available
Relative density	: Not applicable.
Density	: 0.0012 g/cm <sup>3</sup> (at 0 °C)
Relative gas density	: 0.9
Solubility	: Water: 1185 mg/l
Log Pow	: 0.37
Log Kow	: Not applicable.
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Explosive properties	: Not applicable.
Oxidising properties	: None.
Explosive limits	: No data available
<b>9.2. Other information</b>	
Sublimation point	: -83.3 °C
Gas group	: Dissolved gas

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

#### 10.2. Chemical stability

Dissolved in a solvent supported in a porous mass. Stable under recommended handling and storage conditions (see section 7).

#### 10.3. Possibility of hazardous reactions

May react explosively even in the absence of air. May decompose violently at high temperature and/or pressure or in the presence of a catalyst. Can form explosive mixture with air. May react violently with oxidants.

#### 10.4. Conditions to avoid

High temperature. High pressure. Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

#### 10.5. Incompatible materials

Forms explosive acetylides with copper, silver and mercury. Do not use alloys containing more than 65% copper. Air, Oxidiser. Do not use alloys containing more than 43% silver.



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### 10.6. Hazardous decomposition products

Thermal decomposition or burning may produce carbon monoxide, carbon dioxide, and hydrogen. The welding and cutting process may form reaction products such as carbon monoxide and carbon dioxide. Other decomposition products of normal operation originate from the volatilization, reaction, or oxidation of the material being worked.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified
	pH: Not applicable.
Serious eye damage/irritation	: Not classified
	pH: Not applicable.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : No known ecological damage caused by this product.

### 12.2. Persistence and degradability

Acetylene, dissolved (74-86-2)	
Persistence and degradability	Will rapidly degrade by indirect photolysis in air. Will not undergo hydrolysis.

### 12.3. Bioaccumulative potential

Acetylene, dissolved (74-86-2)	
Log Pow	0.37
Log Kow	Not applicable.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.

### 12.4. Mobility in soil

Acetylene, dissolved (74-86-2)	
Mobility in soil	No data available.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

### 12.5. Other adverse effects

Effect on ozone layer	: No known effects from this product
Effect on the global warming	: No known effects from this product

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

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### SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1001 Acetylene, dissolved  
UN-No.(DOT) : UN1001  
Proper Shipping Name (DOT) : Acetylene, dissolved  
Hazard labels (DOT) : 2.1 - Flammable gas



DOT Special Provisions (49 CFR 172.102) : N86 - UN pressure receptacles made of aluminum alloy are not authorized  
N88 - Any metal part of a UN pressure receptacle in contact with the contents may not contain more than 65% copper, with a tolerance of 1%

Additional information

Emergency Response Guide (ERG) Number : 116 (UN1001)

Other information : No supplementary information available.

Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers:  
- Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

Transport by sea

UN-No. (IMDG) : 1001  
Proper Shipping Name (IMDG) : Acetylene, dissolved  
Class (IMDG) : 2 - Gases  
MFAG-No : 116

Air transport

UN-No. (IATA) : 1001  
Proper Shipping Name (IATA) : Acetylene, dissolved  
Class (IATA) : 2  
Civil Aeronautics Law : Gases under pressure/Gases flammable under pressure(Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### Acetylene, dissolved (74-86-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

SARA Section 311/312 Hazard Classes	Sudden release of pressure hazard Reactive hazard Fire hazard
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All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

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### 15.2. International regulations

#### CANADA

<b>Acetylene, dissolved (74-86-2)</b>
Listed on the Canadian DSL (Domestic Substances List)

#### EU-Regulations

<b>Acetylene, dissolved (74-86-2)</b>
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### 15.2.2. National regulations

<b>Acetylene, dissolved (74-86-2)</b>
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican national Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)

### 15.3. US State regulations

<b>Acetylene, dissolved(74-86-2)</b>	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

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### SECTION 16: Other information

**Other information**

: When using this product in welding and cutting, read and understand the manufacturer's instructions and the precautionary label on the product. Ask your welding products supplier for a copy of Praxair's free safety booklet, P-2035, Precautions and Safe Practices for Gas Welding, Cutting, and Heating, and for other manufacturers' safety publications. For a detailed treatment, get ANSI Z49.1, Safety in Welding, Cutting, and Allied Processes, published by the American Welding Society (AWS), [www.aws.org](http://www.aws.org). Order AWS documents from Global Engineering Documents, [global.ihc.com](http://global.ihc.com). Arcs and sparks can ignite combustible materials. Prevent fires. Refer to NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hotwork. Do not strike an arc on the container. The defect produced by an arc burn may lead to container rupture

Fumes and gases produced during welding and cutting processes can be dangerous to your health and may cause serious lung disease. **KEEP YOUR HEAD OUT OF FUMES. DO NOT BREATHE FUMES AND GASES.** Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes; or may cause other similar discomfort. Contaminants in the air may add to the hazard of fumes and gases

When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc., it is the user's obligation to determine the conditions of safe use of the product

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NFPA health hazard

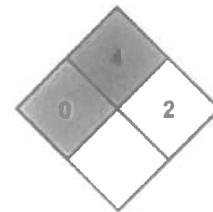
: 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard

: 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity

: 2 - Normally unstable and readily undergo violent decomposition but do not detonate. Also: may react violently with water or may form potentially explosive mixtures with water.



# Acetylene, dissolved

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### HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur  
Flammability : 4 Severe Hazard  
Physical : 2 Moderate Hazard

SDS US (GHS HazCom 2012) - Praxair

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

Propane

By

Praxair

# Propane

## Safety Data Sheet P-4646

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.  
 Date of issue: 01/01/1984    Revision date: 01/21/2016    Supersedes: 04/08/2015

### SECTION 1: Product and company identification

#### 1.1. Product identifier

Product form : Substance  
 Name : Propane  
 CAS No : 74-98-6  
 Formula : C<sub>3</sub>H<sub>8</sub>  
 Other means of identification : Propane, Liquefied Petroleum Gas, n-propane, dimethylmethane, propyl hydride, refrigerant gas R290

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Industrial use. Use as directed.

#### 1.3. Details of the supplier of the safety data sheet

Praxair, Inc.  
 39 Old Ridgebury Road  
 Danbury, CT 06810-5113 - USA  
 T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146  
[www.praxair.com](http://www.praxair.com)

#### 1.4. Emergency telephone number

Emergency number : Onsite Emergency: 1-800-645-4633

CHEMTREC, 24hr/day 7days/week  
 — Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887  
 (collect calls accepted, Contract 17729)

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Flam. Gas 1 H220  
 Liquefied gas H280

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS02

GHS04

Signal word (GHS-US) :

DANGER

Hazard statements (GHS-US) :

H220 - EXTREMELY FLAMMABLE GAS  
 H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED  
 OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION  
 CGA-HG04 - MAY FORM EXPLOSIVE MIXTURES WITH AIR  
 CGA-HG01 - MAY CAUSE FROSTBITE

Precautionary statements (GHS-US) :

P202 - Do not handle until all safety precautions have been read and understood  
 P210 - Keep away from Heat, Open flames, Sparks, Hot surfaces. - No smoking  
 P271+P403 - Use and store only outdoors or in a well-ventilated place  
 P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely  
 P381 - Eliminate all ignition sources if safe to do so  
 CGA-PG05 - Use a back flow preventive device in the piping  
 CGA-PG12 - Do not open valve until connected to equipment prepared for use  
 CGA-PG06 - Close valve after each use and when empty  
 CGA-PG11 - Never put cylinders into unventilated areas of passenger vehicles  
 CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)

# Propane

## Safety Data Sheet P-4646

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

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### 2.3 Other hazards

Other hazards not contributing to the classification : Contact with liquid may cause cold burns/frostbite.

### 2.4 Unknown acute toxicity (GHS US)

No data available

## SECTION 3: Composition/Information on ingredients

### 3.1 Substance

Name	Product Identifier	%
Propane (Main constituent)	(CAS No) 74-98-6	100

### 3.2 Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

First-aid measures after inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

First-aid measures after skin contact : The liquid may cause frostbite. For exposure to liquid, immediately warm frostbite area with warm water not to exceed 105°F (41°C). Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal coloring and sensation have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water. Seek medical evaluation and treatment as soon as possible.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately. Get immediate medical attention.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

### 4.2 Most important symptoms and effects, both acute and delayed

No additional information available

### 4.3 Indication of any immediate medical attention and special treatment needed

None.

## SECTION 5: Fire fighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : Carbon dioxide, dry chemical powder, water spray, fog.

### 5.2 Special hazards arising from the substance or mixture

Fire hazard : **EXTREMELY FLAMMABLE GAS.** If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.

Explosion hazard : **EXTREMELY FLAMMABLE GAS.** Forms explosive mixtures with air and oxidizing agents.

Reactivity : No reactivity hazard other than the effects described in sub-sections below.

### 5.3 Advice for firefighters

Firefighting instructions : Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.

Protection during firefighting : Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen.



# Propane

## Safety Data Sheet P-4646

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Special protective equipment for fire fighters	: Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
Specific methods	: Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems  Stop flow of product if safe to do so  Use water spray or fog to knock down fire fumes if possible.
Other information	: Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by DOT.).

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Evacuate area. Ensure adequate air ventilation. Stop leak if safe to do so.

6.1.1. For non-emergency personnel : No additional information available

6.1.2. For emergency responders : No additional information available

6.2. Environmental precautions : Try to stop release.

6.3. Methods and material for containment and cleaning up : No additional information available

6.4. Reference to other sections : See also sections 8 and 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment

Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

# Propane

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### 7.2. Conditions for safe storage, including any incompatibilities

#### Storage conditions

: Store only where temperature will not exceed 125°F (52°C). Post "No Smoking or Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g., NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16

**OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE:** When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

### 7.3. Specific end use(s)

None.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Propane (74-98-6)		
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
USA IDLH	US IDLH (mg/m <sup>3</sup> )	< mg/m <sup>3</sup>
USA IDLH	US IDLH (ppm)	2100 ppm (10% LEL)
ACGIH	Not established	

### 8.2. Exposure controls

#### Appropriate engineering controls

: An explosion-proof local exhaust system or a mechanical system is acceptable if it can prevent oxygen deficiency and keep hazardous fumes and gases below all applicable exposure limits in the worker's breathing area. During welding, ensure that there is adequate ventilation to keep worker exposure below applicable limits for fumes, gases, and other by-products of welding. Do not breathe fumes or gases. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes, or may cause other similar discomfort.

#### Eye protection

: Wear safety glasses with side shields.

#### Skin and body protection

: As needed for welding, wear hand, head, and body protection to help prevent injury from radiation and sparks. (See ANSI Z49.1.) At a minimum, this includes welder's gloves and protective goggles, and may include arm protectors, aprons, hats, and shoulder protection as well as substantial clothing.

#### respiratory protection

: When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

#### Thermal hazard protection

: Wear cold insulating gloves when transfilling or breaking transfer connections.

#### Environmental exposure controls

: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

#### Other information

: Consider the use of flame resistant anti-static safety clothing. Wear safety shoes while handling containers.

# Propane

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### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Colorless gas.
Molecular mass	: 44 g/mol
Color	: Colorless.
Odor	: Poor warning properties at low concentrations. Stenchant often added. Sweetish.
Odor threshold	: No data available
pH	: Not applicable.
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: No data available
Freezing point	: -187.69 °C (-305.8°F)
Boiling point	: -42.1 °C (-44.32°F)
Flash point	: -104.4 °C (-155.2°F) TCC
Critical temperature	: 96.8 °C (206°F)
Auto-ignition temperature	: 450 °C (842°F)
Decomposition temperature	: No data available
Flammability (solid, gas)	: 2.1 - 9.5 vol %
Vapor pressure	: 8.58 bar (109.73 psig)
Relative vapor density at 20 °C	: No data available
Relative density	: 0.58
Density	: 0.506 - 0.583 g/cm <sup>3</sup> (at 15 °C)
Relative gas density	: 1.5
Solubility	: Water: 75 mg/l
Log Pow	: 2.36
Log Kow	: Not applicable.
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Explosive properties	: Not applicable.
Oxidizing properties	: None.
Explosion limits	: No data available
<b>9.2. Other information</b>	
Gas group	: Liquefied gas
Additional information	: Gas/vapor heavier than air. May accumulate in confined spaces, particularly at or below ground level

### SECTION 10: Stability and reactivity

10.1. Reactivity	No reactivity hazard other than the effects described in sub-sections below.
10.2. Chemical stability	Stable under normal conditions.
10.3. Possibility of hazardous reactions	Can form explosive mixture with air. May react violently with oxidants.
10.4. Conditions to avoid	Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
10.5. Incompatible materials	Air, Oxidizer. Chlorine dioxide.

# Propane

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### 10.6. Hazardous decomposition products

Thermal decomposition or burning may produce carbon monoxide, carbon dioxide, and hydrogen. The welding and cutting process may form reaction products such as carbon monoxide and carbon dioxide. Other decomposition products of normal operation originate from the volatilization, reaction, or oxidation of the material being worked.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

Propane (74-98-6)	
LC50 inhalation rat (mg/l)	658 mg/l/4h
ATE US (vapors)	658.000 mg/l/4h
ATE US (dust, mist)	658.000 mg/l/4h

Skin corrosion/irritation : Not classified  
pH: Not applicable.

Serious eye damage/irritation : Not classified  
pH: Not applicable.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : No ecological damage caused by this product.

### 12.2. Persistence and degradability

Propane (74-98-6)	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.

### 12.3. Bioaccumulative potential

Propane (74-98-6)	
Log Pow	2.36
Log Kow	Not applicable.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.

### 12.4. Mobility in soil

Propane (74-98-6)	
Mobility in soil	No data available.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

### 12.5. Other adverse effects

Effect on ozone layer : None

Effect on the global warming : No known effects from this product

# Propane

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### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

### SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1978 Propane (see also Petroleum gases, liquefied [UN1075]), 2.1

UN-No (DOT) : UN1978

Proper Shipping Name (DOT) : Propane  
 see also Petroleum gases, liquefied [UN1075]

Class (DOT) : 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115

Hazard labels (DOT) : 2.1 - Flammable gas



DOT Special Provisions (49 CFR 172.102) : 19 - For domestic transportation only, the identification number UN1075 may be used in place of the identification number specified in column (4) of the 172.101 table. The identification number used must be consistent on package markings, shipping papers and emergency response information

T50 - When portable tank instruction T50 is referenced in Column (7) of the 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of 173.313 of this subchapter

#### Additional information

Emergency Response Guide (ERG) Number : 115 (UN1075)

Other information : No supplementary information available.

Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers:  
 - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

#### Transport by sea

UN-No. (IMDG) : 1978

Proper Shipping Name (IMDG) : PROPANE

Class (IMDG) : 2 - Gases

MFAG-No : 115

#### Air transport

UN-No. (IATA) : 1978

Proper Shipping Name (IATA) : PROPANE

Class (IATA) : 2

Civil Aeronautics Law : Gases under pressure/Gases flammable under pressure

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### Propane (74-98-6)

Listed on the United States TSCA (Toxic Substances Control Act) Inventory

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Sudden release of pressure hazard Fire hazard
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# Propane

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**Propane (74-98-6)**

All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory.

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

**Propane (74-98-6)**

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

**Propane (74-98-6)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

15.2.2. National regulations

**Propane (74-98-6)**

- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Listed on INSQ (Mexican national Inventory of Chemical Substances)
- Listed on CICR (Turkish Inventory and Control of Chemicals)

15.3. US State regulations

**Propane(74-98-6)**

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

# Propane

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### SECTION 16: Other information

**Other information**

: When using this product in welding and cutting, read and understand the manufacturer's instructions and the precautionary label on the product. Ask your welding products supplier for a copy of Praxair's free safety booklet, P-2035, Precautions and Safe Practices for Gas Welding, Cutting, and Heating, and for other manufacturers' safety publications. For a detailed treatment, get ANSI Z49.1, Safety in Welding, Cutting, and Allied Processes, published by the American Welding Society (AWS), [www.aws.org](http://www.aws.org). Order AWS documents from Global Engineering Documents, [global.ihs.com](http://global.ihs.com). Arcs and sparks can ignite combustible materials. Prevent fires. Refer to NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hotwork. Do not strike an arc on the container. The defect produced by an arc burn may lead to container rupture

Fumes and gases produced during welding and cutting processes can be dangerous to your health and may cause serious lung disease. **KEEP YOUR HEAD OUT OF FUMES. DO NOT BREATHE FUMES AND GASES.** Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes; or may cause other similar discomfort. Contaminants in the air may add to the hazard of fumes and gases

When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc., it is the user's obligation to determine the conditions of safe use of the product

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**NFPA health hazard**

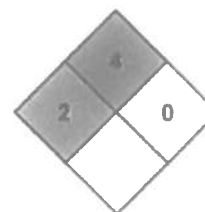
: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

**NFPA fire hazard**

: 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

**NFPA reactivity**

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.





# Propane

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### HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible  
Flammability : 4 Severe Hazard  
Physical : 2 Moderate Hazard

SDS US (GHS HazCom 2012) - Praxair

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*



Nitrogen

By

Praxair

# Nitrogen, compressed

## Safety Data Sheet P-4631

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1980    Revision date: 06/24/2015    Supersedes: 04/23/2015

### SECTION: 1. Product and company identification

#### 1.1. Product identification

Product form : Substance  
 Name : Nitrogen, compressed  
 CAS No : 7727-37-9  
 Formula : N<sub>2</sub>  
 Other means of identification : Dinitrogen, Refrigerant R728, Nitrogen, Medipure Nitrogen, Extendapak Nitrogen, Nitrogen - Diving Grade

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Industrial use  
 Medical applications.  
 Food applications.  
 Diving Gas (Underwater Breathing)

#### 1.3. Details of the supplier of the safety data sheet

Praxair, Inc.  
 39 Old Ridgebury Road  
 Danbury, CT 06810-5113 - USA  
 T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146  
[www.praxair.com](http://www.praxair.com)

#### 1.4. Emergency telephone number

Emergency number : Onsite Emergency: 1-800-645-4633

CHEMTREC, 24hr/day 7days/week — Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887 (collect calls accepted, Contract 17729)

### 2. Hazards identification

#### 2.1. Classification of the substance or mixture

Classification (GHS-US)

Compressed gas : H280

#### 2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS04

Signal word (GHS-US) :

WARNING

Hazard statements (GHS-US) :

H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED  
 OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.

Precautionary statements (GHS-US) :

P202 - Do not handle until all safety precautions have been read and understood  
 P271+P403 - Use and store only outdoors or in a well-ventilated place.  
 CGA-PG05 - Use a back flow preventive device in the piping.  
 CGA-PG10 - Use only with equipment rated for cylinder pressure.  
 CGA-PG06 - Close valve after each use and when empty.  
 CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).

#### 2.3. Other hazards

No additional information available

# Nitrogen, compressed

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### 2.4. Unknown acute toxicity (GHS-US)

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Name : Nitrogen, compressed

CAS No : 7727-37-9

Name	Product Identifier	%
Nitrogen	(CAS No) 7727-37-9	99.5 - 100

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures after inhalation : Immediately remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, qualified personnel may give oxygen. Call a physician.
- First-aid measures after skin contact : Adverse effects not expected from this product.
- First-aid measures after eye contact : Adverse effects not expected from this product. In case of eye irritation: Rinse immediately with plenty of water. Consult an ophthalmologist if irritation persists.
- First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

### 4.2. Most important symptoms and effects, both acute and delayed

No additional information available

### 4.3. Indication of any immediate medical attention and special treatment needed

None.

## SECTION 5: Fire fighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

### 5.2. Special hazards arising from the substance or mixture

Reactivity : Under certain conditions, nitrogen can react violently with lithium, neodymium, titanium (above 1472°F/800°C), and magnesium to form nitrides. At high temperature, it can also combine with oxygen and hydrogen.

### 5.3. Advice for firefighters

- Firefighting instructions : Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.
- Protection during firefighting : Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen.
- Special protective equipment for fire fighters : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
- Specific methods : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.  
  
Stop flow of product if safe to do so.  
  
Use water spray or fog to knock down fire fumes if possible.

## SECTION 6: Accidental release measures

### 6.1. Personal protective equipment and emergency procedures

General measures : Evacuate area. Ensure adequate air ventilation. Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Stop leak if safe to do so.

# Nitrogen, compressed

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- 6.1.1. For non-emergency personnel  
No additional information available
- 6.1.2. For emergency responders  
No additional information available
- 6.2. Environmental precautions  
No additional information available
- 6.3. Methods and material for containment and cleaning up  
No additional information available
- 6.4. Reference to other sections  
See also sections 8 and 13.

### Handling and storage

- 7.1. Precautions for safe handling  
Precautions for safe handling : Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

- Safe use of the product : The suitability of this product as a component in underwater breathing gas mixtures is to be determined by or under the supervision of personnel experienced in the use of underwater breathing gas mixtures and familiar with the physiological effects, methods employed, frequency and duration of use, hazards, side effects, and precautions to be taken.

- 7.2. Conditions for safe storage, including any incompatibilities  
Storage conditions : Store in a cool, well-ventilated place. Store and use with adequate ventilation. Store only where temperature will not exceed 125°F (52°C). Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods.

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

- 7.3. Specific end use(s)  
None.

### SECTION 8: Exposure controls/personal protection

8.1. Control parameters	
<b>Nitrogen, compressed (7727-37-9)</b>	
ACGIH	Not established
USA OSHA	Not established
<b>Nitrogen (7727-37-9)</b>	
ACGIH	Not established
USA OSHA	Not established

# Nitrogen, compressed

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according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

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### 8.2. Exposure controls

- Appropriate engineering controls : Use a local exhaust system with sufficient flow velocity to maintain an adequate supply of air in the worker's breathing zone. Mechanical (general): General exhaust ventilation may be acceptable if it can maintain an adequate supply of air.
- Eye protection : Wear safety glasses with side shields.
- Skin and body protection : Wear metatarsal shoes and work gloves for cylinder handling, and protective clothing where needed. Wear appropriate chemical gloves during cylinder changeout or wherever contact with product is possible. Select per OSHA 29 CFR 1910.132, 1910.136, and 1910.138
- Respiratory protection : When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

- Physical state : Gas
- Appearance : Colorless gas.
- Molecular mass : 28 g/mol
- Color : Colorless.
- Odor : No odor warning properties.
- Odor threshold : No data available
- pH : Not applicable.
- Relative evaporation rate (butyl acetate=1) : No data available
- Relative evaporation rate (ether=1) : Not applicable.
- Melting point : -210 °C
- Freezing point : No data available
- Boiling point : -195.8 °C
- Flash point : No data available
- Critical temperature : -149.9 °C
- Auto-ignition temperature : Not applicable.
- Decomposition temperature : No data available
- Flammability (solid, gas) : No data available
- Vapor pressure : Not applicable.
- Critical pressure : 3390 kPa
- Relative vapor density at 20 °C : No data available
- Relative density : No data available
- Density : 1.16 kg/m<sup>3</sup>
- Relative gas density : 0.97
- Solubility : Water: 20 mg/l
- Log Pow : Not applicable.
- Log Kow : Not applicable.
- Viscosity, kinematic : Not applicable.
- Viscosity, dynamic : Not applicable.
- Explosive properties : Not applicable.
- Oxidizing properties : None.
- Explosion limits : No data available

### 9.2. Other information

- Gas group : Compressed gas
- Additional information : None.

# Nitrogen, compressed

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according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

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### SECTION 10: Stability and reactivity

10.1.	Reactivity	Under certain conditions, nitrogen can react violently with lithium, neodymium, titanium (above 1472°F/800°C), and magnesium to form nitrides. At high temperature, it can also combine with oxygen and hydrogen.
10.2.	Chemical stability	Stable under normal conditions.
10.3.	Possibility of hazardous reactions	May occur.
10.4.	Conditions to avoid	None under recommended storage and handling conditions (see section 7).
10.5.	Incompatible materials	None.
10.6.	Hazardous decomposition products	None.

### SECTION 11: Toxicological information

11.1.	Information on toxicological effects	
Acute toxicity	:	Not classified
Skin corrosion/irritation	:	Not classified pH: Not applicable.
Serious eye damage/irritation	:	Not classified pH: Not applicable.
Respiratory or skin sensitization	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	Not classified
Specific target organ toxicity (repeated exposure)	:	Not classified
Aspiration hazard	:	Not classified

### SECTION 12: Ecological information

12.1.	Toxicology - general	
Ecology - general	:	No ecological damage caused by this product.

#### 12.2. Persistence and degradability

<b>Nitrogen, compressed (7727-37-9)</b>	
Persistence and degradability	No ecological damage caused by this product.
<b>Nitrogen (7727-37-9)</b>	
Persistence and degradability	No ecological damage caused by this product.

#### 12.3. Bioaccumulative potential

<b>Nitrogen, compressed (7727-37-9)</b>	
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.

# Nitrogen, compressed

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<b>Nitrogen (7727-37-9)</b>	
Log Pow	Not applicable for inorganic gases.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.

### 12.4. Mobility in soil

<b>Nitrogen, compressed (7727-37-9)</b>	
Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.

<b>Nitrogen (7727-37-9)</b>	
Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.

### 12.5. Other adverse effects

Effect on ozone layer : None.

Effect on the global warming : None.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

## SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1066 Nitrogen, compressed, 2.2  
 UN-No.(DOT) : UN1066  
 Proper Shipping Name (DOT) : Nitrogen, compressed  
 Transport hazard class(es) (DOT) : 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115  
 Hazard labels (DOT) : 2.2 - Non-flammable gas



### Additional Information

Emergency Response Guide (ERG) Number : 121 (UN1066);120 (UN1977)

Other information : No supplementary information available.

Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers:  
 - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

### Transport by sea

UN-No. (IMDG) : 1066  
 Proper Shipping Name (IMDG) : NITROGEN, COMPRESSED  
 Class (IMDG) : 2 - Gases  
 MFAG-No : 121

### Air transport

UN-No.(IATA) : 1066  
 Proper Shipping Name (IATA) : Nitrogen, compressed

# Nitrogen, compressed

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Class (IATA) : 2  
Civil Aeronautics Law : Gases under pressure/Gases nonflammable nontoxic under pressure

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

<b>Nitrogen, compressed (7727-37-9)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Sudden release of pressure hazard

#### 15.2. International regulations

##### CANADA

<b>Nitrogen, compressed (7727-37-9)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>Nitrogen (7727-37-9)</b>	
Listed on the Canadian DSL (Domestic Substances List)	

##### EU-Regulations

<b>Nitrogen, compressed (7727-37-9)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	

#### 15.2.2. National regulations

<b>Nitrogen, compressed (7727-37-9)</b>	
Listed on the AICS (Australian Inventory of Chemical Substances)	
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)	
Listed on the Korean ECL (Existing Chemicals List)	
Listed on NZIoC (New Zealand Inventory of Chemicals)	
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)	

#### 15.3. US State regulations

<b>Nitrogen, compressed(7727-37-9)</b>	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

<b>Nitrogen (7727-37-9)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
No	No	No	No	

<b>Nitrogen (7727-37-9)</b>				
U.S. - Massachusetts - Right To Know List				
U.S. - New Jersey - Right to Know Hazardous Substance List				
U.S. - Pennsylvania - RTK (Right to Know) List				



# Nitrogen, compressed

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### SECTION 16: Other information

Revision date : 6/24/2015 12:00:00 AM  
 Other information : When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.

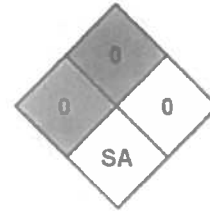
Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc., it is the user's obligation to determine the conditions of safe use of the product.

Praxair SDSs are furnished on sale or delivery by Praxair or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your Praxair sales representative, local distributor, or supplier, or download from [www.praxair.com](http://www.praxair.com). If you have questions regarding Praxair SDSs, would like the document number and date of the latest SDS, or would like the names of the Praxair suppliers in your area, phone or write the Praxair Call Center (Phone: 1-800-PRAXAIR/1-800-772-9247; Address: Praxair Call Center, Praxair, Inc., P.O. Box 44, Tonawanda, NY 14151-0044).

PRAXAIR and the Flowing Airstream design are trademarks or registered trademarks of Praxair Technology, Inc. in the United States and/or other countries.

NFPA health hazard : 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.  
 NFPA fire hazard : 0 - Materials that will not burn.  
 NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.  
 NFPA specific hazard : SA - This denotes gases which are simple asphyxiants.



HMIS III Rating  
 Health : 0 Minimal Hazard - No significant risk to health  
 Flammability : 0 Minimal Hazard  
 Physical : 3 Serious Hazard

SDS US (GHS HazCom 2012) - Praxair

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

Butane

By

Praxair

# Butane n-

## Safety Data Sheet P-4572

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.  
 Date of issue: 01/01/1981    Revision date: 01/15/2015    Supersedes: 05/01/2009

### SECTION 1: Product and company identification

#### 1.1. Product identifier

Product form : Substance  
 Name : Butane n-  
 CAS No : 106-97-8  
 Formula : C4H10

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Industrial use. Use as directed.

#### 1.3. Details of the supplier of the safety data sheet

Praxair, Inc.  
 39 Old Ridgebury Road  
 Danbury, CT 06810-5113 - USA  
 T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146  
[www.praxair.com](http://www.praxair.com)

#### 1.4. Emergency telephone number

Emergency number : Onsite Emergency: 1-800-645-4633

CHEMTREC, 24hr/day 7days/week — Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887 (collect calls accepted, Contract 17729)

### SECTION 2: Hazards Identification

#### 2.1. Classification of the substance or mixture

Classification (GHS-US)

Flam. Gas 1 H220

Liquefied gas H280

Full text of H-phrases: see section 16

#### 2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS02

GHS04

Signal word (GHS-US) :

DANGER

Hazard statements (GHS-US) :

H220 - EXTREMELY FLAMMABLE GAS  
 H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED  
 OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.  
 CGA-HG04 - MAY FORM EXPLOSIVE MIXTURES WITH AIR  
 CGA-HG01 - MAY CAUSE FROSTBITE.

Precautionary statements (GHS-US) :

P202 - Do not handle until all safety precautions have been read and understood  
 P210 - Keep away from Open flames, heat, sparks, hot surfaces. - No smoking  
 P271+P403 - Use and store only outdoors or in a well-ventilated place.  
 P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely  
 P381 - Eliminate all ignition sources if safe to do so  
 CGA-PG05 - Use a back flow preventive device in the piping.  
 CGA-PG12 - Do not open valve until connected to equipment prepared for use.  
 CGA-PG06 - Close valve after each use and when empty.  
 CGA-PG11 - Never put cylinders into unventilated areas of passenger vehicles.  
 CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).

# Butane n-

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### 2.3. Other hazards

Other hazards not contributing to the classification : None.

### 2.4. Unknown acute toxicity (GHS-US)

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Name	Product Identifier	%
Butane n- (Main constituent)	(CAS No) 106-97-8	100

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures after inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
- First-aid measures after skin contact : For exposure to liquid, immediately warm frostbite area with warm water not to exceed 105°F (41°C). Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal coloring and sensation have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water. Seek medical evaluation and treatment as soon as possible. Adverse effects not expected from this product.
- First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Get immediate medical attention.
- First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

### 4.2. Most important symptoms and effects both acute and delayed

No additional information available

### 4.3. Indication of any immediate medical attention and special treatment needed

None.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide, Dry chemical, Water spray or fog.

### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : EXTREMELY FLAMMABLE GAS. If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.
- Explosion hazard : EXTREMELY FLAMMABLE GAS. Forms explosive mixtures with air and oxidizing agents.
- Reactivity : No reactivity hazard other than the effects described in sub-sections below.

### 5.3. Advice for firefighters

- Firefighting instructions : Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.
- Protection during firefighting : Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen.
- Special protective equipment for fire fighters : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.

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**Specific methods** : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.

Stop flow of product if safe to do so.

Use water spray or fog to knock down fire fumes if possible.

Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

**General measures** : Evacuate area. Ensure adequate air ventilation. Eliminate ignition sources. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Consider the risk of potentially explosive atmospheres. Try to stop release. Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Evacuate area. Ensure adequate ventilation. Stop leak if safe to do so.

6.1.1. For non-emergency personnel : No additional information available

6.1.2. For emergency responders : No additional information available

6.2. Environmental precautions : Try to stop release. Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

6.3. Methods and material for containment and cleaning up : No additional information available

6.4. Reference to other sections : See also sections 8 and 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

**Precautions for safe handling** : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment.

Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

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## 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store only where temperature will not exceed 125°F (52°C). Post "No Smoking or Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g., NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16.

**OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE:** When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

## 7.3. Specific end use(s)

None.

## SECTION 8: Exposure control / personal protection

### 8.1. Control parameters

Butane n- (106-97-8)		
ACGIH	ACGIH TLV-STEL (ppm)	1000 ppm
USA OSHA	Not established	

### 8.2. Exposure controls

Appropriate engineering controls : An explosion-proof local exhaust system is acceptable. Local exhaust and general ventilation must be adequate to meet exposure standards. Mechanic (general) engineering controls: Use only in a closed system. Closed system, ventilation, explosion-proof electrical equipment and lighting.

Eye protection : Wear safety glasses with side shields or goggles when transfilling or breaking transfer connections. Wear safety glasses with side shields.

Thermal hazard protection : Wear cold insulating gloves when transfilling or breaking transfer connections. None necessary.

Other information : Wear safety shoes while handling containers. Consider the use of flame resistant anti-static safety clothing. Wear leather safety gloves and safety shoes when handling cylinders.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Colorless gas.
Molecular mass	: 58 g/mol
Color	: Colorless.
Odor	: No data available
Odor threshold	: 5000 ppm
pH	: Not applicable.
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: -138 °C
Freezing point	: No data available
Boiling point	: -0.5 °C
Flash point	: -60 °C TCC
Critical temperature	: 152.4 °C

# Butane n-

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Auto-ignition temperature	: 400 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: 200 kPa
Critical pressure	: 3796 kPa
Relative vapor density at 20 °C	: No data available
Relative density	: 0.6
Specific gravity / density	: 0.573 g/cm <sup>3</sup> (at 25 °C)
Relative gas density	: 2.1
Solubility	: Water: 88 mg/l
Log Pow	: 2.89
Log Kow	: Not applicable.
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Explosive properties	: Not applicable.
Oxidizing properties	: None.
Explosive limits	: 1.4 - 9.4 vol %

### 9.2. Other information

Gas group	: Liquefied gas
Additional information	: Gas/vapor heavier than air. May accumulate in confined spaces, particularly at or below ground level.

## SECTION 10: Stability and reactivity

10.1. Reactivity	No reactivity hazard other than the effects described in sub-sections below.
10.2. Chemical stability	Stable under normal conditions.
10.3. Possibility of hazardous reactions	Can form explosive mixture with air. May react violently with oxidants.
10.4. Conditions to avoid	Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
10.5. Incompatible materials	Oxidizing agent, Nickel carbonyl, Oxygen Mixtures.
10.6. Hazardous decomposition products	Thermal decomposition or burning may produce carbon monoxide, carbon dioxide, and hydrogen. The welding and cutting process may form reaction products such as carbon monoxide and carbon dioxide. Other decomposition products of normal operation originate from the volatilization, reaction, or oxidation of the material being worked.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

Butane n- ( f )106-97-8	
LC50 inhalation rat (mg/l)	658 g/m <sup>3</sup> (Exposure time: 4 h)
ATE US (vapors)	658.000 mg/l/4h
ATE US (dust, mist)	658.000 mg/l/4h

Skin corrosion/irritation : Not classified  
pH: Not applicable.

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according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.  
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Serious eye damage/irritation	:	Not classified pH: Not applicable.
Respiratory or skin sensitization	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	Not classified
Specific target organ toxicity (repeated exposure)	:	Not classified No known effects from this product.
Aspiration hazard	:	Not classified Not applicable.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : No ecological damage caused by this product.

### 12.2. Persistence and degradability

#### Butane n- (106-97-8)

Persistence and degradability	The substance is biodegradable. Unlikely to persist.
-------------------------------	--

### 12.3. Bioaccumulative potential

#### Butane n- (106-97-8)

Log Pow	2.89
Log Kow	Not applicable.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.

### 12.4. Mobility in soil

#### Butane n- (106-97-8)

Mobility in soil	No data available.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

### 12.5. Other adverse effects

Effect on ozone layer : None.  
Effect on the global warming : No known effects from this product.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

## SECTION 14: Transport information

In accordance with DOT

Transport document description	:	UN1011 Butane, 2.1
UN-No.(DOT)	:	UN1011
Proper Shipping Name (DOT)	:	Butane
Department of Transportation (DOT) Hazard Classes	:	2.1 - Class 2.1 - Flammable gas 49 CFR 173.115



# Butane n-

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Hazard labels (DOT) : 2.1 - Flammable gas



DOT Special Provisions (49 CFR 172.102) : 19 - For domestic transportation only, the identification number UN1075 may be used in place of the identification number specified in column (4) of the 172.101 table. The identification number used must be consistent on package markings, shipping papers and emergency response information.  
T50 - When portable tank instruction T50 is referenced in Column (7) of the 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of 173.313 of this subchapter.

### Additional information

Emergency Response Guide (ERG) Number : 115 (UN1011)

Other information : No supplementary information available.

Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers:  
- Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

### Transport by sea

UN-No. (IMDG) : 1011  
Proper Shipping Name (IMDG) : BUTANE  
Class (IMDG) : 2 - Gases  
MFAG-No : 115

### Air transport

UN-No.(IATA) : 1011  
Proper Shipping Name (IATA) : Butane  
Class (IATA) : 2  
Civil Aeronautics Law : Gases under pressure/Gases flammable under pressure

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

<b>Butane n- (106-97-8)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Sudden release of pressure hazard Fire hazard

### 15.2 International regulations

#### CANADA

<b>Butane n- (106-97-8)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas

### EU Regulations

<b>Butane n- (106-97-8)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	

EN (English US)

SDS ID: P-4572

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# Butane n-

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Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flam. Gas 1 H220  
Liquefied gas H280

Full text of H-phrases: see section 16

### 15.2.2. National regulations

Butane n- (106-97-8)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)

### 15.3. US State regulations

Butane n-(106-97-8)	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: Other information

Revision date : 1/15/2015 12:00:00 AM

# Butane n-

## Safety Data Sheet P-4572

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.  
Date of issue: 01/01/1981 Revision date: 01/15/2015 Supersedes: 05/01/2009

### Other information

: When using this product in welding and cutting, read and understand the manufacturer's instructions and the precautionary label on the product. Ask your welding products supplier for a copy of Praxair's free safety booklet, P-2035, Precautions and Safe Practices for Gas Welding, Cutting, and Heating, and for other manufacturers' safety publications. For a detailed treatment, get ANSI Z49.1, Safety in Welding, Cutting, and Allied Processes, published by the American Welding Society (AWS), [www.aws.org](http://www.aws.org). Order AWS documents from Global Engineering Documents, [global.ihc.com](http://global.ihc.com). Arcs and sparks can ignite combustible materials. Prevent fires. Refer to NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hotwork. Do not strike an arc on the container. The defect produced by an arc burn may lead to container rupture.

Fumes and gases produced during welding and cutting processes can be dangerous to your health and may cause serious lung disease. **KEEP YOUR HEAD OUT OF FUMES. DO NOT BREATHE FUMES AND GASES.** Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes; or may cause other similar discomfort. Contaminants in the air may add to the hazard of fumes and gases.

When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc., it is the user's obligation to determine the conditions of safe use of the product.

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### Full text of H-phrases:

Flam. Gas 1	Flammable gases Category 1
Liquefied gas	Gases under pressure Liquefied gas
H220	EXTREMELY FLAMMABLE GAS
H280	CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED

### NFPA health hazard

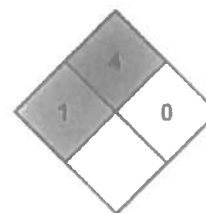
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

### NFPA fire hazard

: 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

### NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.





# Butane n-

## Safety Data Sheet P-4572

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1981    Revision date: 01/15/2015    Supersedes: 05/01/2009

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### HMIS III Rating

Health : 0 Minimal Hazard - No significant risk to health  
Flammability : 4 Severe Hazard  
Physical : 1 Slight Hazard

SDS US (GHS HazCom 2012) - Praxair

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

Acetylene

By

Matheson



**MATHESON**

ask...The Gas Professionals™

## Safety Data Sheet

Material Name: ACETYLENE, DISSOLVED

SDS ID: MAT00280

### \*\*\* Section 1 - PRODUCT AND COMPANY IDENTIFICATION\*\*\*

**Product Identifier:** ACETYLENE, DISSOLVED

#### Manufacturer Information

MATHESON TRI-GAS, INC.  
150 Allen Road, Suite 302  
Basking Ridge, NJ 07920

General Information: 1-800-416-2505  
Emergency #: 1-800-424-9300 (CHEMTREC)  
Outside the US: 703-527-3887 (Call collect)

#### Chemical Family

hydrocarbons, aliphatic

#### Synonyms

MTG MSDS 1; ACETYLENE; ETHYNE; WELDING GAS; ACETYLEN; ETHINE; NARCYLEN; VINYLENE; UN 1001; C2H2; RTECS: AO9600000

### \*\*\* Section 2 - HAZARDS IDENTIFICATION\*\*\*

#### EMERGENCY OVERVIEW

**Color:** colorless

**Physical Form:** gas

**Odor:** sweet odor

**Health Hazards:** central nervous system depression, difficulty breathing

**Physical Hazards:** May explode when heated. Flammable gas. May cause flash fire. Electrostatic charges may be generated by flow, agitation, etc. May polymerize. Containers may rupture or explode.

#### POTENTIAL HEALTH EFFECTS

##### Inhalation

**Short Term:** nausea, vomiting, chest pain, wheezing, headache, drowsiness, dizziness, loss of coordination, bluish skin color, suffocation, lung congestion, coma

**Long Term:** no information on significant adverse effects

##### Skin

**Short Term:** rash

**Long Term:** no information is available

##### Eye

**Short Term:** no information on significant adverse effects

**Long Term:** no information is available

##### Ingestion

**Short Term:** ingestion of a gas is unlikely

**Long Term:** ingestion of a gas is unlikely

### \*\*\* Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS\*\*\*

CAS	Component	Percent
74-86-2	ACETYLENE, DISSOLVED	100

# Safety Data Sheet

Material Name: ACETYLENE, DISSOLVED

SDS ID: MAT00280

## \*\*\* Section 4 - FIRST AID MEASURES\*\*\*

### Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

### Skin

Wash exposed skin with soap and water.

### Eyes

Flush eyes with plenty of water.

### Ingestion

If a large amount is swallowed, get medical attention.

### Note to Physicians

For inhalation, consider oxygen.

## \*\*\* Section 5 - FIRE FIGHTING MEASURES\*\*\*

See Section 9 for Flammability Properties

**NFPA Ratings: Health: 1 Fire: 4 Reactivity: 3**

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

### Flammable Properties

Severe explosion hazard. Vapor/air mixtures are explosive. Electrostatic discharges may be generated by flow or agitation resulting in ignition or explosion.

### Extinguishing Media

carbon dioxide, regular dry chemical

Large fires: Use regular foam or flood with fine water spray.

### Fire Fighting Measures

Move container from fire area if it can be done without risk. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Stop leak if possible without personal risk. Let burn unless leak can be stopped immediately. For smaller tanks or cylinders, extinguish and isolate from other flammables. Evacuation radius: 800 meters (1/2 mile). Do not attempt to extinguish fire unless flow of material can be stopped first. Flood with fine water spray. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Evacuate if fire gets out of control or containers are directly exposed to fire. Evacuation radius: 500 meters (1/3 mile). Consider downwind evacuation if material is leaking. Stop flow of gas.

## \*\*\* Section 6 - ACCIDENTAL RELEASE MEASURES\*\*\*

### Occupational spill/release

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition. Ventilate closed spaces before entering.

# Safety Data Sheet

Material Name: ACETYLENE, DISSOLVED

SDS ID: MAT00280

## \*\*\* Section 7 - HANDLING AND STORAGE\*\*\*

### Storage Procedures

Store and handle in accordance with all current regulations and standards. Protect from physical damage. Store outside or in a detached building. Keep separated from incompatible substances. Store in a cool, dry place. Store in a well-ventilated area. Avoid heat, flames, sparks and other sources of ignition. Grounding and bonding required. Secure to prevent tipping. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.

## \*\*\* Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION\*\*\*

### Component Analysis

ACETYLENE, DISSOLVED (74-86-2)

NIOSH: 2500 ppm Ceiling; 2662 mg/m3 Ceiling

### Component Biological Limit Values

There are no biological limit values for any of this product's components.

### Ventilation

Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

## PERSONAL PROTECTIVE EQUIPMENT

### Eyes/Face

Eye protection not required, but recommended.

### Protective Clothing

Protective clothing is not required.

### Glove Recommendations

Protective gloves are not required, but recommended.

### Respiratory Protection

Under conditions of frequent use or heavy exposure, respiratory protection may be needed.

Respiratory protection is ranked in order from minimum to maximum.

Consider warning properties before use.

#### For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

## \*\*\* Section 9 - PHYSICAL AND CHEMICAL PROPERTIES\*\*\*



# Safety Data Sheet

Material Name: ACETYLENE, DISSOLVED

SDS ID: MAT00280

<b>Physical State:</b> Gas	<b>Appearance:</b> Not available
<b>Color:</b> colorless	<b>Physical Form:</b> gas
<b>Odor:</b> sweet odor	<b>Odor Threshold:</b> Not available
<b>pH:</b> Not available	<b>Melting/Freezing Point:</b> Not available
<b>Boiling Point:</b> Not available	<b>Decomposition:</b> Not available
<b>Evaporation Rate:</b> Not available	<b>LEL:</b> 2.5 %
<b>UEL:</b> 100 %	<b>Vapor Pressure:</b> 760 mmHg @ -84 °C
<b>Henry's Law Constant:</b> 0.00277024 atm-m <sup>3</sup> /mol	<b>Vapor Density (air = 1):</b> 0.90
<b>Density:</b> 1.1747 g/L @ 0 °C	<b>Water Solubility:</b> 0.94 % @ 25 °C
<b>KOW:</b> 2691.53 estimated from water solubility, estimated from water solubility	<b>Log KOW:</b> Not available
<b>KOC:</b> 4508.17 estimated from water solubility, estimated from water solubility	<b>Auto Ignition:</b> 305 °C
<b>Viscosity:</b> 0.010 cP @20 °C	<b>Sublimation Point:</b> -84 °C
<b>Molecular Weight:</b> 26.04	<b>Molecular Formula:</b> H-C-C-H

## Solvent Solubility

**Soluble:** acetone, benzene, chloroform, ether

## \*\*\* Section 10 - STABILITY AND REACTIVITY\*\*\*

### Chemical Stability

May decompose violently on heating. May explode when heated.

### Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

### Materials to Avoid

metals, halogens, oxidizing materials, metal carbide, reducing agents, halo carbons

### Decomposition Products

oxides of carbon

### Possibility of Hazardous Reactions

Polymerizes with evolution of heat. Avoid contact with curing agents, accelerators, and/or initiators.

## \*\*\* Section 11 - TOXICOLOGICAL INFORMATION\*\*\*

### Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and no selected endpoints have been identified.

### Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, OSHA or DFG.

### Target Organs

**ACETYLENE, DISSOLVED (74-86-2)**

central nervous system

### Additional Data

Stimulants such as epinephrine may induce ventricular fibrillation.

# Safety Data Sheet

Material Name: ACETYLENE, DISSOLVED

SDS ID: MAT00280

## \*\*\* Section 12 - ECOLOGICAL INFORMATION\*\*\*

### Component Analysis - Aquatic Toxicity

No LOLI ecotoxicity data are available for this product's components.

## \*\*\* Section 13 - DISPOSAL CONSIDERATIONS\*\*\*

### Disposal Methods

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001. D003.

### Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

## \*\*\* Section 14 - TRANSPORT INFORMATION\*\*\*

### US DOT Information

Shipping Name: Acetylene, dissolved  
UN/NA #: UN1001 Hazard Class: 2.1  
Required Label(s): 2.1

### TDG Information

Shipping Name: Acetylene, dissolved  
UN #: UN1001 Hazard Class: 2.1  
Required Label(s): 2.1

## \*\*\* Section 15 - REGULATORY INFORMATION\*\*\*

### U.S. Federal Regulations

None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

### SARA 311/312

Acute Health: Yes Chronic Health: No Fire: Yes Pressure: Yes Reactive: Yes

### U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
ACETYLENE, DISSOLVED	74-86-2	Yes	Yes	Yes	Yes	Yes

Not regulated under California Proposition 65

### Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
ACETYLENE, DISSOLVED	74-86-2	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes

# Safety Data Sheet

Material Name: ACETYLENE, DISSOLVED

SDS ID: MAT00280

## \*\*\* Section 16 - OTHER INFORMATION\*\*\*

### Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

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End of Sheet MAT00280

SAFETY

Ear Plug – 1100 Series

By

3M



## Article Information Sheet

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<b>Document Group:</b>	09-0558-8	<b>Version Number:</b>	1.01
<b>Issue Date:</b>	12/09/13	<b>Supersedes Date:</b>	12/06/13

### SECTION 1: Identification

#### 1.1. Product identifier

Brazil Polyurethane Ear Plug - 1100 Series

#### Product Identification Numbers

70-0704-0630-4, 70-0714-8743-6, 70-0715-7777-2, 70-0716-1410-4, 70-0716-4762-5, 70-0716-5105-6, HC-0006-2574-5, HO-0021-0895-8

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Hearing Protection

#### 1.3. Supplier's details

**MANUFACTURER:** 3M  
**DIVISION:** Personal Safety Division

**ADDRESS:** 3M Center, St. Paul, MN 55144-1000, USA  
**Telephone:** 1-888-3M HELPS (1-888-364-3577)

#### 1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

### SECTION 2: Hazard identification

This product is exempt from hazard classification according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
------------	------------	---------

Foamed Polyurethane	Unknown	100
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## SECTION 4: First aid measures

### 4.1. Description of first aid measures

**Inhalation:**

No need for first aid is anticipated.

**Skin Contact:**

No need for first aid is anticipated.

**Eye Contact:**

No need for first aid is anticipated.

**If Swallowed:**

No need for first aid is anticipated.

## SECTION 5: Fire-fighting measures

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Not applicable.

### 6.2. Environmental precautions

Not applicable.

### 6.3. Methods and material for containment and cleaning up

Not applicable.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions.

### 7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

## SECTION 8: Exposure controls/personal protection

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions. No engineering controls or personal protective equipment (PPE) are necessary.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

General Physical Form: Solid

<b>Odor, Color, Grade:</b>	Odorless, orange foam ear plug or ear plug cap.
<b>Odor threshold</b>	<i>Not Applicable</i>
<b>pH</b>	<i>Not Applicable</i>
<b>Melting point</b>	<i>Not Applicable</i>
<b>Boiling Point</b>	<i>Not Applicable</i>
<b>Flash Point</b>	<i>Not Applicable</i>
<b>Evaporation rate</b>	<i>Not Applicable</i>
<b>Flammability (solid, gas)</b>	Not Classified
<b>Flammable Limits(LEL)</b>	<i>Not Applicable</i>
<b>Flammable Limits(UEL)</b>	<i>Not Applicable</i>
<b>Vapor Pressure</b>	<i>Not Applicable</i>
<b>Vapor Density</b>	<i>Not Applicable</i>
<b>Specific Gravity</b>	<i>No Data Available</i>
<b>Solubility in Water</b>	Nil
<b>Solubility- non-water</b>	<i>Not Applicable</i>
<b>Partition coefficient: n-octanol/ water</b>	<i>No Data Available</i>
<b>Autoignition temperature</b>	<i>Not Applicable</i>
<b>Decomposition temperature</b>	<i>Not Applicable</i>
<b>Viscosity</b>	<i>Not Applicable</i>
<b>Volatile Organic Compounds</b>	<i>Not Applicable</i>
<b>Percent volatile</b>	<i>Not Applicable</i>
<b>VOC Less H2O &amp; Exempt Solvents</b>	<i>Not Applicable</i>

## SECTION 10: Stability and reactivity

This material is considered to be non reactive under normal use conditions.

## SECTION 11: Toxicological information

### Inhalation:

No health effects are expected

### Skin Contact:

No health effects are expected

### Eye Contact:

No health effects are expected

### Ingestion:

No health effects are expected

### Additional Information:

This product, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.

## SECTION 12: Ecological information



This article is expected to present a low environmental risk either because use and disposal are unlikely to result in a significant release of components to the environment or because those components that may be released are expected to have insignificant environmental impact.

### SECTION 13: Disposal considerations

Dispose of contents/container in accordance with the local/regional/national/international regulations.

### SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

### SECTION 15: Regulatory information

#### Chemical Inventories

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory requirements.

### SECTION 16: Other information

#### NFPA Hazard Classification

Health: 0 Flammability: 0 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

#### HMIS Hazard Classification

Health: 0 Flammability: 0 Physical Hazard: 0 Personal Protection: X - See PPE section.

Hazardous Material Identification System (HMIS® III) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® III ratings are to be used with a fully implemented HMIS® III program. HMIS® is a registered mark of the American Coatings Association (ACA).

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directly from 3M

Collyrium Eye Wash

By

Bausch & Lomb

## Safety Data Sheet

### Section 1: Identification

#### Product identifier

- Product Name** • Collyrium Eye Wash for Fresh Eyes
- Product Code** • 620738G; FCP-4152
- Product Description** • Eye wash.

#### Relevant identified uses of the substance or mixture and uses advised against

- Recommended use** • Collyrium eye wash cleanses the eye to help relieve irritation by removing loose foreign material, air pollutants (smog or pollen), or chlorinated water.
- Restrictions on use** • Use in accordance with product literature.

#### Details of the supplier of the safety data sheet

- Manufacturer** • Bausch & Lomb, Inc  
1400 North Goodman Street  
Rochester, NY 14609  
United States  
bausch.com
- Telephone (General)** • 1-800-553-5340

#### Emergency telephone number

- Manufacturer** • 1-800-535-5053 - Infotrac

### Section 2: Hazard Identification

#### UN GHS

According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

#### Classification of the substance or mixture

- UN GHS** • Classification criteria not met

#### Label elements

**UN GHS**

#### Precautionary statements

- Storage/Disposal** • Keep tightly closed. Store at room temperature 15-25°C (59-77°F), to maintain product integrity. Use before date marked on carton and/or container.

#### Other hazards

- UN GHS** • No data available

## Section 3 - Composition/Information on Ingredients

### Substances

- Material does not meet the criteria of a substance.

### Mixtures

Composition			
Chemical Name	Identifiers	%	Classifications According to Regulation/Directive
Benzalkonium chloride	CAS:68391-01-5 EINECS:269-919-4	0.01%	UN GHS: not classified
Boric acid	CAS:10043-35-3 EINECS:233-139-2	< 1%	UN GHS: Skin Irrit. 2; Eye Irrit. 2A; Acute Tox. Oral 5; Repr. 1
Purified water	CAS:7732-18-5 EINECS:231-791-2	> 98%	UN GHS: not classified
Sodium borate	CAS:1303-96-4	< 1%	UN GHS: Skin Irrit. 2; Eye Irrit. 2A; Acute Tox. Oral 5; Repr. 2
Sodium chloride	CAS:7647-14-5 EINECS:231-598-3	< 1%	UN GHS: Skin Irrit. 2; Eye Irrit. 2A; Acute Tox. Oral 5

The exact percentage of composition has been withheld as a trade secret.

## Section 4: First-Aid Measures

### Description of first aid measures

#### Inhalation

- No specific treatment is necessary since this material is not likely to be hazardous by inhalation. If exposed to excessive levels of mists, remove to fresh air and get medical attention.

#### Skin

- No specific treatment is necessary since this material is not likely to be hazardous by contact with the skin or mucous membranes.

#### Eye

- No specific treatment is necessary since this material is not irritating to the eye.

#### Ingestion

- No specific treatment is necessary since this material is not likely to be hazardous by ingestion. If large quantities are accidentally ingested (greater than a tablespoon), get medical attention immediately.

### Most important symptoms and effects, both acute and delayed

- No data available

### Indication of any immediate medical attention and special treatment needed

## Section 5: Fire-Fighting Measures

### Extinguishing media

**Suitable Extinguishing Media** ● Water spray, carbon dioxide, dry chemical powder or appropriate foam for surrounding fire.

**Unsuitable Extinguishing Media** ● No data available

### Special hazards arising from the substance or mixture

**Unusual Fire and Explosion Hazards** ● None known - product is not flammable or combustible.

**Hazardous Combustion Products** ● No data available

**Advice for firefighters**

- As in any fire, wear self-contained breathing apparatus and full protective gear to prevent contact with skin and eyes.

**Section 6 - Accidental Release Measures****Personal precautions, protective equipment and emergency procedures****Personal Precautions**

- No special controls or personal protection required under conditions of intended use. In the event of bulk spills, wear suitable protective eyewear, clothing, protective boots and protective gloves. Refer to Section 8.

**Emergency Procedures**

- No emergency procedures are expected to be necessary when used in accordance with product literature.

**Environmental precautions**

- No data available

**Methods and material for containment and cleaning up****Containment/Clean-up Measures**

- Contain spilled product. For small spills, add suitable absorbent material. Scoop up and place in an appropriate liquid-tight container equipped with a tight cover for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate, liquid-tight container equipped with a tight cover for disposal.

**Section 7 - Handling and Storage****Precautions for safe handling****Handling**

- No special handling is required. Refer to Section 8. Use only in accordance with product literature.

**Conditions for safe storage, including any incompatibilities****Storage**

- Keep tightly closed. Store at room temperature 15-30°C (59-86°F), to maintain product integrity. Use before expiration date marked on carton and/or container.

**Section 8 - Exposure Controls/Personal Protection****Control parameters****Exposure Limits/Guidelines**

- Refer to the occupational exposure limits / guidelines for the individual product components.

Exposure Limits/Guidelines				
	Result	ACGIH	Canada Quebec	NIOSH
Sodium borate (1303-96-4)	TWAs	2 mg/m <sup>3</sup> TWA (inhalable fraction, listed under Borate compounds, inorganic)	5 mg/m <sup>3</sup> TWAEV	5 mg/m <sup>3</sup> TWA
	STELs	6 mg/m <sup>3</sup> STEL (inhalable fraction, listed under Borate compounds, inorganic)	Not established	Not established
Boric acid (10043-35-3)	STELs	6 mg/m <sup>3</sup> STEL (inhalable fraction, listed under Borate compounds, inorganic)	Not established	Not established
	TWAs	2 mg/m <sup>3</sup> TWA (inhalable fraction, listed under Borate compounds, inorganic)	Not established	Not established

**Exposure controls**

**Engineering Measures/Controls**

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Personal Protective Equipment****Respiratory**

- No respiratory protection required during normal handling.

**Eye/Face**

- No eye protection is required during normal handling.

**Hands**

- Gloves are not required under normal handling conditions.

**Skin/Body**

- No special personal protection required under conditions of intended use. In the event of a bulk spill, wear appropriate protective clothing.

**Environmental Exposure Controls**

- No data available

**Section 9 - Physical and Chemical Properties****Information on Physical and Chemical Properties**

<b>Material Description</b>			
Physical Form	Liquid	Color	Clear Colorless
Odor	No odor.	Odor Threshold	Not relevant
<b>General Properties</b>			
Boiling Point	Not relevant	Melting Point	Not relevant
Decomposition Temperature	Not relevant	pH	7 to 7.8
Specific Gravity/Relative Density	= 1.006	Water Solubility	Not relevant
Viscosity	Not relevant		
<b>Volatility</b>			
Vapor Pressure	Not relevant	Vapor Density	Not relevant
Evaporation Rate	Not relevant		
<b>Flammability</b>			
Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant	Autoignition	Not relevant
Flammability (solid, gas)	Not relevant		
<b>Environmental</b>			
Octanol/Water Partition coefficient	Not relevant		

**Section 10: Stability and Reactivity****Reactivity**

- No dangerous reactions known.

**Chemical stability**

- Stable under normal temperatures and pressures.

**Possibility of hazardous reactions**

- No data available

**Conditions to avoid**

- Extreme heat or cold. Do not freeze.

**Incompatible materials**

- None.

**Hazardous decomposition products**

- None expected.

**Section 11 - Toxicological Information****Information on toxicological effects**

**Other Material Information** • Toxicological information refers to raw materials only. Concentrations and toxicological effects are substantially reduced in the product.

Components		
Boric acid (< 1%)	10043-35-3	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 2660 mg/kg
Sodium borate (< 1%)	1303-96-4	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 2660 mg/kg
Sodium chloride (< 1%)	7647-14-5	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 3000 mg/kg

GHS Properties	Classification
Acute toxicity	UN GHS • Classification criteria not met
Aspiration Hazard	UN GHS • Classification criteria not met
Carcinogenicity	UN GHS • Classification criteria not met
Germ Cell Mutagenicity	UN GHS • Classification criteria not met
Skin corrosion/Irritation	UN GHS • Classification criteria not met
Skin sensitization	UN GHS • Classification criteria not met
TOT-RE	UN GHS • Classification criteria not met
STOT-SE	UN GHS • Classification criteria not met
Toxicity for Reproduction	UN GHS • Classification criteria not met
Respiratory sensitization	UN GHS • Classification criteria not met
Serious eye damage/Irritation	UN GHS • Classification criteria not met

**Potential Health Effects****Inhalation**

- Acute (Immediate)** • Under normal conditions of use, no health effects are expected.
- Chronic (Delayed)** • Under normal conditions of use, no health effects are expected.

**Skin**

- Acute (Immediate)** • Under normal conditions of use, no health effects are expected.
- Chronic (Delayed)** • Under normal conditions of use, no health effects are expected.

**Eye**

- Acute (Immediate)** • Under normal conditions of use, no health effects are expected.
- Chronic (Delayed)** • Under normal conditions of use, no health effects are expected.

**Ingestion**

- Acute (Immediate)** • Under normal conditions of use, no health effects are expected.
- Chronic (Delayed)** • Under normal conditions of use, no health effects are expected.

**Other**

- Acute (Immediate)** • Under normal conditions of use, no health effects are expected.
- Chronic (Delayed)** • Under normal conditions of use, no health effects are expected.



**Carcinogenic Effects**

	CAS	NTP
Boric acid	10043-35-3	Evidence of Carcinogenicity

**Section 12 - Ecological Information****Toxicity**

- This material has not been tested for environmental effects.

**Persistence and degradability**

- No data available

**Bioaccumulative potential**

- No data available

**Mobility in Soil**

- No data available

**Other adverse effects****Section 13 - Disposal Considerations****Waste treatment methods****Product waste**

- Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

**Packaging waste**

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Section 14 - Transport Information**

	UN number	UN proper shipping name	Transport hazard class (es)	Packing group	Environmental hazards
DOT	NDA	Not regulated	NDA	NDA	NDA
TDG	NDA	Not regulated	NDA	NDA	NDA
IMO/IMDG	NDA	NDA	NDA	NDA	NDA
ADN	NDA	NDA	NDA	NDA	NDA
ADR/RID	NDA	NDA	NDA	NDA	NDA
IATA/ICAO	NDA	Not regulated	NDA	NDA	NDA

**Special precautions for user** • No data available

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** • No data available

**Section 15 - Regulatory Information****Safety, health and environmental regulations/legislation specific for the substance or mixture**

**SARA Hazard Classifications** • No data available

Inventory				
Component	CAS	Canada DSL	EU EINECS	TSCA
Sodium borate	1303-96-4	Yes	No	Yes
Boric acid	10043-35-3	Yes	Yes	Yes
Benzalkonium chloride	68391-01-5	Yes	Yes	Yes
Purified water	7732-18-5	Yes	Yes	Yes
Sodium chloride	7647-14-5	Yes	Yes	Yes

## Canada

### Labor

#### Canada - WHMIS - Classifications of Substances

• Sodium borate	1303-96-4	D2B
• Benzalkonium chloride	68391-01-5	Not Listed
• Sodium chloride	7647-14-5	Uncontrolled product according to WHMIS classification criteria
• Boric acid	10043-35-3	D2A
• Purified water	7732-18-5	Uncontrolled product according to WHMIS classification criteria

#### Canada - WHMIS - Ingredient Disclosure List

• Sodium borate	1303-96-4	1 %
• Benzalkonium chloride	68391-01-5	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Boric acid	10043-35-3	1 %
• Purified water	7732-18-5	Not Listed

## Europe

### Other

#### EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification

• Sodium borate	1303-96-4	Repr.Cat.2; R60-61
• Benzalkonium chloride	68391-01-5	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Boric acid	10043-35-3	Repr.Cat.2; R60-61
• Purified water	7732-18-5	Not Listed

#### EU - CLP (1272/2008) - Annex VI - Table 3.2 - Concentration Limits

• Sodium borate	1303-96-4	8.5%≤C: Repr.Cat.2; R:60-61
• Benzalkonium chloride	68391-01-5	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Boric acid	10043-35-3	5.5%≤C: Repr.Cat.2; R:60-61
• Purified water	7732-18-5	Not Listed

#### EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling

• Sodium borate	1303-96-4	T R:60-61 S:53-45
• Benzalkonium chloride	68391-01-5	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Boric acid	10043-35-3	T R:60-61 S:53-45
• Purified water	7732-18-5	Not Listed

**EU - CLP (1272/2008) - Annex VI - Table 3.2 - Notes - Substances and Preparations**

• Sodium borate	1303-96-4	Not Listed
• Benzalkonium chloride	68391-01-5	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Boric acid	10043-35-3	Not Listed
• Purified water	7732-18-5	Not Listed

**EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases**

• Sodium borate	1303-96-4	S:53-45
• Benzalkonium chloride	68391-01-5	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Boric acid	10043-35-3	S:53-45
• Purified water	7732-18-5	Not Listed

**United Kingdom****Environment****United Kingdom - List of Chemicals of Concern**

• Sodium borate	1303-96-4	Not Listed
• Benzalkonium chloride	68391-01-5	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Boric acid	10043-35-3	Not Listed
• Purified water	7732-18-5	Not Listed

**United States****Environment****U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities**

• Sodium borate	1303-96-4	Not Listed
• Benzalkonium chloride	68391-01-5	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Boric acid	10043-35-3	Not Listed
• Purified water	7732-18-5	Not Listed

**United States - California****Environment****U.S. - California - Proposition 65 - Carcinogens List**

• Sodium borate	1303-96-4	Not Listed
• Benzalkonium chloride	68391-01-5	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Boric acid	10043-35-3	Not Listed
• Purified water	7732-18-5	Not Listed

**U.S. - California - Proposition 65 - Developmental Toxicity**

• Sodium borate	1303-96-4	Not Listed
• Benzalkonium chloride	68391-01-5	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Boric acid	10043-35-3	Not Listed
• Purified water	7732-18-5	Not Listed

**U.S. - California - Proposition 65 - Reproductive Toxicity - Female**

• Sodium borate	1303-96-4	Not Listed
• Benzalkonium chloride	68391-01-5	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Boric acid	10043-35-3	Not Listed

• Purified water	7732-18-5	Not Listed
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**U.S. - California - Proposition 65 - Reproductive Toxicity - Male**

• Sodium borate	1303-96-4	Not Listed
• Benzalkonium chloride	68391-01-5	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Boric acid	10043-35-3	Not Listed
• Purified water	7732-18-5	Not Listed

**Section 16 - Other Information**

**Last Revision Date**

- 10/February/2015

**Preparation Date**

- 10/February/2015

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½ Face Respirator

By

3M

# Full Face Respirator

By

3M

○ Asbestos Particulate Filter

By

3M

○

○



## Article Information Sheet

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### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Organic Vapor Cartridge/Filter 60921, P100 Respiratory Protection 60/Case

#### Product Identification Numbers

70-0706-1448-5

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Respiratory Protection

#### 1.3. Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	Personal Safety Division
<b>ADDRESS:</b>	3M Center, St. Paul, MN 55144-1000, USA
<b>Telephone:</b>	1-888-3M HELPS (1-888-364-3577)

#### 1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

### SECTION 2: Hazard identification

This product is exempt from hazard classification according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Polystyrene	None	40 - 70
Activated Carbon	None	30 - 60



Polyester	None	1 - 5
Glass Fiber Paper	None	1 - 5
Adhesive	None	1 - 5

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

**Inhalation:**

No need for first aid is anticipated.

**Skin Contact:**

No need for first aid is anticipated.

**Eye Contact:**

No need for first aid is anticipated.

**If Swallowed:**

No need for first aid is anticipated.

## SECTION 5: Fire-fighting measures

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Not applicable.

### 6.2. Environmental precautions

Not applicable.

### 6.3. Methods and material for containment and cleaning up

Not applicable.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions.

### 7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

## SECTION 8: Exposure controls/personal protection

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions. No engineering controls or personal protective equipment (PPE) are necessary.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

General Physical Form:	Solid
Flammability (solid, gas)	Not Available
Specific Gravity	No Data Available

### SECTION 10: Stability and reactivity

This material is considered to be non reactive under normal use conditions.

### SECTION 11: Toxicological information

**Inhalation:**  
No health effects are expected

**Skin Contact:**  
No health effects are expected

**Eye Contact:**  
No health effects are expected

**Ingestion:**  
No health effects are expected

**Additional Information:**  
This product, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.

### SECTION 12: Ecological information

This article is expected to present a low environmental risk either because use and disposal are unlikely to result in a significant release of components to the environment or because those components that may be released are expected to have insignificant environmental impact.

### SECTION 13: Disposal considerations

Dispose of contents/container in accordance with the local/regional/national/international regulations.

### SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

### SECTION 15: Regulatory information

**Chemical Inventories**  
This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory requirements.

### SECTION 16: Other information

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Welding

6/15/15

Aluminum Cutting/Grinding Wheel

By

Weiler



# Aluminum Oxide Resinoid Bonded Cutting/Grinding Wheel

## Safety Data Sheet

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product name Aluminum Oxide Resinoid Bonded Cutting/Grinding Wheel

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture Manufacturing

#### 1.3. Details of the supplier of the safety data sheet

Weiler Corporation  
1 Weiler Drive  
Cresco, PA 18326

#### 1.4. Emergency telephone number

Emergency number : 570-595-7495

### SECTION 2: Hazards Identification

#### 2.1. Classification of the substance or mixture

This product as manufactured is defined as an article per 29 CFR 1910.1200. No exposure hazards are anticipated during normal product handling conditions. In most cases, the material(s) removed from the workpiece may present a greater hazard than material released by the product. Based upon the materials that are contained within the working portion of this product it is possible that some dust particles from this product may be generated. The following safety data is presented for potential exposure hazards as associated with the dust particles that are related to this product.

#### Classification (GHS-US)

Not classified

#### 2.2. Label elements

##### GHS-US labeling

This product as manufactured is defined as an article, therefore no labeling is required for the product as manufactured.

#### 2.3. Other hazards

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substance

Not applicable

#### 3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Aluminum oxide	(CAS No) 1344-28-1	80	Not classified
Fiberglass	None	10 - 15	Not classified
Trisodium hexafluoroaluminate	(CAS No) 15096-52-3	7	Acute Tox. 4 (Inhalation), H332 STOT RE 1, H372 Aquatic Chronic 2, H411
Silica, amorphous	(CAS No) 7631-86-9	4	Not classified
Wollastonite (Ca(SiO3))	(CAS No) 13983-17-0	3	Not classified
Iron oxide (Fe2O3)	(CAS No) 1309-37-1	0.05	Not classified

Full text of H-phrases: see section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures after inhalation : Remove victim from source of exposure to fresh air. If breathing is difficult administer oxygen. Seek medical attention.
- First-aid measures after skin contact : Wash with soap and water. Seek medical advice if skin irritation develops or persists.
- First-aid measures after eye contact : Flush with plenty of water for at least 15 minutes. Seek medical advice if irritation develops or persists.

# Aluminum Oxide Resinoid Bonded Cutting/Grinding Wheel

## Safety Data Sheet

First-aid measures after ingestion : Seek medical attention.

#### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : Dusts may cause coughing, shortness of breath. Prolonged breathing of dusts may affect breathing capacity.

Symptoms/injuries after skin contact : Dusts may cause skin irritation.

Symptoms/injuries after eye contact : Dust may irritate eyes.

Symptoms/injuries after ingestion : None under normal use.

#### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media : Use carbon dioxide or water spray.

Unsuitable extinguishing media : None.

#### 5.2. Special hazards arising from the substance or mixture

Fire hazard : None known.

Explosion hazard : None known.

#### 5.3. Advice for firefighters

Protection during firefighting : Firefighters should wear full protective gear.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

No additional information available

##### 6.1.2. For emergency responders

No additional information available

#### 6.2. Environmental precautions

None.

#### 6.3. Methods and material for containment and cleaning up

For containment : No special measures required.

Methods for cleaning up : No special measures required.

#### 6.4. Reference to other sections

No additional information available

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Grinding and cut off wheels if dropped or damaged can cause serious bodily injury. Avoid usage if product has been dropped or damaged.

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : No special storage conditions required.

#### 7.3. Specific end use(s)

No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Aluminum oxide (1344-28-1)		
ACGIH	Not applicable	
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable fraction)
Iron oxide (Fe <sub>2</sub> O <sub>3</sub> ) (1309-37-1)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (respirable fraction)



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Iron oxide (Fe <sub>2</sub> O <sub>3</sub> ) (1309-37-1)		
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (fume) 15 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable fraction)
Silica, amorphous (7631-86-9)		
ACGIH	Not applicable	
OSHA	Not applicable	
Trisodium hexafluoroaluminate (15096-52-3)		
ACGIH	Not applicable	
OSHA	Not applicable	
Wollastonite (Ca(SiO <sub>3</sub> )) (13983-17-0)		
ACGIH	Not applicable	
OSHA	Not applicable	

Note: Consideration should be given to the base material and coating that are being worked upon.

### 8.2. Exposure controls

#### Appropriate engineering controls:

Utilize adequate ventilation to minimize the exposure to airborne particulates and maintain the concentration of contaminants below the occupational exposure limits.

#### Respiratory Protection:

When exposure limits are exceeded or when the dust concentrations are excessive, approved respirators for those conditions should be used. When selecting the respiratory protection equipment, consideration of the exposure to the coating or the base materials being worked on should be included. Local regulations and standards should be followed where appropriate. The type of respiratory equipment used should be selected according to the contaminate type, form and concentration being produced. Select and use respirators in accordance with applicable regulations and good industrial hygiene practice.

#### Hand protection:

The use of cloth or leather gloves is recommended.

#### Eye Protection:

Safety goggles or face shield over safety glasses with side shields.

#### Hearing Protection:

Hearing protection may be required.

#### Skin and body protection:

The use of protective clothing should be used as needed to prevent the contamination of personal clothing.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Cutting/Grinding wheel
Color	: Dark brown to black
Odor	: Odorless
Odor threshold	: No data available
pH	: No data available
Melting point	: 900 °F
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available

# Aluminum Oxide Resinoid Bonded Cutting/Grinding Wheel

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Specific gravity	: 2
Relative vapor density at 20 °C	: No data available
Solubility	: Slight
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

### 10.3. Possibility of hazardous reactions

Will not occur.

### 10.4. Conditions to avoid

None.

### 10.5. Incompatible materials

None.

### 10.6. Hazardous decomposition products

None. Dusts and decomposition odors are generated when product is in use.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

<b>Aluminum oxide (1344-28-1)</b>	
LD50 oral rat	> 5000 mg/kg
<b>Iron oxide (Fe2O3) (1309-37-1)</b>	
LD50 oral rat	> 10000 mg/kg
<b>Silica, amorphous (7631-86-9)</b>	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 2.2 mg/l (Exposure time: 1 h)
<b>Trisodium hexafluoroaluminate (15096-52-3)</b>	
LD50 oral rat	> 5 g/kg

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

<b>Iron oxide (Fe2O3) (1309-37-1)</b>	
IARC group	3 - Not classifiable
<b>Silica, amorphous (7631-86-9)</b>	
IARC group	3 - Not classifiable

# Aluminum Oxide Resinoid Bonded Cutting/Grinding Wheel

## Safety Data Sheet

<b>Wollastonite (CaSiO<sub>3</sub>) (13983-17-0)</b>	
IARC group	3 - Not classifiable
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

<b>Silica, amorphous (7631-86-9)</b>	
LC50 fish 1	5000 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
EC50 Daphnia 1	7600 mg/l (Exposure time: 48 h - Species: Ceriodaphnia dubia)

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

<b>Silica, amorphous (7631-86-9)</b>	
BCF fish 1	(no bioaccumulation expected)

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

Effect on ozone layer : No additional information available

Effect on the global warming : No known ecological damage caused by this product.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

### SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not a dangerous good as defined in transport regulations

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

<b>Aluminum oxide (1344-28-1)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 % (fibrous forms)
<b>Iron oxide (Fe<sub>2</sub>O<sub>3</sub>) (1309-37-1)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Silica, amorphous (7631-86-9)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

# Aluminum Oxide Resinoid Bonded Cutting/Grinding Wheel

## Safety Data Sheet

### Trisodium hexafluoroaluminate (15096-52-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2 US State regulations

#### Aluminum oxide (1344-28-1)

U.S. - Massachusetts - Right To Know List  
U.S. - Minnesota - Hazardous Substance List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List

#### Iron oxide (Fe<sub>2</sub>O<sub>3</sub>) (1309-37-1)

U.S. - Massachusetts - Right To Know List  
U.S. - Minnesota - Hazardous Substance List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List

#### Silica, amorphous (7631-86-9)

U.S. - Massachusetts - Right To Know List  
U.S. - Minnesota - Hazardous Substance List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List

#### Trisodium hexafluoroaluminate (15096-52-3)

U.S. - New Jersey - Right to Know Hazardous Substance List

## SECTION 15: Other information

### Full text of H-phrases:

Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
H332	Harmful if inhaled
H372	Causes damage to organs through prolonged or repeated exposure
H411	Toxic to aquatic life with long lasting effects

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

Flap Discs

By

Weiler



# Abrasive Flap Disc - Aluminum Backed

## Safety Data Sheet

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product Identifier

Product name : Abrasive Flap Disc - Aluminum Backed (Tiger, V Pro, Blue Kote)

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Manufacturing

#### 1.3. Details of the supplier of the safety data sheet

Weiler Corporation  
1 Weiler Drive  
Cresco, PA 18326

#### 1.4. Emergency telephone number

Emergency number : 570-595-7495

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

This product as manufactured is defined as an article per 29 CFR 1910.1200. No exposure hazards are anticipated during normal product handling conditions. In most cases, the material(s) removed from the workpiece may present a greater hazard than material released by the product. Based upon the materials that are contained within the working portion of this product it is possible that some dust particles from this product may be generated. The following safety data is presented for potential exposure hazards as associated with the dust particles that are related to this product.

Classification (GHS-US)

Not classified

#### 2.2. Label elements

GHS-US labeling

This product as manufactured is defined as an article, therefore no labeling is required for the product as manufactured.

#### 2.3. Other hazards

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/information on ingredients

#### 3.1. Substance

Not applicable

#### 3.2. Mixture

Name	Product Identifier	%	Classification (GHS-US)
Aluminum oxide	(CAS No) 1344-28-1	15 - 25	Not classified
Epoxy Resin	None	5	Not classified
Zirconium	(CAS No) 7440-67-7	3 - 13	Not classified
Zinc stearate	(CAS No) 557-05-1	3 - 13	Not classified
Cryolite	(CAS No) 13775-53-6	1 - 15	Acute Toxin 4, H332 STOT wdh. 1, H372 Acute Toxin 4, H302 Aqu. Chron. , H411

Full text of H-phrases: see section 16

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

First-aid measures after inhalation : Remove victim from source of exposure to fresh air. If breathing is difficult administer oxygen. Seek medical attention.

First-aid measures after skin contact : Wash with soap and water. Seek medical advice if skin irritation develops or persists.

First-aid measures after eye contact : Flush with plenty of water for at least 15 minutes. Seek medical advice if irritation develops or persists.

First-aid measures after ingestion : Seek medical attention.

# Abrasive Flap Disc - Aluminum Backed

## Safety Data Sheet

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	: Dusts may cause coughing, shortness of breath. Prolonged breathing of dusts may affect breathing capacity.
Symptoms/injuries after skin contact	: Dusts may cause irritation. May cause abrasions.
Symptoms/injuries after eye contact	: Dust may irritate or damage the eyes without protection.
Symptoms/injuries after ingestion	: None under normal use.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Fire fighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	: Use water, carbon dioxide, foam or dry chemical.
Unsuitable extinguishing media	: None.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard	: None known.
Explosion hazard	: None known.

### 5.3. Advice for firefighters

Protection during firefighting	: Firefighters should wear full protective gear.
--------------------------------	--

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

No additional information available

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

None.

### 6.3. Methods and material for containment and cleaning up

For containment	: No special measures required.
Methods for cleaning up	: No special measures required.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling	: Handle with care, avoid impact.
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### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Store dry at 20° C +/- 20 °C; 55-60% air humidity
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### 7.3. Specific end use(s)

No additional information available

# Abrasive Flap Disc - Aluminum Backed

## Safety Data Sheet

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Aluminum oxide (1344-28-1)		
ACGIH	Not applicable	
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable fraction)
Zinc stearate (557-05-1)		
ACGIH	Not applicable	
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable fraction)

Note: Consideration should be given to the base material and coating that are being worked upon.

#### 8.2. Exposure controls

##### Appropriate engineering controls:

Utilize adequate ventilation to minimize the exposure to airborne particulates and maintain the concentration of contaminants below the occupational exposure limits.

##### Respiratory Protection:

When exposure limits are exceeded or when the dust concentrations are excessive, approved respirators for those conditions should be used. When selecting the respiratory protection equipment, consideration of the exposure to the coating or the base materials being worked on should be included. Local regulations and standards should be followed where appropriate. The type of respiratory equipment used should be selected according to the contaminate type, form and concentration being produced. Select and use respirators in accordance with applicable regulations and good industrial hygiene practice.

##### Hand protection:

The use of cloth or leather gloves is recommended.

##### Eye Protection:

Safety goggles or face shield over safety glasses with side shields.

##### Hearing Protection:

Hearing protection may be required.

##### Skin and body protection:

The use of protective clothing should be used as needed to prevent the contamination of personal clothing.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	Aluminum disc coated with flaps of abrasive cloth
Color	: Varies
Odor	: Odorless
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Specific gravity	: No data available
Relative vapor density at 20 °C	: No data available



# Abrasive Flap Disc - Aluminum Backed

## Safety Data Sheet

Solubility : Paper label is slightly soluble  
Log Pow : No data available  
Log Kow : No data available  
Auto-ignition temperature : No data available  
Decomposition temperature : No data available  
Viscosity : No data available  
Viscosity, kinematic : No data available  
Viscosity, dynamic : No data available

### 9.2. Other Information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

### 10.3. Possibility of hazardous reactions

Will not occur.

### 10.4. Conditions to avoid

None.

### 10.5. Incompatible materials

Strong alkali.

### 10.6. Hazardous decomposition products

During use, grinding dust is generated

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

Aluminum oxide (1344-28-1)	
LD50 oral rat	> 5000 mg/kg

Zinc stearate (557-05-1)	
LD50 oral rat	> 10 g/kg
LD50 dermal rabbit	> 2000 mg/kg

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

## SECTION 12: Ecological information

No additional information available

# Abrasive Flap Disc - Aluminum Backed

## Safety Data Sheet

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

Zinc stearate (557-05-1)	
Log Pow	1.2

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Effect on ozone layer : No additional information available

Effect on the global warming : No known ecological damage caused by this product.

## SECTION 13: Disposal considerations

### 13.1. Waste disposal methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

## SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not a dangerous good as defined in transport regulations

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### Aluminum oxide (1344-28-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 313 - Emission Reporting 1.0 % (fibrous forms)

#### Zinc stearate (557-05-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. US State regulations

#### Aluminum oxide (1344-28-1)

U.S. - Massachusetts - Right To Know List

U.S. - Minnesota - Hazardous Substance List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

#### Zinc stearate (557-05-1)

U.S. - Massachusetts - Right To Know List

U.S. - Minnesota - Hazardous Substance List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: Other information

Full text of H-phrases::

H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H372	Causes damage to organs through prolonged or repeated exposure. Target organs: lungs, skeleton.

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

Low Hydrogen (7018) Rods

By

Lincoln

## 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY UNDERTAKING

### 1.1 Identification of substance / preparation

Product identifier : Coated Stick Electrode (SMAW)  
 Product name : Arcweld 7018, Easyweld 7018, Hyrad 7016LT, Hyrad 7018, Hyrad 7018LT, Hyrad 7048

### 1.2 Use of substance / preparation

Use of substance/preparation : Manual Metal Arc Welding  
 Main use category : Industrial use – Professional use  
 Industrial category : Welding

### 1.3 Company / undertaking identification

Supplier : Lincoln Electric Europe B.V.  
 Nieuwe Dukenburgseweg 20  
 6534AD Nijmegen  
 The Netherlands  
 Company role : Producer - Supplier  
 Company telephone number : +31 243 522 911  
 Company fax number : +31 243 522 245  
 Web : [www.lincolnelectric.eu](http://www.lincolnelectric.eu)  
 Company contact person : [ymee@incolnelectric.eu](mailto:ymee@incolnelectric.eu)

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification and General Hazards

Welding electrodes containing nickel are classified for skin sensitization only when the release rate is minimum 0.5µg Ni/cm<sup>2</sup>/week. The welding electrodes that this MSDS concerns are not classified as hazardous to health and environment according to present regulation.

### 2.2 Label elements

Welding electrodes in massive form do not require labeling under current chemical product classification and labeling regulations, if they are not classified as hazardous to health and environment

### 2.3 Other hazards

Processes which generate particulates during welding can cause hazards to health or environmental effects and they may cause an allergic reaction on contact with skin or by inhalation. The welding electrodes do not meet the criteria for PBT or vPvB in accordance with Annex XIII.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substance / Preparation

For information on each substance in the welding electrodes, see 3.2.

### 3.2 Mixture

The substances in the preparation are as follows (see section 15. Regulatory Information for text applicable R-phrases):

Ingredient	CAS nr	EINICS nr	Risk phrase	Concentration Max weight%
Iron (combined coating and core wire)	7439-89-6	231-096-4	N.A.	70 - 85
Calciumcarbonate	1317-65-3	215-279-6	N.A.	5 - 12
Fluorspar	7789-75-5	14542-23-5	N.A.	5 - 12
Rutile	1317-80-2	215-282-2	N.A.	< 5
Feldspars	68476-25-5	270-666-7	N.A.	< 5
Silicates	1312-76-1	215-199-1	R36; R37; R38	< 5
Mn and/or Mn-alloys and compounds (as Mn)	7439-96-5	231-105-1	N.A.	< 2
SiO <sub>2</sub>	14808-60-7	238-878-4	R20; R48	< 5
Si and/or Si-alloys and compounds (as Si)	7440-21-3	231-130-8	N.A.	< 1
Mg and/or Mg-alloys and compounds (as Mg)	7439-95-4	231-104-6	R11; R15	< 0,5

## 4. FIRST AID MEASURES

Welding electrodes in themselves or particles from the electrode are not judged as acute toxic. An average content in the air of a single substance at the level of the limit considered, with current knowledge, generally not present any risk of injury or discomfort. It is nevertheless important to strive to keep all air pollutants as low as possible during the exposure limit.

A particularly important situation is that if someone is exposed to multiple air pollutants simultaneously or exposed to air pollution related to heavy work. There is no indication of immediate medical attention or special treatment for the welding electrodes.

General	: Show this safety data sheet to the doctor on duty
Inhalation	: When breathing is difficult, provide fresh air and contact physician
Skin contact	: For skin burns from arc radiation, seek medical attention.
Eye contact	: For radiation burns due to arc flash, seek medical attention.

## 5. FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

The welding electrodes are non-combustible as a solid. Where metal dust or powder is involved, cover with dry sand, chemical powder, or other dry inert material to minimize the risk of explosion.

### 5.2 Advice for fire-fighter

Use ordinary safety equipment.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Not applicable to solid metal/welding electrodes in massive form. In particulate form, wear personal protective equipment as specified in Section 8. Avoid contact with the skin. Do not inhale dust.

### 6.2 Environmental precautions

Collect powder using a vacuum cleaner or by gentle sweeping to keep dust away from drains, surface and ground water. Prevent particulates from entering watercourses or drains. Avoid formation of dust clouds.

### 6.3 Methods and material for containment and cleaning up

Collect powder using a vacuum cleaner or by gentle sweeping.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

No special precautions necessary for welding electrodes in massive form other than normal physical handling techniques. Extraction should be used when working with particulate material (dust, fumes, mist). Avoid prolonged inhalation of dust. Wear gloves to avoid contact with skin (see Section 8). Do not to eat, drink or smoke in work areas and wash hands / shower when leaving the working areas.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in a dry environment.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Read and understand the "Recommendations for Exposure Scenarios, Risk Management Measures and to identify Operational Conditions under which metals, alloys and metallic articles may be safely welded", available from your supplier.

Welding/Brazing produces fumes which can affect human health and the environment.

Fumes are a varying mixture of airborne gases and fine particles which, if inhaled or swallowed, constitute a health hazard. The degree of risk will depend on the composition of the fume, concentration of the fume and duration of exposure.

The fume composition is dependent upon the material being worked, the process and consumables being used, coatings on the work such as paint, galvanizing or plating, oil or contaminants from cleaning and degreasing activities.

A systematic approach to the assessment of exposure is necessary, taking into account the particular circumstances for the operator and ancillary worker that can be exposed.

Considering the emission of fumes when welding, brazing or cutting of metals, it is recommended to

- 1- Arrange risk management measures through applying general information and guidelines provided by this Exposure scenario and
- 2- Using the information provided in this MSDS.

The employer shall ensure that the risk from welding fumes to the safety and health of workers is eliminated or reduced to a minimum. The following principle shall be applied:

- 1- Select the applicable process/material combinations with the lowest class, whenever possible.
- 2- Set welding process with the lowest emission parameter.
- 3- Apply the relevant collective protective measure in accordance with class number. In general, the use of PPE is taken into account after all other measures is applied.
- 4- Wear the relevant personal protective equipment in accordance with the duty cycle.

In addition, compliance with the National Regulations regarding the exposure to welding fumes of welders and related personnel shall be verified.

#### 8.1. Control parameters

MAC, PEL, TLV values may vary per element as well as per country. Check your national limit values.

#### 8.2 Exposure control

Always check the applicability of any protective equipment with your supplier.

##### 8.2.1 Eye/face protection

Always wear eye protection when handling dusts and other particulates, e.g. safety glasses with side protection, safety goggles or visor.

##### 8.2.2 Skin protection

Always wear protective clothing when handling dusts and other particulates.

##### 8.2.3 Hand protection

Wear hand protection, e.g. leather gloves when handling welding electrodes with sharp edges to avoid cuts. Always wear disposable nitrile or vinyl gloves when handling particulate material to avoid skin contact. Where necessary wear the disposable gloves under work gloves to protect against both types of hazard.

##### 8.2.4 Respiratory protection

Welding electrodes delivered in solid form give no health risk through inhalation. Extraction should be used when working with particulate material (dust, fumes, mist). In case of prolonged or frequent exposure to particulates, wear particle filter mask (like for instance P3).

##### 8.2.5 General hygiene measures

Wash hands well with soap and water after handling dusty materials. Wash contaminated clothing to avoid secondary contamination or contamination of other personnel.

##### 8.2.6 Thermal hazards

Ensure adequate ventilation to keep levels of air-borne particles below occupational exposure limits given above. Working areas should be provided with extraction. Factories should be kept clean to avoid any unnecessary contamination.

##### 8.2.7 Environmental exposure control

Avoid letting dust and fumes entering the outside air.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	: Metallic core wire, with minerals/alloy coating
Odor	: Odorless
Melting- / freezing point:	1200 -1500 °C
Vapor density	: 7.8 kg/dm <sup>3</sup>

Note: These are typical values and do not constitute a specification.

### 9.2 Other information

No other physical or chemical parameters are necessary for welding electrodes.

## 10. STABILITY/REACTIVITY

### 10.1 Reactivity

Welding electrodes are stable. Any reaction should not take place under normal circumstances.

### 10.2 Chemical stability

Welding electrodes are stable under normal conditions.

### 10.3 Possibility of hazardous reactions

See section 8

### 10.4 Conditions to avoid

No special conditions need to be avoided for welding electrodes, however keep dust and fumes from entering the environment.

### 10.5 Incompatible materials

Contact with acids can generate explosive gasses, e.g. hydrogen.

**10.6 Hazardous decomposition products**  
Welding electrodes rods are stable under normal conditions

## 11. TOXICOLOGICAL INFORMATION

**11.1 General**  
Inhalation of welding fumes, dust and gases can be hazardous for health. Welding electrodes containing nickel carry a risk of producing an allergic reaction following prolonged contact or in already sensitized persons. No further toxicological data available for welding electrodes.

**11.2 Chronic toxicity**  
*Overexposure to welding fumes and dust may affect pulmonary function. Welding fumes and dust may contain chromium, and nickel compounds which are suspected of being cancer causing agents.*

**11.2 Acute toxicity**  
*Overexposure to welding fumes and dust may result in symptoms like dizziness, nausea, dryness or irritation of the nose, throat or eyes.*

**11.3 Other information**  
Nickel is classified as a skin sensitizer. Can cause skin sensitization to susceptible individuals through prolonged contact with the skin

## 12. ECOLOGICAL INFORMATION

**12.1 Toxicity**  
Welding electrodes may contain metals which are considered to be toxic towards aquatic organisms.

**12.2 Persistence and degradability**  
Welding electrodes consist of elements that cannot degrade any further in the environment.

**12.3 Mobility in soil**  
Welding rods are not soluble in water or soil. Particles formed by working welding rods can be transported in the air.

**12.4 Results of PBT and vPvB assessment**  
No chemical safety report is required for the Welding rods, however neither the welding rod in itself or the substances that it consist of, meet the criteria for PBT or vPvB in accordance with REACH, Annex XIII.

**12.5 Other adverse effects**  
In massive form welding electrodes present no hazards to the aquatic environment. Particles and ions can, never the less, enter the aquatic compartment by means of dusts or smoke, or by liberation due to erosion thereby introducing iron or heavy metals into the ground or water.

## 13. DISPOSAL CONSIDERATIONS

**13.1 Waste treatment methods**  
Non-contaminated waste from production and welding rods are recyclable. The unused product is not classified as hazardous waste. Dispose in accordance with appropriate government regulations. Any residues of finely divided product (particles, dust, fumes) may be regarded as Hazardous Waste, depending on local regulations.

**13.2 EU and Local legislation**  
The recommendations given are considered appropriate for safe disposal. However, local regulations may be more stringent and these must be complied with. EURL CODE : 120113

## 14. TRANSPORT INFORMATION

**14.1 UN number**  
Welding electrodes are not classified as dangerous goods for transport and have no UN number.

**14.2 UN proper shipping name**  
Welding electrodes are not classified as dangerous goods for transport and have no UN proper shipping name

**14.3 Transport hazard class(es)**  
Welding electrodes are not classified as dangerous goods for transport.





70+(8010) Welding Rods

By

Lincoln

## 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY UNDERTAKING

### 1.1 Identification of substance / preparation

Product identifier : Coated Stick Electrode (SMAW)  
 Product name : Shieldarc 70+, Shieldarc 85, Shieldarc 90, Shieldarc HYP, Pipeliner 8P+

### 1.2 Use of substance / preparation

Use of substance/preparation : Manual Metal Arc Welding  
 Main use category : Industrial use – Professional use  
 Industrial category : Welding

### 1.3 Company / undertaking Identification

Supplier : Lincoln Electric Europe B.V.  
 Nieuwe Dukenburgseweg 20  
 6534AD Nijmegen  
 The Netherlands  
 Company role : Producer - Supplier  
 Company telephone number : +31 243 522 911  
 Company fax number : +31 243 522 245  
 Web : [www.lincolnelectric.eu](http://www.lincolnelectric.eu)  
 Company contact person : [ymee@lincolnelectric.eu](mailto:ymee@lincolnelectric.eu)

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification and General Hazards

Welding electrodes containing nickel are classified for skin sensitization only when the release rate is minimum 0.5µg Ni/cm<sup>2</sup>/week. The welding electrodes that this MSDS concerns are not classified as hazardous to health and environment according to present regulation.

### 2.2 Label elements

Welding electrodes in massive form do not require labeling under current chemical product classification and labeling regulations, if they are not classified as hazardous to health and environment

### 2.3 Other hazards

Processes which generate particulates during welding can cause hazards to health or environmental effects and they may cause an allergic reaction on contact with skin or by inhalation. The welding electrodes do not meet the criteria for PBT or vPvB in accordance with Annex XIII.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substance / Preparation

For information on each substance in the welding electrodes, see 3.2.

### 3.2 Mixture

The substances in the preparation are as follows (see section 15. Regulatory Information for text applicable H-phrases):

Ingredient	CAS nr	EINICS nr	Hazard statements	Concentration Max weight%
Iron (combined coating and core wire)	7439-89-6	231-096-4	N.A.	80-90
Calciumcarbonate	1317-65-3	215-279-6	N.A.	< 2
Kaolin	1332-58-7	310-194-1	N.A.	< 2
Rutile	1317-80-2	215-282-2	N.A.	< 5
Silicates	1312-76-1	215-199-1	H315; H319; H335	< 5
Mn and/or Mn-alloys and compounds (as Mn)	7439-96-5	231-105-1	N.A.	< 2
Cellulose	65996-61-4	265-995-8	N.A.	< 10
Nickel (combined coating and core wire)	7440-02-0	231-111-4	H317; H331; H351; H373; H412; H413	< 1
Mo and/or Mo-alloys and compounds (as Mo)	7439-98-7	231-107-2	N.A.	< 1

## 4. FIRST AID MEASURES

Welding electrodes in themselves or particles from the electrode are not judged as acute toxic. An average content in the air of a single substance at the level of the limit considered, with current knowledge, generally not present any risk of injury or discomfort. It is nevertheless important to strive to keep all air pollutants as low as possible during the exposure limit.

A particularly important situation is that if someone is exposed to multiple air pollutants simultaneously or exposed to air pollution related to heavy work. There is no indication of immediate medical attention or special treatment for the welding electrodes

General : Show this safety data sheet to the doctor on duty  
Inhalation : When breathing is difficult, provide fresh air and contact physician  
Skin contact : For skin burns from arc radiation, seek medical attention.  
Eye contact : For radiation burns due to arc flash, seek medical attention.

## 5. FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

The welding electrodes are non-combustible as a solid. Where metal dust or powder is involved, cover with dry sand, chemical powder, or other dry inert material to minimize the risk of explosion.

### 5.2 Advice for fire-fighter

Use ordinary safety equipment.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Not applicable to solid metal/welding electrodes in massive form. In particulate form, wear personal protective equipment as specified in Section 8. Avoid contact with the skin. Do not inhale dust.

### 6.2 Environmental precautions

Collect powder using a vacuum cleaner or by gentle sweeping to keep dust away from drains, surface and ground water. Prevent particulates from entering watercourses or drains. Avoid formation of dust clouds.

### 6.3 Methods and material for containment and cleaning up

Collect powder using a vacuum cleaner or by gentle sweeping.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

No special precautions necessary for welding electrodes in massive form other than normal physical handling techniques. Extraction should be used when working with particulate material (dust, fumes, mist). Avoid prolonged inhalation of dust. Wear gloves to avoid contact with skin (see Section 8). Do not to eat, drink or smoke in work areas and wash hands / shower when leaving the working areas.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in a dry environment.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Read and understand the "Recommendations for Exposure Scenarios, Risk Management Measures and to identify Operational Conditions under which metals, alloys and metallic articles may be safely welded", available from your supplier.

Welding/Brazing produces fumes which can affect human health and the environment.

Fumes are a varying mixture of airborne gases and fine particles which, if inhaled or swallowed, constitute a health hazard. The degree of risk will depend on the composition of the fume, concentration of the fume and duration of exposure.

The fume composition is dependent upon the material being worked, the process and consumables being used, coatings on the work such as paint, galvanizing or plating, oil or contaminants from cleaning and degreasing activities.

A systematic approach to the assessment of exposure is necessary, taking into account the particular circumstances for the operator and ancillary worker that can be exposed.

Considering the emission of fumes when welding, brazing or cutting of metals, it is recommended to

- 1- Arrange risk management measures through applying general information and guidelines provided by this Exposure scenario and
- 2- Using the information provided in this MSDS.

The employer shall ensure that the risk from welding fumes to the safety and health of workers is eliminated or reduced to a minimum. The following principle shall be applied:

- 1- Select the applicable process/material combinations with the lowest class, whenever possible.
- 2- Set welding process with the lowest emission parameter.
- 3- Apply the relevant collective protective measure in accordance with class number. In general, the use of PPE is taken into account after all other measures is applied.
- 4- Wear the relevant personal protective equipment in accordance with the duty cycle.

In addition, compliance with the National Regulations regarding the exposure to welding fumes of welders and related personnel shall be verified.

### 8.1. Control parameters

MAC, PEL, TLV values may vary per element as well as per country. Check your national limit values.

### 8.2 Exposure control

Always check the applicability of any protective equipment with your supplier.

#### 8.2.1 Eye/face protection

Always wear eye protection when handling dusts and other particulates, e.g. safety glasses with side protection, safety goggles or visor.

#### 8.2.2 Skin protection

Always wear protective clothing when handling dusts and other particulates.

#### 8.2.3 Hand protection

Wear hand protection, e.g. leather gloves when handling welding electrodes with sharp edges to avoid cuts. Always wear disposable nitrile or vinyl gloves when handling particulate material to avoid skin contact. Where necessary wear the disposable gloves under work gloves to protect against both types of hazard.

#### 8.2.4 Respiratory protection

Welding electrodes delivered in solid form give no health risk through inhalation. Extraction should be used when working with particulate material (dust, fumes, mist). In case of prolonged or frequent exposure to particulates, wear particle filter mask (like for instance P3).

#### 8.2.5 General hygiene measures

Wash hands well with soap and water after handling dusty materials. Wash contaminated clothing to avoid secondary contamination or contamination of other personnel.

#### 8.2.6 Thermal hazards

Ensure adequate ventilation to keep levels of air-borne particles below occupational exposure limits given above. Working areas should be provided with extraction. Factories should be kept clean to avoid any unnecessary contamination.

#### 8.2.7 Environmental exposure control

Avoid letting dust and fumes entering the outside air.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	: Metallic core wire, with minerals/alloy coating
Odor	: Odorless
Melting- / freezing point:	1200 -1500 °C
Vapor density	: 7.8 kg/dm <sup>3</sup>

*Note: These are typical values and do not constitute a specification.*

### 9.2 Other information

No other physical or chemical parameters are necessary for welding electrodes.

## 10. STABILITY/REACTIVITY

### 10.1 Reactivity

Welding electrodes are stable. Any reaction should not take place under normal circumstances.

### 10.2 Chemical stability

Welding electrodes are stable under normal conditions.

### 10.3 Possibility of hazardous reactions

See section 8

### 10.4 Conditions to avoid

No special conditions need to be avoided for welding electrodes, however keep dust and fumes from entering the environment.

**10.5 Incompatible materials**

Contact with acids can generate explosive gasses, e.g. hydrogen.

**10.6 Hazardous decomposition products**

Welding electrodes rods are stable under normal conditions

**11. TOXICOLOGICAL INFORMATION****11.1 General**

Inhalation of welding fumes, dust and gases can be hazardous for health.

Welding electrodes containing nickel carry a risk of producing an allergic reaction following prolonged contact or in already sensitized persons. No further toxicological data available for welding electrodes.

**11.2 Chronic toxicity**

Overexposure to welding fumes and dust may affect pulmonary function. Welding fumes and dust may contain chromium, and nickel compounds which are suspected of being cancer causing agents.

**11.2 Acute toxicity**

Overexposure to welding fumes and dust may result in symptoms like dizziness, nausea, dryness or irritation of the nose, throat or eyes.

**11.3 Other information**

Nickel is classified as a skin sensitizer. Can cause skin sensitization to susceptible individuals through prolonged contact with the skin

**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

Welding electrodes may contain metals which are considered to be toxic towards aquatic organisms.

**12.2 Persistence and degradability**

Welding electrodes consist of elements that cannot degrade any further in the environment.

**12.3 Mobility in soil**

Welding rods are not soluble in water or soil. Particles formed by working welding rods can be transported in the air.

**12.4 Results of PBT and vPvB assessment**

No chemical safety report is required for the Welding rods, however neither the welding rod in itself or the substances that it consist of, meet the criteria for PBT or vPvB in accordance with REACH, Annex XIII.

**12.5 Other adverse effects**

In massive form welding electrodes present no hazards to the aquatic environment. Particles and ions can, never the less, enter the aquatic compartment by means of dusts or smoke, or by liberation due to erosion thereby introducing iron or heavy metals into the ground or water.

**13. DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods**

Non-contaminated waste from production and welding rods are recyclable. The unused product is not classified as hazardous waste. Dispose in accordance with appropriate government regulations.

Any residues of finely divided product (particles, dust, fumes) may be regarded as Hazardous Waste, depending on local regulations.

**13.2 EU and Local legislation**

The recommendations given are considered appropriate for safe disposal. However, local regulations may be more stringent and these must be complied with. EURL CODE : 120113

**14. TRANSPORT INFORMATION****14.1 UN number**

Welding electrodes are not classified as dangerous goods for transport and have no UN number.

**14.2 UN proper shipping name**

Welding electrodes are not classified as dangerous goods for transport and have no UN proper shipping name

**14.3 Transport hazard class(es)**

Welding electrodes are not classified as dangerous goods for transport.

**14.4 Packing group**

There are no any special precautions with which a user should or must comply or be aware of in connection with transport or conveyance either within or outside his premises.

**14.5 Environmental hazards**

Welding electrodes are not environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID and ADN) and/or a marine pollutant according to the IMDG Code.

**14.6 Special precautions for user**

There are no any special precautions which a user should or must comply or be aware of in connection with transport or conveyance either within or outside his premises of the welding rods.

**14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Welding electrodes in massive form are not subject to MARPOL73/78 and the IBC Code.

**15. REGULATORY INFORMATION****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Prepared according to EU Directives 2015/830. Classifications mentioned in section 3 concerns substances in their crushed form. Welding electrodes in massive form do not require labeling under current chemical product classification and labeling regulations, if they are not classified as hazardous to health and environment. Welding electrodes in particulate form e.g. dust, fumes, mist may cause an allergic reaction on contact with skin or if inhaled.

**15.2 Chemical Safety Assessment**

No chemical safety assessment has been carried out for the product.

**15.3 Full text of H-phrases used in Section 3**

H315 – Causes skin irritation.

H317 – May cause an allergic skin reaction.

H319 – Causes serious eye irritation.

H331 – Toxic if inhaled.

H335 – May cause respiratory irritation.

H351 – Suspected of causing cancer .

H373 – May cause damage to organs through prolonged or repeated exposure

H412 – Harmful to aquatic life with long lasting effects.

H413 – May cause long lasting harmful effects to aquatic life.

**16. OTHER INFORMATION**

Protect yourself and others. Take precautions when welding. Follow your employers' safety practice, which should be based on manufacturer's hazard data available to your employer. Fumes and gases can be dangerous to your health. Arc rays can injure eyes and burn skin. Electric shock can kill. Read and understand the manufacturer's instructions and your employer's safety practices. Keep your head out of the fumes. Use enough ventilation, exhaust at the arc, or both, to keep fumes and gases from your breathing zone, and the general area. Wear correct eye, ear and body protection. Do not touch live electrical parts. U.K.: see WMA No.236 and 237 and HSE Guidance Note EH 40. U.S.A.: See American Standard Z 49.1 "Safety in Welding and Cutting", published by the American Welding Society, 550 Le Jeune Rd, Miami, Florida 33126-5699; OSHA Safety and Health Standards, 29 CFR 1910, available from U.S. Government printing office, Washington D.C. 20402-0001.

All national/local prescriptions remain applicable. The data given in this sheet relate to the unused product, unless specified otherwise. During usage dangerous products can be formed (welding fume, radiation, etc.).

**General Disclaimer**

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

**REACH Disclaimer**

This information is based on current knowledge. Consistency of data in the SDS with CSR is considered, as far as the information is available at the time of compilation

5P+(6010) Welding Rods

By

Lincoln

5P(6010) Welding Rods

By

Lincoln



## 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY/UNDERTAKING

### 1.1 Identification of substance / preparation

Product identifier : Coated Stick Electrode (SMAW)  
 Product name : Fleetweld 5P, Fleetweld 5P+ ShieldArc 6P+, Pipeliner 6P+

### 1.2 Use of substance / preparation

Use of substance/preparation : Manual Metal Arc Welding  
 Main use category : Industrial use – Professional use  
 Industrial category : Welding

### 1.3 Company / undertaking identification

Supplier : Lincoln Electric Europe B.V.  
 Nieuwe Dukenburgseweg 20  
 6534AD Nijmegen  
 The Netherlands  
 Company role : Producer - Supplier  
 Company telephone number : +31 243 522 911  
 Company fax number : +31 243 522 245  
 Web : [www.lincolnelectric.eu](http://www.lincolnelectric.eu)  
 Company contact person : [vmee@lincolnelectric.eu](mailto:vmee@lincolnelectric.eu)

### 1.4 Emergency Telephone

Emergency telephone number : 112

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification and General Hazards

Welding electrodes containing nickel are classified for skin sensitization only when the release rate is minimum 0.5µg Ni/cm<sup>2</sup>/week. The welding electrodes that this MSDS concerns are not classified as hazardous to health and environment according to present regulation.

### 2.2 Label elements

Welding electrodes in massive form do not require labeling under current chemical product classification and labeling regulations, if they are not classified as hazardous to health and environment

### 2.3 Other hazards

Processes which generate particulates during welding can cause hazards to health or environmental effects and they may cause an allergic reaction on contact with skin or by inhalation. The welding electrodes do not meet the criteria for PBT or vPvB in accordance with Annex XIII.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substance / Preparation

For information on each substance in the welding electrodes, see 3.2.

### 3.2 Mixture

The substances in the preparation are as follows (see section 15. Regulatory Information for text applicable H-phrases):

Ingredient	CAS nr	EINICS nr	Hazard statements	Concentration Max weight%
Iron (combined coating and core wire)	7439-89-6	231-096-4	N.A.	80-90
Calciumcarbonate	1317-65-3	215-279-6	N.A.	< 2
Kaolin	1332-58-7	310-194-1	N.A.	< 2
Rutile	1317-80-2	215-282-2	N.A.	< 5
Silicates	1312-76-1	215-199-1	H315; H319; H335	< 5
Mn and/or Mn-alloys and compounds (as Mn)	7439-96-5	231-105-1	N.A.	< 2
Cellulose	65996-61-4	265-995-8	N.A.	< 10

## 4. FIRST AID MEASURES

Welding electrodes in themselves or particles from the electrode are not judged as acute toxic. An average content in the air of a single substance at the level of the limit considered, with current knowledge, generally not present any risk of injury or discomfort. It is nevertheless important to strive to keep all air pollutants as low as possible during the exposure limit.

A particularly important situation is that if someone is exposed to multiple air pollutants simultaneously or exposed to air pollution related to heavy work. There is no indication of immediate medical attention or special treatment for the welding electrodes.

General	: Show this safety data sheet to the doctor on duty
Inhalation	: When breathing is difficult, provide fresh air and contact physician
Skin contact	: For skin burns from arc radiation, seek medical attention.
Eye contact	: For radiation burns due to arc flash, seek medical attention.

## 5. FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

The welding electrodes are non-combustible as a solid. Where metal dust or powder is involved, cover with dry sand, chemical powder, or other dry inert material to minimize the risk of explosion.

### 5.2 Advice for fire-fighter

Use ordinary safety equipment.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Not applicable to solid metal/welding electrodes in massive form. In particulate form, wear personal protective equipment as specified in Section 8. Avoid contact with the skin. Do not inhale dust.

### 6.2 Environmental precautions

Collect powder using a vacuum cleaner or by gentle sweeping to keep dust away from drains, surface and ground water. Prevent particulates from entering watercourses or drains. Avoid formation of dust clouds.

### 6.3 Methods and material for containment and cleaning up

Collect powder using a vacuum cleaner or by gentle sweeping.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

No special precautions necessary for welding electrodes in massive form other than normal physical handling techniques. Extraction should be used when working with particulate material (dust, fumes, mist). Avoid prolonged inhalation of dust. Wear gloves to avoid contact with skin (see Section 8). Do not to eat, drink or smoke in work areas and wash hands / shower when leaving the working areas.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in a dry environment.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Read and understand the "Recommendations for Exposure Scenarios, Risk Management Measures and to identify Operational Conditions under which metals, alloys and metallic articles may be safely welded", available from your supplier.

Welding/Brazing produces fumes which can affect human health and the environment.

Fumes are a varying mixture of airborne gases and fine particles which, if inhaled or swallowed, constitute a health hazard. The degree of risk will depend on the composition of the fume, concentration of the fume and duration of exposure.

The fume composition is dependent upon the material being worked, the process and consumables being used, coatings on the work such as paint, galvanizing or plating, oil or contaminants from cleaning and degreasing activities.

A systematic approach to the assessment of exposure is necessary, taking into account the particular circumstances for the operator and ancillary worker that can be exposed.

Considering the emission of fumes when welding, brazing or cutting of metals, it is recommended to

- 1- Arrange risk management measures through applying general information and guidelines provided by this Exposure scenario and
- 2- Using the information provided in this MSDS.

The employer shall ensure that the risk from welding fumes to the safety and health of workers is eliminated or reduced to a minimum. The following principle shall be applied:

- 1- Select the applicable process/material combinations with the lowest class, whenever possible.
- 2- Set welding process with the lowest emission parameter.
- 3- Apply the relevant collective protective measure in accordance with class number. In general, the use of PPE is taken into account after all other measures is applied.
- 4- Wear the relevant personal protective equipment in accordance with the duty cycle.

In addition, compliance with the National Regulations regarding the exposure to welding fumes of welders and related personnel shall be verified.

### 8.1. Control parameters

MAC, PEL, TLV values may vary per element as well as per country. Check your national limit values.

### 8.2 Exposure control

Always check the applicability of any protective equipment with your supplier.

#### 8.2.1 Eye/face protection

Always wear eye protection when handling dusts and other particulates, e.g. safety glasses with side protection, safety goggles or visor.

#### 8.2.2 Skin protection

Always wear protective clothing when handling dusts and other particulates.

#### 8.2.3 Hand protection

Wear hand protection, e.g. leather gloves when handling welding electrodes with sharp edges to avoid cuts. Always wear disposable nitrile or vinyl gloves when handling particulate material to avoid skin contact. Where necessary wear the disposable gloves under work gloves to protect against both types of hazard.

#### 8.2.4 Respiratory protection

Welding electrodes delivered in solid form give no health risk through inhalation. Extraction should be used when working with particulate material (dust, fumes, mist). In case of prolonged or frequent exposure to particulates, wear particle filter mask (like for instance P3).

#### 8.2.5 General hygiene measures

Wash hands well with soap and water after handling dusty materials. Wash contaminated clothing to avoid secondary contamination or contamination of other personnel.

#### 8.2.6 Thermal hazards

Ensure adequate ventilation to keep levels of air-borne particles below occupational exposure limits given above. Working areas should be provided with extraction. Factories should be kept clean to avoid any unnecessary contamination.

#### 8.2.7 Environmental exposure control

Avoid letting dust and fumes entering the outside air.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	: Metallic core wire, with minerals/alloy coating
Odor	: Odorless
Melting- / freezing point:	1200 -1500 °C
Vapor density	: 7.8 kg/dm <sup>3</sup>

*Note: These are typical values and do not constitute a specification.*

### 9.2 Other information

No other physical or chemical parameters are necessary for welding electrodes.

## 10. STABILITY/REACTIVITY

### 10.1 Reactivity

Welding electrodes are stable. Any reaction should not take place under normal circumstances.

### 10.2 Chemical stability

Welding electrodes are stable under normal conditions.

### 10.3 Possibility of hazardous reactions

See section 8

### 10.4 Conditions to avoid

No special conditions need to be avoided for welding electrodes, however keep dust and fumes from entering the environment.

### 10.5 Incompatible materials

Contact with acids can generate explosive gasses, e.g. hydrogen.

## 10.6 Hazardous decomposition products

Welding electrodes rods are stable under normal conditions

## 11. TOXICOLOGICAL INFORMATION

### 11.1 General

Inhalation of welding fumes, dust and gases can be hazardous for health. Welding electrodes containing nickel carry a risk of producing an allergic reaction following prolonged contact or in already sensitized persons. No further toxicological data available for welding electrodes.

### 11.2 Chronic toxicity

*Overexposure to welding fumes and dust may affect pulmonary function. Welding fumes and dust may contain chromium, and nickel compounds which are suspected of being cancer causing agents.*

### 11.2 Acute toxicity

*Overexposure to welding fumes and dust may result in symptoms like dizziness, nausea, dryness or irritation of the nose, throat or eyes.*

### 11.3 Other information

Nickel is classified as a skin sensitizer. Can cause skin sensitization to susceptible individuals through prolonged contact with the skin

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Welding electrodes may contain metals which are considered to be toxic towards aquatic organisms.

### 12.2 Persistence and degradability

Welding electrodes consist of elements that cannot degrade any further in the environment.

### 12.3 Mobility in soil

Welding rods are not soluble in water or soil. Particles formed by working welding rods can be transported in the air.

### 12.4 Results of PBT and vPvB assessment

No chemical safety report is required for the Welding rods, however neither the welding rod in itself or the substances that it consist of, meet the criteria for PBT or vPvB in accordance with REACH, Annex XIII.

### 12.5 Other adverse effects

In massive form welding electrodes present no hazards to the aquatic environment. Particles and ions can, never the less, enter the aquatic compartment by means of dusts or smoke, or by liberation due to erosion thereby introducing iron or heavy metals into the ground or water.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Non-contaminated waste from production and welding rods are recyclable. The unused product is not classified as hazardous waste. Dispose in accordance with appropriate government regulations. Any residues of finely divided product (particles, dust, fumes) may be regarded as Hazardous Waste, depending on local regulations.

### 13.2 EU and Local legislation

The recommendations given are considered appropriate for safe disposal. However, local regulations may be more stringent and these must be complied with. EURAL CODE : 120113

## 14. TRANSPORT INFORMATION

### 14.1 UN number

Welding electrodes are not classified as dangerous goods for transport and have no UN number.

### 14.2 UN proper shipping name

Welding electrodes are not classified as dangerous goods for transport and have no UN proper shipping name

### 14.3 Transport hazard class(es)

Welding electrodes are not classified as dangerous goods for transport.

#### **14.4 Packing group**

There are no any special precautions with which a user should or must comply or be aware of in connection with transport or conveyance either within or outside his premises.

#### **14.5 Environmental hazards**

Welding electrodes are not environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID and ADN) and/or a marine pollutant according to the IMDG Code.

#### **14.6 Special precautions for user**

There are no any special precautions which a user should or must comply or be aware of in connection with transport or conveyance either within or outside his premises of the welding rods.

#### **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Welding electrodes in massive form are not subject to MARPOL73/78 and the IBC Code.

## 15. REGULATORY INFORMATION

#### **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Prepared according to EU Directives 2015/830. Classifications mentioned in section 3 concerns substances in their crushed form. Welding electrodes in massive form do not require labeling under current chemical product classification and labeling regulations, if they are not classified as hazardous to health and environment. Welding electrodes in particulate form e.g. dust, fumes, mist may cause an allergic reaction on contact with skin or if inhaled.

#### **15.2 Chemical Safety Assessment**

No chemical safety assessment has been carried out for the product.

#### **15.3 Full text of H-phrases used in Section 3**

H315 – Causes skin irritation.

H319 – Causes serious eye irritation.

H335 – May cause respiratory irritation.

## 16. OTHER INFORMATION

Protect yourself and others. Take precautions when welding. Follow your employers' safety practice, which should be based on manufacturer's hazard data available to your employer. Fumes and gases can be dangerous to your health. Arc rays can injure eyes and burn skin. Electric shock can kill. Read and understand the manufacturer's instructions and your employer's safety practices. Keep your head out of the fumes. Use enough ventilation, exhaust at the arc, or both, to keep fumes and gases from your breathing zone, and the general area. Wear correct eye, ear and body protection. Do not touch live electrical parts. U.K.: see WMA No.236 and 237 and HSE Guidance Note EH 40. U.S.A.: See American Standard Z 49.1 "Safety in Welding and Cutting", published by the American Welding Society, 550 Le Jeune Rd, Miami, Florida 33126-5699; OSHA Safety and Health Standards, 29 CFR 1910, available from U.S. Government printing office, Washington D.C. 20402-0001.

All national/local prescriptions remain applicable. The data given in this sheet relate to the unused product, unless specified otherwise. During usage dangerous products can be formed (welding fume, radiation, etc.).

#### **General Disclaimer**

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

#### **REACH Disclaimer**

This information is based on current knowledge. Consistency of data in the SDS with CSR is considered, as far as the information is available at the time of compilation

Temp Shaker

Temp Stick 100 Degree

By

Tempil

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Product form : Mixture  
Trade name : Tempilstik® 100 °F (38 °C)

**1.2. Relevant identified uses of the substance or mixture and uses advised against****1.2.1. Relevant identified uses**

Main use category : Professional use  
Use of the substance/mixture : Temperature indicator

**1.2.2. Uses advised against**

No additional information available

**1.3. Details of the supplier of the safety data sheet**

LA-CO Industries Europe S.A.S.  
Parc Industriel de la Plaine de  
l'Ain - Allée des Combès,  
01150.BLYES,France.  
Phone: +33 (0)4 74 46 23 23  
Fax: +33 (0)4 74 46 23 29  
E-mail: info@eu.laco.com  
Web: http://www.markal.com

**1.4. Emergency telephone number**

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

EU Member State	Officiele adviesorgaan	Adres	Telefoonnummer
AUSTRIA	Vergiftungsinformationszentrale (Poisons Information Centre)	Allgemeines Krankenhaus Waehringer Gautel 18-20 1090 Wien	+43 1 406 43 43
BELARUS	The Belarus Republican Poisons Centre	Gzhevatova str 58 Minsk 220115	+375 (0)17 201 9158
BELGIUM	Centre Anti-Poisons/Antigifocentrum c/o Hôpital Central de la Base - Reine Astrid	Rue Bruyn 1 B -1120 Bruxelles/Brussel	+32 70 245 245
BULGARIA	Национален токсикологичен информационен център National Clinical Toxicology Centre, Emergency Medical Institute "Pirogov"	21 Toleban Boulevard 1606 SOFIA	+359 2 9154 409
CROATIA	Poisons Control Centre Institute of Medical Research & Occupational Health	Ksaverska Cesta 2 P.O. Box 291 HR-10000 Zagreb	+385 1 234 8342
CZECH REPUBLIC	Toxikologické informační středisko Clinic For Occupational Medicine, 1st Medical Faculty, Charles University	Na Bojišti 1 120 00 Praha 2	+42 2 2491 9293 +42 2 2491 5402
DENMARK	Giftilinjen Bispebjerg Hospital	Bispebjerg Bakke 23, 60, 1 DK-2400 København NV	+45 82 12 12 12 +45 35 31 55 55
ESTONIA	Mürgistusteabekeskus	Gonsiori 29 15027 Tallinn	+372 626 93 90
FINLAND	Myrkytystietokeskus	P.O.B 340 (Haartmaninkatu 4) HUS SF - 00029 Helsinki	+358 9 471 977
FRANCE	ORFILA		+33 1 45 42 59 59
GERMANY	Berliner Betrieb für Zentrale Gesundheitliche Aufgaben	Oranienburger Strasse 285 13437 Berlin	+49 30 19240
GERMANY	Informations und Beratungszentrum für Vergiftungsfälle	Kirberger Straße, Gebäude 9 D-66421 Homburg/Saar	+49 6841 19240
GERMANY	Beratungstelle bei Vergiftungen, Klinische Toxikologie und Beratungsstelle bei Vergiftungen	Langenbeckstrasse 1 55131 Mainz	+49 6131 19240
GREECE	Poisons Information Centre	11527 Athens	+30 10 779 3777
HUNGARY	Országos Kémiai Biztonsági Intézet (National Institute of Chemical Safety) Egészségügyi Toxikológiai Tájékoztató Szolgálat (Health Toxicological Information Service)	1437 Budapest PO Box 839 1097 Budapest, Nagyvárad tér 2	+36 80 20 11 99
ICELAND	Eitrunamiðstöðin	Eitrunarmiðstöðin 108 Reykjavik	+354 543 22 22
IRELAND	National Poisons Information Centre	Beaumont Hospital PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2166



# Tempilstik® 100 °F (38 °C)

## Safety Data Sheet

according to Regulation (EC) No. 453/2010

LATVIA	Valsts Toksikoloģijas centra Saindēšanās un zāļu informācijas centrs	2 Hipocrate Street LV 1038 Riga	+371 67 04 24 73
LITHUANIA	Apsinuodijimų kontrolės ir informacijos biuras	Siltnamiu 29 2043 Vilnius	+370 5 236 20 52/+370 687 53 378
MALTA	Medicines & Poisons Info Office	Mater Del Hospital, Msida MSD 2090 Malta	25450000
NETHERLANDS	Nationaal Vergiftigingen Informatie Centrum National Institute for Public Health and the Environment, NB this service is only available to health professionals	Huispostnummer B 00.118, PO Box 85500 3508 GA Utrecht	+31 30 274 88 88
PORTUGAL	Centro de Informação Antivenenos Instituto Nacional de Emergência Médica (INEM)	Rua Almirante Barroso, 36 1000-013 Lisboa	808 250 143 (for use only in Portugal), +351 21 330 3284
ROMANIA	Biroul pentru Regulamentul Sanitar International si Informare Toxicologica	Str. Dr. Leonte Anastasievici Nr.1-3, Sector 5 50463 Bucuresti	+40 21 318 36 06
SLOVAKIA	Národné toxikologické informačné centrum University Hospital Bratislava	Limbová 5 833 05 Bratislava	+421 2 54 77 4 166
SPAIN	Servicio de Información Toxicológica Instituto Nacional de Toxicología, Departamento de Madrid	Calle Luis Cabrera 9 E-28002 Madrid	+34 91 562 04 20
SWEDEN	Giftinformationscentralen Swedish Poisons Information Centre, Karolinska Hospital	Box 60 500 SE-171 76 Stockholm	+46 8 33 12 31 (International) 112 (National)
SWITZERLAND	Centre Suisse d'Information Toxicologique	Freiestrasse 16 Postfach CH-8028 Zurich	+41 44 251 51 51 (International) 145 (National)

## SECTION 2: Hazards Identification

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Eye Irrit. 2 H319

Aquatic Chronic 2 H411

Full text of H-phrases: see section 16

### Adverse physicochemical, human health and environmental effects

No additional information available

### 2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

: Warning

Hazard statements (CLP)

: H319 - Causes serious eye irritation  
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (CLP)

: P264 - Wash hands thoroughly after handling  
P273 - Avoid release to the environment  
P280 - Wear eye protection, protective gloves  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P337+P313 - If eye irritation persists: Get medical advice/attention  
P391 - Collect spillage  
P501 - Dispose of contents/container to an authorised waste collection point

### 2.3. Other hazards

PBT: not yet assessed

vPvB: not yet assessed

## SECTION 3: Composition/Information on Ingredients

### 3.1. Substance

Not applicable

# Tempilstik® 100 °F (38 °C)

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according to Regulation (EC) No. 453/2010

### 3.2. Mixture

Name	Product Identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
tetradecanol	(CAS No) 112-72-1 (EC no) 204-000-3	80 - 90	Eye Irrit. 2, H319 Aquatic Chronic 2, H411

Full text of R- and H-phrases: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
- First-aid measures after skin contact : Wash with plenty of soap and water.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Do NOT induce vomiting.

### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after eye contact : Causes serious eye irritation.

### 4.3. Indication of any immediate medical attention and special treatment needed

All treatments should be based on observed signs and symptoms of distress in the patient.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

- Suitable extinguishing media : Foam, Dry powder, Carbon dioxide, Sand, Water spray.
- Unsuitable extinguishing media : None known.

### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : No specific fire or explosion hazard. Burning produces irritating, toxic and noxious fumes.
- Hazardous decomposition products in case of fire : Thermal decomposition generates : Carbon dioxide, Carbon monoxide, Mixture of hydrocarbons.

### 5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/ flame resistant/retardant clothing. EN469.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid contact with skin and eyes. Avoid creating or spreading dust.

#### 6.1.1. For non-emergency personnel

- Protective equipment : Chemical goggles or safety glasses. Dust impervious gloves.
- Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

- Protective equipment : Chemical goggles or safety glasses. Dust impervious gloves.
- Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Do not discharge into drains or the environment.

### 6.3. Methods and material for containment and cleaning up

- For containment : Avoid generating dust. Contain and collect as any solid.
- Methods for cleaning up : Minimize generation of dust. On land, sweep or shovel into suitable containers.

### 6.4. Reference to other sections

Section 13: disposal information, Section 7: safe handling, Section 8: personal protective equipment.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling : Avoid contact with skin and eyes.
- Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

# Tempilstik® 100 °F (38 °C)

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according to Regulation (EC) No. 453/2010

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Keep container tightly closed.
Incompatible products	: Strong oxidizers. Strong bases.
Prohibitions on mixed storage	: Keep away from incompatible materials.
Storage area	: Store in dry, cool, well-ventilated area.

### 7.3. Specific end use(s)

Temperature indicator.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Exposure controls

Appropriate engineering controls	: Avoid dispersal of dust in the air (ie, clearing dust surfaces with compressed air). Ensure good ventilation of the work station.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear dust impervious gloves. Use rubber gloves. EN374.
Eye protection	: Chemical goggles or safety glasses. EN166.
Respiratory protection	: Use air-purifying respirator equipped with particulate filtering cartridges. In case of inadequate ventilation wear respiratory protection. EN 12083.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: A solid crayon-like marker.
Colour	: No data available
Odour	: odourless.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: 38 °C
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

VOC content : 0 %

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known.

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

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according to Regulation (EC) No. 453/2010

### 10.4. Conditions to avoid

Keep away from incompatible materials. Avoid dust formation.

### 10.5. Incompatible materials

Strong bases. Strong oxidizers.

### 10.6. Hazardous decomposition products

Thermal decomposition generates : Carbon dioxide. Carbon monoxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

tetradecanol (112-72-1)	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	8000 mg/kg
LC50 inhalation rat (mg/l)	> 1.5 mg/l 1 h; no mortalities
ATE CLP (dermal)	8000.000 mg/kg bodyweight

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

tetradecanol (112-72-1)	
LOAEL (oral, rat, 90 days)	> 4257 mg/kg bodyweight/day read-across hexadecan-1-ol

Aspiration hazard : Not classified

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - water : Toxic to aquatic life with long lasting effects.

tetradecanol (112-72-1)	
LC50 fish 1	> 1 mg/l 96 h; O. mykiss
EC50 Daphnia 1	3.2 mg/l 48 h
NOEC (acute)	>= 1 mg/l

### 12.2. Persistence and degradability

Tempilstik® 100 °F (38 °C)	
Persistence and degradability	May cause long-term adverse effects in the environment.

tetradecanol (112-72-1)	
Persistence and degradability	Readily biodegradable.

### 12.3. Bioaccumulative potential

tetradecanol (112-72-1)	
BCF fish 1	33900 L/kg
Log Pow	5.5

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

Tempilstik® 100 °F (38 °C)	
PBT: not yet assessed	
vPvB: not yet assessed	

### 12.6. Other adverse effects

No additional information available

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according to Regulation (EC) No. 453/2010

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment.
European List of Waste (LoW) code	: For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used. 20 01 27* - paint, inks, adhesives and resins containing dangerous substances
H code	: H14 - 'Ecotoxic': waste which presents or may present immediate or delayed risks for one or more sectors of the environment. H4 - 'Irritant': non-corrosive substances and preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

### SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

#### 14.1. UN number

UN-No. (ADR)	: 3077
UN-No. (IATA)	: 3077
UN-No. (IMDG)	: 3077
UN-No. (ADN)	: 3077

#### 14.2. UN proper shipping name

Proper Shipping Name (ADR)	: Environmentally hazardous substance, solid, n.o.s. (tetradecanol)
Proper Shipping Name (IATA)	: Environmentally hazardous substance, solid, n.o.s. (tetradecanol)
Proper Shipping Name (IMDG)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (tetradecanol)
Proper Shipping Name (ADN)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (tetradecanol)
Transport document description (ADR)	: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (tetradecanol), 9, III, (E)

#### 14.3. Transport hazard class(es)

Class (ADR)	: 9
Classification code (ADR)	: M7
Class (IATA)	: 9
Class (IMDG)	: 9
Class (ADN)	: 9
Classification code (ADN)	: M7

#### 14.4. Packing group

Packing group (ADR)	: III
Packing group (IATA)	: III
Packing group (IMDG)	: III
Packing group (ADN)	: III

#### 14.5. Environmental hazards

Dangerous for the environment :



Other information : No supplementary information available.

#### 14.6. Special precautions for user

##### 14.6.1. Overland transport

Hazard identification number (Kemler No.)	: 90
Classification code (ADR)	: M7
Orange plates	:



Tunnel restriction code (ADR)	: E
EAC code	: 2Z

##### 14.6.2. Transport by sea

EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-F

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according to Regulation (EC) No. 453/2010

Stowage category (IMDG) : A

### 14.6.3. Inland waterway transport

Carriage prohibited (ADN) : No

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory Information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

Contains no substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

VOC content : 0 %

#### 15.1.2. National regulations

##### Germany

Water hazard class (WGK) : 3 - severe hazard to waters

WGK remark : Classification based on the R-phrases in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS)

#### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

according to Regulation (EC) No. 453/2010

Indication of changes:

Original Document.

Abbreviations and acronyms:

ACGIH (American Conference of Government Industrial Hygienists)
ATE: Acute Toxicity Estimate
CAS (Chemical Abstracts Service) number
CLP: Classification, Labelling, Packaging.
EC50: Environmental Concentration associated with a response by 50% of the test population.
GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
LD50: Lethal Dose for 50% of the test population
OSHA: Occupational Safety & Health Administration
PBT: Persistent, Bioaccumulative, Toxic
PNEC: Predicted No Effect Level
STEL: Short Term Exposure Limits
TSCA: Toxic Substances Control Act
TWA: Time Weight Average

Data sources : ACGIH 2000.  
Canadian Centre for Occupational Health and Safety. Accessed at:  
[http://www.ccohs.ca/oshanswers/legis/whmis\\_css/li.html](http://www.ccohs.ca/oshanswers/legis/whmis_css/li.html).  
ESIS (European chemical Substances Information System; accessed at:  
<http://esis.jrc.ec.europa.eu/index.php?PGM=clg>.  
European Chemicals Agency (ECHA) Registered Substances list. Accessed at  
<http://echa.europa.eu/>. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to  
Chemical Protective Clothing", Fifth Edition.  
National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th  
edition.  
OSHA 29CFR 1910.1200 Hazard Communication Standard.  
REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE  
COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and  
mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending  
Regulation (EC) No 1907/2006.  
TSCA Chemical Substance Inventory. Accessed at  
<http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.

Other information : None.

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## Safety Data Sheet

according to Regulation (EC) No. 453/2010

### Full text of R-, H- and EUH-phrases:

Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H319	Causes serious eye irritation
H411	Toxic to aquatic life with long lasting effects
R36	Irritating to eyes
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
N	Dangerous for the environment
Xi	Irritant

### Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Eye Irrit. 2	H319	Calculation method
Aquatic Chronic 2	H411	Calculation method

LA-CO EU CLP SDS

SDS Prepared by: The Redstone Group, LLC  
6077 Frantz Rd.  
Suite 206  
Dublin, OH USA 43016  
T 614-923-7472  
[www.redstonegrp.com](http://www.redstonegrp.com)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

Temp Stick 150 Degree

By

Tempil



# Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)  
Date of issue: 04/06/2015  
Revision date: 10/30/2015

Version: 2.0

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

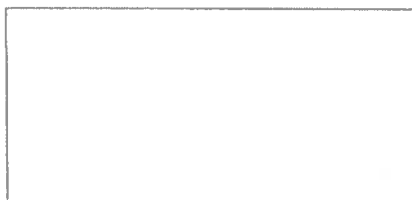
Product form : Mixture  
Trade name : Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Temperature indicator

### 1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.  
1201 Pratt Boulevard  
Elk Grove Village, IL. 60007-5746  
Phone: (847) 956-7600  
Fax: (847) 956-9885  
E-mail: customer\_service@laco.com



### 1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

Acute Tox. 4 (Oral) H302  
Acute Tox. 4 (Dermal) H312  
Acute Tox. 4 (Inhalation:dust,mist) H332  
STOT RE 2 H373

Full text of hazard classes and H-statements : see section 16

### 2.2. Label elements

#### GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

GHS08

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled  
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements (GHS-US) :

P260 - Do not breathe dust, fume  
P264 - Wash hands thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear protective gloves  
P301+P312 - If swallowed: Call a doctor, a POISON CENTER if you feel unwell  
P302+P352 - If on skin: Wash with plenty of water  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P312 - Call a POISON CENTER, a doctor if you feel unwell  
P314 - Get medical advice/attention if you feel unwell  
P321 - Specific treatment (see First aid measures on this label)  
P330 - Rinse mouth  
P362+P364 - Take off contaminated clothing and wash it before reuse  
P501 - Dispose of contents/container to an authorised waste collection point

# Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 28, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product Identifier	% (w/w)	GHS-US classification
acetacetanilide	(CAS No) 102-01-2	72.15 – 72.52 : 150 °F 75.63 – 76.02 : 158 °F 87.74 – 88.18 : 167 °F 84.23 – 85.65 : 169 °F 88.45 – 88.90 : 175 °F 82.01 – 82.42 : 163 °F	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 STOT RE 2, H373
butyl 4-hydroxybenzoate	(CAS No) 94-26-8	5.62 – 5.67 : 175 °F	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
Cobalt compound	(CAS No) trade secret	1.56 : 163 °F	Comb. Dust, H232 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
First-aid measures after skin contact	: Immediately call a POISON CENTER or doctor/physician. Wash with plenty of soap and water. Wash contaminated clothing before reuse.
First-aid measures after eye contact	: In case of contact, immediately flush eyes with plenty of water.
First-aid measures after ingestion	: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries	: May cause damage to organs through prolonged or repeated exposure.
Symptoms/injuries after inhalation	: Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.
Symptoms/injuries after skin contact	: Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin.
Symptoms/injuries after ingestion	: Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Sand. Water spray.
Unsuitable extinguishing media	: None known.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard	: No specific fire or explosion hazard. Burning produces irritating, toxic and noxious fumes.
Reactivity	: No dangerous reactions known.

### 5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/flame resistant/retardant clothing.

# Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Always approach spills or fires from upwind/uphill. Avoid creating or spreading dust. Avoid contact with skin and eyes.

##### 6.1.1. For non-emergency personnel

Protective equipment : Wear suitable gloves resistant to chemical penetration. In case of inadequate ventilation wear respiratory protection.

Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

Protective equipment : Wear suitable gloves resistant to chemical penetration. Where excessive dust may result, use approved respiratory protection equipment.

Emergency procedures : Ventilate area.

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

For containment : Avoid generating dust. Contain and collect as any solid.

Methods for cleaning up : Minimize generation of dust. On land, sweep or shovel into suitable containers.

#### 6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Use only outdoors or in a well-ventilated area. Avoid breathing dust, fume.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed.

Incompatible products : Strong oxidizers. Strong bases.

Prohibitions on mixed storage : Keep away from incompatible materials.

Storage area : Store in dry, cool, well-ventilated area.

#### 7.3. Specific end use(s)

Temperature indicator.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

ACGIH : Not applicable

OSHA : Not applicable

##### acetoacetanilide (102-01-2)

ACGIH : Not applicable

OSHA : Not applicable

##### butyl 4-hydroxybenzoate (94-26-8)

ACGIH : Not applicable

OSHA : Not applicable

##### Cobalt compound (trade secret)

ACGIH : Not applicable

OSHA : Not applicable

# Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 8.2. Exposure controls

Appropriate engineering controls	: Avoid dispersal of dust in the air (ie, clearing dust surfaces with compressed air). Ensure good ventilation of the work station.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear dust impervious gloves.
Eye protection	: In case of dust production: protective goggles.
Respiratory protection	: Use air-purifying respirator equipped with particulate filtering cartridges. In case of inadequate ventilation wear respiratory protection.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: Variable.
Odour	: odourless.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other Information

VOC content	: 0 %
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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known.

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Keep away from incompatible materials. Avoid dust formation.

### 10.5. Incompatible materials

Strong bases. Strong oxidizers.

### 10.6. Hazardous decomposition products

Thermal decomposition generates : Carbon dioxide. Carbon monoxide.

## SECTION 11: Toxicological Information

# Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 11.1. Information on toxicological effects

**Acute toxicity** : Oral: Harmful if swallowed. Dermal: Harmful in contact with skin. Inhalation:dust,mist: Harmful if inhaled.

**Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)**

ATE CLP (oral) 1278.978 mg/kg bodyweight  
ATE CLP (dermal) 1243.922 mg/kg bodyweight  
ATE CLP (dust,mist) 1.696 mg/l/4h

#### acetoacetanilide (102-01-2)

LD50 oral rat 1131 (1131 - 4650) mg/kg  
ATE CLP (oral) 1131.000 mg/kg bodyweight  
ATE CLP (dermal) 1100.000 mg/kg bodyweight  
ATE CLP (dust,mist) 1.500 mg/l/4h

#### butyl 4-hydroxybenzoate (94-26-8)

LD50 oral rat 13200 mg/kg  
ATE CLP (oral) 13200.000 mg/kg bodyweight

**Skin corrosion/irritation** : Not classified  
**Serious eye damage/irritation** : Not classified  
**Respiratory or skin sensitisation** : Not classified  
**Germ cell mutagenicity** : Not classified  
**Carcinogenicity** : Not classified

**Reproductive toxicity** : Not classified  
**Specific target organ toxicity (single exposure)** : Not classified

**Specific target organ toxicity (repeated exposure)** : May cause damage to organs through prolonged or repeated exposure.

#### acetoacetanilide (102-01-2)

NOAEL (oral, rat, 90 days) 12 mg/kg bodyweight/day 28 days  
Additional information Affected organs: blood  
Route of exposure: oral

**Aspiration hazard** : Not classified

#### Potential adverse human health effects and symptoms

**Symptoms/injuries after inhalation** : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.  
**Symptoms/injuries after skin contact** : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin.  
**Symptoms/injuries after ingestion** : Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.  
**Likely routes of exposure** : Inhalation;Skin and eye contact

## SECTION 12: Ecological Information

### 12.1 Toxicity

#### acetoacetanilide (102-01-2)

LC50 fish 1 242 (242 - 332) mg/l 96 hours, Brachydanio rerio  
ErC50 (algae) 318 mg/l Selenastrum capricornutum , 72 hours  
ErC50 (other aquatic plants) 500 mg/l 3 hours  
NOEC chronic algae 180 mg/l

### 12.2. Persistence and degradability

#### acetoacetanilide (102-01-2)

Persistence and degradability Readily biodegradable.  
Biodegradation 97 % degraded after 6 days

### 12.3. Bioaccumulative potential

#### acetoacetanilide (102-01-2)

Log Pow 0.76

# Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

## Safety Data Sheet

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according to Canadian Hazardous Products Regulations (HPR)

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

In accordance with DOT and TDG

Not considered a dangerous good for transport regulations

Proper Shipping Name (ADR) : Not applicable

Transport hazard class(es) (ADR) :

### Transport by sea

Transport hazard class(es) (IMDG) :

### Air transport

Transport hazard class(es) (IATA) :

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### acetoacetanilide (102-01-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### butyl 4-hydroxybenzoate (94-26-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. International regulations

#### CANADA

#### acetoacetanilide (102-01-2)

Listed on the Canadian DSL (Domestic Substances List) inventory.

#### butyl 4-hydroxybenzoate (94-26-8)

Listed on the Canadian DSL (Domestic Substances List) inventory.

#### EU-Regulations

#### acetoacetanilide (102-01-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### butyl 4-hydroxybenzoate (94-26-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### National regulations

Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).

All ingredients are listed in the Toxic Substances Control Act (TSCA).

All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

### 15.3. US State regulations

No additional information available

## SECTION 16: Other information

Indication of changes : Added. Product.

# Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

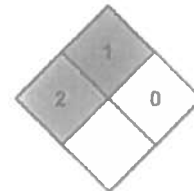
## Safety Data Sheet

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according to Canadian Hazardous Products Regulations (HPR)

**Data sources** : ACGIH 2000.  
Canadian Centre for Occupational Health and Safety. Accessed at: [http://www.ccohs.ca/oshanswers/legisl/whms\\_classification.html](http://www.ccohs.ca/oshanswers/legisl/whms_classification.html).  
ESIS (European Chemical Substances Information System); accessed at: <http://esis.jrc.ec.europa.eu/index.php?PGM=cla>.  
European Chemicals Agency (ECHA) Registered Substances list. Accessed at <http://echa.europa.eu/>. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.  
National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition.  
OSHA 29CFR 1910.1200 Hazard Communication Standard.  
REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

**Abbreviations and acronyms** : TSCA Chemical Substance Inventory. Accessed at <http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.  
ACGIH (American Conference of Government Industrial Hygienists).  
ATE: Acute Toxicity Estimate.  
CAS (Chemical Abstracts Service) number.  
CLP: Classification, Labelling, Packaging.  
EC50: Environmental Concentration associated with a response by 50% of the test population.  
GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).  
LD50: Lethal Dose for 50% of the test population.  
OSHA: Occupational Safety & Health Administration.  
STEL: Short Term Exposure Limits.  
TSCA: Toxic Substances Control Act.  
TWA: Time Weight Average.

**Other information** : None.  
**NFPA health hazard** : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.  
**NFPA fire hazard** : 1 - Must be preheated before ignition can occur.  
**NFPA reactivity** : 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



### Full text of H-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Comb. Dust	Combustible Dust
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H232	May form combustible dust concentrations in air
H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure

SDS Prepared by: The Redstone Group, LLC  
6077 Frantz Rd.  
Suite 206  
Dublin, OH USA 43018

# Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

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T 614-923-7472

[www.redsioneurp.com](http://www.redsioneurp.com)

LACO NA GHS SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*



Temp Stick 175 Degree

By

Tempil

**Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)** ~~175 °F (79 °C)~~

LA-CO Industries, Inc.

according to Federal Register / Vol 77 No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)  
Date of issue: 04/06/2015  
Revision date: 10/30/2015

Version: 2.0

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product Identifier

Product form : Mixture  
Trade name : Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Temperature indicator

### 1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.  
1201 Pratt Boulevard  
Elk Grove Village, IL. 60007-5746  
Phone: (847) 956-7600  
Fax: (847) 956-9885  
E-mail: customer\_service@laco.com



### 1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

## SECTION 2: Hazards Identification

### 2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

Acute Tox. 4 (Oral) H302  
Acute Tox. 4 (Dermal) H312  
Acute Tox. 4 (Inhalation:dust,mist) H332  
STOT RE 2 H373

Full text of hazard classes and H-statements : see section 16

### 2.2. Label elements

#### GHS-US labelling

Hazard pictograms (GHS-US)



GHS07

GHS08

Signal word (GHS-US)

: Warning

Hazard statements (GHS-US)

: H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled  
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements (GHS-US)

: P260 - Do not breathe dust, fume  
P264 - Wash hands thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear protective gloves  
P301+P312 - If swallowed: Call a doctor, a POISON CENTER if you feel unwell  
P302+P352 - If on skin: Wash with plenty of water  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P312 - Call a POISON CENTER, a doctor if you feel unwell  
P314 - Get medical advice/attention if you feel unwell  
P321 - Specific treatment (see First aid measures on this label)  
P330 - Rinse mouth  
P362+P364 - Take off contaminated clothing and wash it before reuse  
P501 - Dispose of contents/container to an authorised waste collection point

# Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product Identifier	% (w/w)	GHS-US classification
acetoacetanilide	(CAS No) 102-01-2	72.15 – 72.52 : 150 °F 75.63 – 76.02 : 158 °F 87.74 – 88.18 : 187 °F 84.23 – 85.65 : 169 °F 88.45 – 88.90 : 175 °F 82.01 – 82.42 : 163 °F	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 STOT RE 2, H373
butyl 4-hydroxybenzoate	(CAS No) 94-26-8	5.62 – 5.67 : 175 °F	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
Cobalt compound	(CAS No) trade secret	1.56 : 163 °F	Comb. Dust, H232 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- First-aid measures after Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
- First-aid measures after skin contact : Immediately call a POISON CENTER or doctor/physician. Wash with plenty of soap and water. Wash contaminated clothing before reuse.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water.
- First-aid measures after ingestion : Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : May cause damage to organs through prolonged or repeated exposure.
- Symptoms/injuries after inhalation : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.
- Symptoms/injuries after skin contact : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin.
- Symptoms/injuries after ingestion : Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

- Suitable extinguishing media : Foam, Dry powder, Carbon dioxide, Sand, Water spray.
- Unsuitable extinguishing media : None known.

### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : No specific fire or explosion hazard. Burning produces irritating, toxic and noxious fumes.
- Reactivity : No dangerous reactions known.

### 5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/flame resistant/retardant clothing.

# Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Always approach spills or fires from upwind/uphill. Avoid creating or spreading dust. Avoid contact with skin and eyes.

##### 6.1.1. For non-emergency personnel

Protective equipment : Wear suitable gloves resistant to chemical penetration. In case of inadequate ventilation wear respiratory protection.

Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

Protective equipment : Wear suitable gloves resistant to chemical penetration. Where excessive dust may result, use approved respiratory protection equipment.

Emergency procedures : Ventilate area.

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

For containment : Avoid generating dust. Contain and collect as any solid.

Methods for cleaning up : Minimize generation of dust. On land, sweep or shovel into suitable containers.

#### 6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Use only outdoors or in a well-ventilated area. Avoid breathing dust, fume.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed.

Incompatible products : Strong oxidizers. Strong bases.

Prohibitions on mixed storage : Keep away from incompatible materials.

Storage area : Store in dry, cool, well-ventilated area.

#### 7.3. Specific end use(s)

Temperature indicator.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

**Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)**

ACGIH Not applicable

OSHA Not applicable

**acetoacetanilide (102-01-2)**

ACGIH Not applicable

OSHA Not applicable

**butyl 4-hydroxybenzoate (94-26-8)**

ACGIH Not applicable

OSHA Not applicable

**Cobalt compound (trade secret)**

ACGIH Not applicable

OSHA Not applicable

# Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 8.2. Exposure controls

Appropriate engineering controls	: Avoid dispersal of dust in the air (ie, clearing dust surfaces with compressed air). Ensure good ventilation of the work station.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear dust impervious gloves.
Eye protection	: In case of dust production: protective goggles.
Respiratory protection	: Use air-purifying respirator equipped with particulate filtering cartridges. In case of inadequate ventilation wear respiratory protection.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: Variable.
Odour	: odourless.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other Information

VOC content	: 0 %
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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known.

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Keep away from incompatible materials. Avoid dust formation.

### 10.5. Incompatible materials

Strong bases. Strong oxidizers.

### 10.6. Hazardous decomposition products

Thermal decomposition generates : Carbon dioxide. Carbon monoxide.

## SECTION 11: Toxicological information

# Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 11.1. Information on toxicological effects

**Acute toxicity** : Oral: Harmful if swallowed, Dermal: Harmful in contact with skin, Inhalation:dust,mist; Harmful if inhaled,

Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)	
ATE CLP (oral)	1278.978 mg/kg bodyweight
ATE CLP (dermal)	1243.922 mg/kg bodyweight
ATE CLP (dust,mist)	1.696 mg/l/4h
<b>acetoacetanilide (102-01-2)</b>	
LD50 oral rat	1131 (1131 - 4650) mg/kg
ATE CLP (oral)	1131.000 mg/kg bodyweight
ATE CLP (dermal)	1100.000 mg/kg bodyweight
ATE CLP (dust,mist)	1.500 mg/l/4h
<b>butyl 4-hydroxybenzoate (94-26-8)</b>	
LD50 oral rat	13200 mg/kg
ATE CLP (oral)	13200.000 mg/kg bodyweight

**Skin corrosion/irritation** : Not classified

**Serious eye damage/irritation** : Not classified

**Respiratory or skin sensitisation** : Not classified

**Germ cell mutagenicity** : Not classified

**Carcinogenicity** : Not classified

**Reproductive toxicity** : Not classified

**Specific target organ toxicity (single exposure)** : Not classified

**Specific target organ toxicity (repeated exposure)** : May cause damage to organs through prolonged or repeated exposure.

acetoacetanilide (102-01-2)	
NOAEL (oral, rat, 90 days)	12 mg/kg bodyweight/day 28 days
Additional information	Affected organs: blood Route of exposure: oral

**Aspiration hazard** : Not classified

#### Potential adverse human health effects and symptoms

**Symptoms/injuries after inhalation** : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.

**Symptoms/injuries after skin contact** : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin.

**Symptoms/injuries after ingestion** : Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.

**Likely routes of exposure** : Inhalation;Skin and eye contact

## SECTION 12: Ecological information

### 12.1 Toxicity

acetoacetanilide (102-01-2)	
LC50 fish 1	242 (242 - 332) mg/l 96 hours, Brachydanio rerio
ErC50 (algae)	318 mg/l Selenastrum capricornutum , 72 hours
ErC50 (other aquatic plants)	500 mg/l 3 hours
NOEC chronic algae	180 mg/l

### 12.2. Persistence and degradability

acetoacetanilide (102-01-2)	
Persistence and degradability	Readily biodegradable.
Biodegradation	97 % degraded after 6 days

### 12.3. Bioaccumulative potential

acetoacetanilide (102-01-2)	
Log Pow	0.76

# Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

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### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

In accordance with DOT and TDG

Not considered a dangerous good for transport regulations

Proper Shipping Name (ADR) : Not applicable

Transport hazard class(es) (ADR) :

### Transport by sea

Transport hazard class(es) (IMDG) :

### Air transport

Transport hazard class(es) (IATA) :

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### acetoacetanilide (102-01-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### butyl 4-hydroxybenzoate (94-26-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. International regulations

#### CANADA

#### acetoacetanilide (102-01-2)

Listed on the Canadian DSL (Domestic Substances List) inventory.

#### butyl 4-hydroxybenzoate (94-26-8)

Listed on the Canadian DSL (Domestic Substances List) inventory.

#### EU-Regulations

#### acetoacetanilide (102-01-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### butyl 4-hydroxybenzoate (94-26-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### National regulations

Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).

All ingredients are listed in the Toxic Substances Control Act (TSCA).

All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

### 15.3. US State regulations

No additional information available

## SECTION 16: Other information

Indication of changes : Added. Product.

# Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)

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### Data sources

ACGIH 2000.

Canadian Centre for Occupational Health and Safety. Accessed at:  
[http://www.ccohs.ca/oshanswers/legisl/whmis\\_classifi.html](http://www.ccohs.ca/oshanswers/legisl/whmis_classifi.html).

ESIS (European chemical Substances Information System; accessed at:  
<http://esis.irc.ec.europa.eu/index.php?PGM=cla>.

European Chemicals Agency (ECHA) Registered Substances list. Accessed at  
<http://echa.europa.eu/>. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.

National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition.

OSHA 29CFR 1910.1200 Hazard Communication Standard.

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

TSCA Chemical Substance Inventory. Accessed at  
<http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.

### Abbreviations and acronyms

: ACGIH (American Conference of Government Industrial Hygienists).

ATE: Acute Toxicity Estimate.

CAS (Chemical Abstracts Service) number.

CLP: Classification, Labelling, Packaging.

EC50: Environmental Concentration associated with a response by 50% of the test population.

GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).

LD50: Lethal Dose for 50% of the test population.

OSHA: Occupational Safety & Health Administration.

STEL: Short Term Exposure Limits.

TSCA: Toxic Substances Control Act.

TWA: Time Weight Average.

### Other information

: None.

### NFPA health hazard

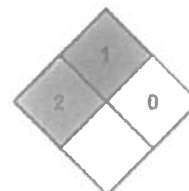
: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

### NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

### NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



### Full text of H-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Comb. Dust	Combustible Dust
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H232	May form combustible dust concentrations in air
H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure

SDS Prepared by: The Redstone Group, LLC  
6077 Frantz Rd.  
Suite 206  
Dublin, OH USA 43016



**Tempilstik® 150 °F (66 °C), 158 °F (70 °C), 163 °F (73 °C), 167 °F (75 °C), 169 °F (76 °C), 175 °F (79 °C)**

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T 614-923-7472

[www.fedsticnet.com](http://www.fedsticnet.com)

LACO NA GHS SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

Temp Stick 200 Degree

By

Tempil

✱ ✱

**Tempilstik® : 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)**

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 Date of issue: 04/22/2015  
 Version: 1.0

LA-CO Industries, Inc.

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1. Product Identifier**

Product form : Mixture  
 Trade name : Tempilstik® 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

Use of the substance/mixture : Temperature indicator

**1.3. Details of the supplier of the safety data sheet**

LA-CO Industries, Inc.  
 1201 Pratt Boulevard  
 Elk Grove Village, IL. 60007-5746  
 Phone: (847) 956-7600  
 Fax: (847) 956-9885  
 E-mail: customer\_service@laco.com



**1.4. Emergency telephone number**

Emergency number : 24-hour emergency. CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

**SECTION 2: Hazards Identification**

**2.1. Classification of the substance or mixture**

Classification in accordance with the Globally Harmonized Standard

Not classified

**2.2. Label elements**

GHS-US labelling

No labelling applicable

**2.3. Other hazards**

No additional information available

**2.4. Unknown acute toxicity (GHS US)**

No additional information available

**SECTION 3: Composition/Information on Ingredients**

**3.1. Substance**

Not applicable

**3.2. Mixture**

Name	Product identifier	% (w/w)	GHS-US classification
2',4'-dimethylacetoacetanilide	(CAS No) 97-36-9	84.79 : 182 °F	Acute Tox. 4 (Oral), H302
adipic acid	(CAS No) 124-04-9	6.38 : 383 °F 4.67 : 388 °F 4.71 : 392 °F	Eye Irrit. 2A, H319
salicylamide	(CAS No) 65-45-2	8.24 : 206 °F	Acute Tox. 4 (Oral), H302

**Tempilstik®** : 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)

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Name	Product Identifier	% (w/w)	GHS-US classification
Iron oxide red	(CAS No) 1309-37-1	1.69 : 263 °F 0.21 – 0.3 : 320 °F 0.79 : 1400 °F 0.84 – 1.22 : 1600 °F 1.52 : 1950 °F	Aquatic Chronic 2, H411
butyl 4-hydroxybenzoate	(CAS No) 94-26-8	0.91 : 182 °F	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
phenyl salicylate	(CAS No) 118-55-8	4.1 – 4.14 : 104 °F	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
lithium sulphate	(CAS No) 10377-48-7	1.9 : 1500 °F 1.88 : 1600 °F	Acute Tox. 4 (Oral), H302

Full text of H-phrases: see section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- First-aid measures after skin contact : Wash with plenty of soap and water.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water.
- First-aid measures after ingestion : Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

#### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause respiratory irritation.
- Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Sand. Water spray.
- Unsuitable extinguishing media : None known.

#### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : No specific fire or explosion hazard. Burning produces irritating, toxic and noxious fumes.
- Reactivity : No dangerous reactions known.

#### 5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/ flame resistant/retardant clothing.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid creating or spreading dust.

##### 6.1.1. For non-emergency personnel

- Protective equipment : Wear suitable gloves.
- Emergency procedures : Evacuate unnecessary personnel.

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**6.1.2. For emergency responders**

Protective equipment : Wear suitable gloves.  
 Emergency procedures : Ventilate area.

**6.2. Environmental precautions**

Avoid release to the environment.

**6.3. Methods and material for containment and cleaning up**

For containment : Avoid generating dust. Contain and collect as any solid.  
 Methods for cleaning up : Minimize generation of dust. On land, sweep or shovel into suitable containers.

**6.4. Reference to other sections**

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

**7.2. Conditions for safe storage, including any incompatibilities**

Storage conditions : Keep container tightly closed.  
 Incompatible products : Strong oxidizers. Strong bases.  
 Prohibitions on mixed storage : Keep away from incompatible materials.  
 Storage area : Store in dry, cool, well-ventilated area.

**7.3. Specific end use(s)**

Temperature indicator.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

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ACGIH Not applicable

OSHA Not applicable

**phenyl salicylate (118-55-8)**

ACGIH Not applicable

OSHA Not applicable

**butyl 4-hydroxybenzoate (84-26-8)**

ACGIH Not applicable

OSHA Not applicable

**2',4'-dimethylacetoacetanilide (97-36-9)**

ACGIH Not applicable

OSHA Not applicable

**salicylamide (65-45-2)**

ACGIH Not applicable

OSHA Not applicable

**Iron oxide red (1309-37-1)**

ACGIH ACGIH TWA (mg/m³) 5 mg/m³

**Tempilstik®** : 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)

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<b>Iron oxide red (1309-37-1)</b>		
ACGIH	Remark (ACGIH)	Pneumoconiosis
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (Fer, trioxyde de, fumées et poussières (exprimée en Fe)) 10 mg/m <sup>3</sup> (Rouge)
<b>adipic acid (124-04-9)</b>		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
ACGIH	Remark (ACGIH)	URT irr, ANS impair
OSHA	Not applicable	
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>lithium sulphate (10377-48-7)</b>		
ACGIH	Not applicable	
OSHA	Not applicable	

**8.2. Exposure controls**

- Appropriate engineering controls : Avoid dispersal of dust in the air (ie, cleaning dust surfaces with compressed air). Ensure good ventilation of the work station.
- Personal protective equipment : Avoid all unnecessary exposure.
- Hand protection : Wear dust impervious gloves.
- Eye protection : In case of dust production: protective goggles.
- Respiratory protection : In case of inadequate ventilation wear respiratory protection. Use air-purifying respirator equipped with particulate filtering cartridges.

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

- Physical state : Solid
- Appearance : A solid crayon-like marker.
- Colour : Variable.
- Odour : odourless.
- Odour threshold : No data available
- pH : No data available
- Relative evaporation rate (butyl acetate=1) : No data available
- Melting point : No data available
- Freezing point : No data available
- Boiling point : No data available
- Flash point : No data available
- Auto-ignition temperature : No data available
- Decomposition temperature : No data available
- Flammability (solid, gas) : No data available
- Vapour pressure : No data available
- Relative vapour density at 20 °C : No data available
- Relative density : No data available
- Solubility : No data available
- Log Pow : No data available
- Log Kow : No data available
- Viscosity, kinematic : No data available
- Viscosity, dynamic : No data available
- Explosive properties : No data available
- Oxidising properties : No data available

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Explosive limits : No data available

**9.2. Other information**

VOC content : 0 %

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

No dangerous reactions known.

**10.2. Chemical stability**

The product is stable at normal handling and storage conditions.

**10.3. Possibility of hazardous reactions**

Hazardous polymerization will not occur.

**10.4. Conditions to avoid**

Keep away from incompatible materials. Avoid dust formation.

**10.5. Incompatible materials**

Strong bases. Strong oxidizers.

**10.6. Hazardous decomposition products**

Thermal decomposition generates : Carbon dioxide. Carbon monoxide.

**SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**

Acute toxicity : Oral: Not classified.

**phenyl salicylate (118-55-8)**

LD50 oral rat	3000 mg/kg
ATE CLP (oral)	3000.000 mg/kg bodyweight

**butyl 4-hydroxybenzoate (94-26-8)**

LD50 oral rat	13200 mg/kg
ATE CLP (oral)	13200.000 mg/kg bodyweight

**2',4'-dimethylacetacetanilide (97-36-9)**

LD50 oral rat	1995 mg/kg
ATE CLP (oral)	1995.000 mg/kg bodyweight

**salicylamide (65-45-2)**

LD50 oral rat	1400 mg/kg
ATE CLP (oral)	1400.000 mg/kg bodyweight

**Iron oxide red (1309-37-1)**

LD50 oral rat	> 10000 mg/kg
---------------	---------------

**adipic acid (124-04-9)**

LD50 oral rat	5560 mg/kg
LD50 dermal rabbit	7940 ml/kg
LC50 Inhalation rat (mg/l)	> 7.7 mg/l/4h
ATE CLP (oral)	5560.000 mg/kg bodyweight

**lithium sulphate (10377-48-7)**

LD50 oral rat	613 mg/kg
ATE CLP (oral)	613.000 mg/kg bodyweight

Skin corrosion/irritation : Not classified  
 Serious eye damage/irritation : Not classified.  
 Respiratory or skin sensitisation : Not classified  
 Germ cell mutagenicity : Not classified  
 Carcinogenicity : Not classified.

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**Iron oxide red (1309-37-1)**

IARC group : 3 - Not classifiable  
 National Toxicology Program (NTP) Status : Not listed in carcinogenicity class

**lithium sulphate (10377-48-7)**

NOAEL (chronic, oral, animal/male, 2 years) : 15 mg/kg bodyweight

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

**adipic acid (124-04-9)**

NOAEL (oral, rat, 90 days) : 750 mg/kg bodyweight/day

Aspiration hazard : Not classified

**Potential adverse human health effects and symptoms**

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating.

Likely routes of exposure : Inhalation; Skin and eye contact

**SECTION 12: Ecological Information**

**12.1 Toxicity**

**2',4'-dimethylacetoacetanilide (97-36-9)**

LC50 fish 1 : 250 (250 - 350) mg/l

**salicylamide (85-45-2)**

LC50 fish 1 : 101 mg/l 96 h

EC50 Daphnia 1 : 75 mg/l 24 h

**Iron oxide red (1309-37-1)**

EC50 Daphnia 1 : > 100 mg/l

**adipic acid (124-04-9)**

LC50 fish 1 : >= 1000 mg/l 96 h

EC50 Daphnia 1 : 46 mg/l 48 h

**lithium sulphate (10377-48-7)**

LC50 fish 1 : 30.3 mg/l read-across, 96 h

EC50 Daphnia 1 : 33.2 mg/l read across, 48 h

LOEC (chronic) : 24.35 mg/l read-across lithium hydroxide monohydrate

NOEC (chronic) : 17.35 mg/l read-across lithium hydroxide monohydrate

**12.2. Persistence and degradability**

**phenyl salicylate (118-55-8)**

Persistence and degradability : Moderately biodegradable.

**2',4'-dimethylacetoacetanilide (97-36-9)**

Biodegradation : 25 % 28 d

**salicylamide (85-45-2)**

Biodegradation : 99 % 28 d

**adipic acid (124-04-9)**

Persistence and degradability : Readily biodegradable.

Biodegradation : 90 % 5 d

**12.3. Bioaccumulative potential**

**phenyl salicylate (118-55-8)**

Log Pow : 3.82

Bioaccumulative potential : Not established.



**Tempilstik®** : 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)

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<b>2',4'-dimethylacetoacetanilide (97-36-9)</b>	
Log Pow	1.4
<b>salicylamide (65-45-2)</b>	
Log Pow	1.31
<b>adipic acid (124-04-9)</b>	
BCF fish 1	3.162
Log Pow	0.093
<b>lithium sulphate (10377-48-7)</b>	
Log Pow	-4.38

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

### SECTION 14: Transport information

In accordance with DOT and TDG

Not considered a dangerous good for transport regulations

Proper Shipping Name (ADR) : Not applicable

#### Transport by sea

No additional information available

#### Air transport

No additional information available

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### phenyl salicylate (118-55-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### butyl 4-hydroxybenzoate (94-26-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### 2',4'-dimethylacetoacetanilide (97-36-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### salicylamide (65-45-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### Iron oxide red (1309-37-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### adipic acid (124-04-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

RQ (Reportable quantity, section 304 of EPA's 5000 lb List of Lists)

##### lithium sulphate (10377-48-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

**Tempilstik®** : 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)

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according to Canadian Hazardous Products Regulations (HPR)

### 15.2. International regulations

#### CANADA

**phenyl salicylate (118-55-8)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

**butyl 4-hydroxybenzoate (94-26-8)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

**2',4'-dimethylacetoacetanilide (97-36-9)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

**salicylamide (65-45-2)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

**Iron oxide red (1309-37-1)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

**adipic acid (124-04-9)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

**lithium sulphate (10377-48-7)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

#### EU-Regulations

**phenyl salicylate (118-55-8)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**butyl 4-hydroxybenzoate (94-26-8)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**2',4'-dimethylacetoacetanilide (97-36-9)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**salicylamide (65-45-2)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**Iron oxide red (1309-37-1)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**adipic acid (124-04-9)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**lithium sulphate (10377-48-7)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### National regulations

**Tempilstik®** 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).

All ingredients are listed in the Toxic Substances Control Act (TSCA).

All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

### 15.3. US State regulations

**Iron oxide red (1309-37-1)**

U.S. - Minnesota - Hazardous Substance List

U.S. - New Jersey - Right to Know Hazardous Substance List

**adipic acid (124-04-9)**

U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

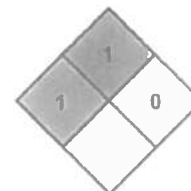
**Tempilstik®** : 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)

**Safety Data Sheet**

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

**SECTION 16: Other Information**

Indication of changes	: Original Document.
Data sources	: ACGIH (American Conference of Government Industrial Hygienists). European Chemicals Agency (ECHA) C&L Inventory database. Accessed at <a href="http://echa.europa.eu/web/ques...formation-on-chemicals/cl-inventory-database">http://echa.europa.eu/web/ques...formation-on-chemicals/cl-inventory-database</a> . Kristen Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition. OSHA 29CFR 1910.1200 Hazard Communication Standard. TSCA Chemical Substance Inventory. Accessed at <a href="http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html">http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html</a> .
Abbreviations and acronyms	: ATE: Acute Toxicity Estimate. CAS (Chemical Abstracts Service) number. CLP: Classification, Labelling, Packaging. EC50: Environmental Concentration associated with a response by 50% of the test population. GHS: Globally Harmonized System (of Classification and Labeling of Chemicals). LD50: Lethal Dose for 50% of the test population. OSHA: Occupational Safety & Health Administration. PBT: Persistent, Bioaccumulative, Toxic. TWA: Time Weight Average. TSCA: Toxic Substances Control Act.
Other information	: None.
NFPA health hazard	: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard	: 1 - Must be preheated before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



**Full text of H-phrases:**

Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Carc. 1A	Carcinogenicity, Category 1A
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H350	May cause cancer
H411	Toxic to aquatic life with long lasting effects

**SDS Prepared by:** The Redstone Group, LLC  
6077 Frantz Rd.  
Suite 206  
Dublin, OH USA 43016  
T 614-923-7472  
[www.redstonegrp.com](http://www.redstonegrp.com)

**LACO NA GHS SDS**

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

Temp Stick 250 Degree

By

Tempil

Tempilstik® 185 °F (85 °C), 188 °F (87 °C), 250 °F (121 °C), 425 °F (218 °C), 428 °F (220 °C), 1250 °F (677 °C), 248 °F (120 °C)

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)  
Date of issue: 11/16/2015  
Revision date: 12/29/2015

Version: 2.0

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product Identifier

Product form : Mixture  
Trade name : Tempilstik® 185 °F (85 °C), 188 °F (87 °C), 250 °F (121 °C), 425 °F (218 °C), 428 °F (220 °C), 1250 °F (677 °C), 248 °F (120 °C)

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Temperature indicator

### 1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.  
1201 Pratt Boulevard  
Elk Grove Village, IL. 60007-5746  
Phone: (847) 956-7600  
Fax: (847) 956-9885  
E-mail: customer\_service@laco.com



### 1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

Carc. 2 H351

Full text of hazard classes and H-statements : see section 16

### 2.2. Label elements

#### GHS-US labelling

Hazard pictograms (GHS-US)



GHS08

Signal word (GHS-US) : Warning  
Hazard statements (GHS-US) : H351 - Suspected of causing cancer (Inhalation)  
Precautionary statements (GHS-US) : P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P280 - Wear protective gloves  
P308+P313 - If exposed or concerned: Get medical advice/attention  
P405 - Store locked up  
P501 - Dispose of contents/container to an authorised waste collection point

### 2.3. Other hazards

### 2.4. Unknown acute toxicity (GHS US)

3.09 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)  
3.09 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)  
3.09 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

# Tempilstik® 185 °F (85 °C), 188 °F (87 °C), 250 °F (121 °C), 425 °F (218 °C), 428 °F (220 °C), 1250 °F (677 °C), 248 °F (120 °C)

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### 3.2. Mixture

Name	Product Identifier	% (w/w)	GHS-US classification
2',4'-dimethylacetoacetanilide	(CAS No) 97-36-9	79.74 : 185 °F 86.46 : 188 °F	Acute Tox. 4 (Oral), H302
Carbon black	(CAS No) 1333-86-4	13.46 : 185 °F 2.69 : 188 °F 0.14 : 250 °F, 248 °F 0.47 : 425 °F 0.49 : 428 °F 0.57 : 1250 °F	Carc. 2, H351
butyl 4-hydroxybenzoate	(CAS No) 94-26-8	1.13 : 185 °F	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact : Gently wash with plenty of soap and water.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water.
- First-aid measures after ingestion : Call a POISON CENTER or doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause cancer by inhalation.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

- Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.
- Unsuitable extinguishing media : None known.

### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : No particular fire or explosion hazard.
- Reactivity : No dangerous reactions known.

### 5.3. Advice for firefighters

- Firefighting instructions : Do not allow run-off from fire fighting to enter drains or water courses.
- Protection during firefighting : Wear a self contained breathing apparatus. Wear fire/flame resistant/retardant clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid creating or spreading dust.

#### 6.1.1. For non-emergency personnel

- Protective equipment : Wear suitable gloves.
- Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

- Protective equipment : Wear suitable gloves.
- Emergency procedures : Stop leak if safe to do so. Ventilate area.

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

- For containment : Contain and collect as any solid.

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Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting.

### 6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid creating or spreading dust.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### 7.2. Conditions for safe storage, including any incompatibilities

Incompatible products : Strong acids. Strong bases. Strong oxidizers.

Heat and Ignition sources : Keep away from heat, sparks and flame.

Prohibitions on mixed storage : Incompatible materials.

Storage area : Store in dry, cool, well-ventilated area.

### 7.3. Specific end use(s)

Temperature indicator.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Tempilstik® 185 °F (85 °C), 188 °F (87 °C), 250 °F (121 °C), 425 °F (218 °C), 428 °F (220 °C), 1250 °F (677 °C), 248 °F (120 °C)		
ACGIH	Not applicable	
OSHA	Not applicable	
2,4'-dimethylacetoacetanilide (97-36-9)		
ACGIH	Not applicable	
OSHA	Not applicable	
butyl 4-hydroxybenzoate (94-26-8)		
ACGIH	Not applicable	
OSHA	Not applicable	
Carbon black (1333-86-4)		
ACGIH	ACGIH TWA (mg/m³)	3.5 mg/m³
ACGIH	Remark (ACGIH)	Bronchitis
OSHA	OSHA PEL (TWA) (mg/m³)	3.5 mg/m³
Canada (Quebec)	VEMP (mg/m³)	10 mg/m³ (Fibres de carbone et de graphite; Poussière totale) 5 mg/m³ (Fibres de carbone et de graphite; Poussière respirable) 3.5 mg/m³

### 8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Use rubber gloves.

Eye protection : In case of dust production: protective goggles.

Respiratory protection : In case of inadequate ventilation wear respiratory protection. Use air-purifying respirator equipped with particulate filtering cartridges.

Environmental exposure controls : Prevent leakage or spillage.

Other information : Do not eat, drink or smoke when using this product.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Solid

# Tempilstik® 185 °F (85 °C), 188 °F (87 °C), 250 °F (121 °C), 425 °F (218 °C), 428 °F (220 °C), 1250 °F (677 °C), 248 °F (120 °C)

## Safety Data Sheet

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according to Canadian Hazardous Products Regulations (HPR)

Appearance	: A solid crayon-like marker.
Colour	: Variable.
Odour	: No data available
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

VOC content : 0 %

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Heat.

### 10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizers.

### 10.6. Hazardous decomposition products

Carbon oxides (CO, CO<sub>2</sub>).

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

#### 2',4'-dimethylacetoacetanilide (97-36-9)

LD50 oral rat : 1995 mg/kg  
ATE CLP (oral) : 1995.000 mg/kg bodyweight

#### butyl 4-hydroxybenzoate (94-26-8)

LD50 oral rat : 13200 mg/kg  
ATE CLP (oral) : 13200.000 mg/kg bodyweight

#### Carbon black (1333-86-4)

LD50 oral rat : > 8000 mg/kg  
LC50 inhalation rat (mg/l) : > 4.6 mg/m<sup>3</sup> 4 h

Skin corrosion/Irritation : Not classified

12/29/2015

EN (English)

SDS Ref.: LACO1511005

4/7



# Tempilstik® 185 °F (85 °C), 188 °F (87 °C), 250 °F (121 °C), 425 °F (218 °C), 428 °F (220 °C), 1250 °F (677 °C), 248 °F (120 °C)

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Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer (Inhalation).

<b>Carbon black (1333-86-4)</b>	
IARC group	2B - Possibly carcinogenic to humans, Inhalation of dust
National Toxicology Program (NTP) Status	Not listed in carcinogenicity class
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
<b>Potential adverse human health effects and symptoms</b>	
Symptoms/injuries after inhalation	: May cause cancer by inhalation.
Likely routes of exposure	: Inhalation; Skin and eye contact

### SECTION 12: Ecological information

#### 12.1 Toxicity

<b>2',4'-dimethylacetoacetanilide (97-36-9)</b>	
LC50 fish 1	250 (250 - 350) mg/l

#### 12.2. Persistence and degradability

<b>2',4'-dimethylacetoacetanilide (97-36-9)</b>	
Biodegradation	25 % 28 d
<b>Carbon black (1333-86-4)</b>	
Persistence and degradability	Not readily biodegradable.

#### 12.3. Bioaccumulative potential

<b>2',4'-dimethylacetoacetanilide (97-36-9)</b>	
Log Pow	1.4

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

Sewage disposal recommendations	: Do not dispose of waste into sewer.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.

### SECTION 14: Transport information

In accordance with DOT and TDG

Not considered a dangerous good for transport regulations

Proper Shipping Name (ADR)	: Not applicable
Transport hazard class(es) (ADR)	:

#### Transport by sea

Transport hazard class(es) (IMDG)	:
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#### Air transport

Transport hazard class(es) (IATA)	:
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# Tempilstik® 185 °F (85 °C), 188 °F (87 °C), 250 °F (121 °C), 425 °F (218 °C), 428 °F (220 °C), 1250 °F (677 °C), 248 °F (120 °C)

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### SECTION 15: Regulatory Information

#### 15.1. US Federal regulations

##### 2',4'-dimethylacetacetanilide (97-36-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### butyl 4-hydroxybenzoate (94-26-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### Carbon black (1333-86-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations

##### CANADA

##### 2',4'-dimethylacetacetanilide (97-36-9)

Listed on the Canadian DSL (Domestic Substances List) inventory.

##### butyl 4-hydroxybenzoate (94-26-8)

Listed on the Canadian DSL (Domestic Substances List) inventory.

##### Carbon black (1333-86-4)

Listed on the Canadian DSL (Domestic Substances List) inventory.

##### EU-Regulations

##### 2',4'-dimethylacetacetanilide (97-36-9)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### butyl 4-hydroxybenzoate (94-26-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### Carbon black (1333-86-4)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### National regulations

Tempilstik® 185 °F (85 °C), 188 °F (87 °C), 250 °F (121 °C), 425 °F (218 °C), 428 °F (220 °C), 1250 °F (677 °C), 248 °F (120 °C)

All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

All ingredients are listed in the Toxic Substances Control Act (TSCA).

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).

#### 15.3. US State regulations

##### Carbon black (1333-86-4)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
Yes	No	No	No	

##### Carbon black (1333-86-4)

U.S. - New Jersey - Right to Know Hazardous Substance List

### SECTION 16: Other information

Indication of changes

: Added product

Data sources

: ACGIH (American Conference of Government Industrial Hygienists).

European Chemicals Agency (ECHA) C&L Inventory database. Accessed at <http://e-ha.europa.eu/wplq/information-on-chemicals-cl-inventory-database>

Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.

National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition.

OSHA 29CFR 1910.1200 Hazard Communication Standard.

TSCA Chemical Substance Inventory. Accessed at

<http://www.epa.gov/oppl/existingchemicals/pubs/tscainventory/howto.html>.

# Tempilstik® 185 °F (85 °C), 188 °F (87 °C), 250 °F (121 °C), 425 °F (218 °C), 428 °F (220 °C), 1250 °F (677 °C), 248 °F (120 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
 according to Canadian Hazardous Products Regulations (HPR)

### Abbreviations and acronyms

- : ATE: Acute Toxicity Estimate. CAS (Chemical Abstracts Service) number.
- CLP: Classification, Labelling, Packaging.
- EC50: Environmental Concentration associated with a response by 50% of the test population.
- GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
- LD50: Lethal Dose for 50% of the test population.
- OSHA: Occupational Safety & Health Administration.
- PBT: Persistent, Bioaccumulative, Toxic.
- TWA: Time Weight Average.
- TSCA: Toxic Substances Control Act.

### Other information

: None.

### NFPA health hazard

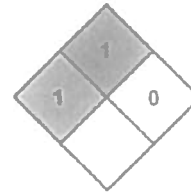
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

### NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

### NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



### Full text of H-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H351	Suspected of causing cancer

**SDS Prepared by:** The Redstone Group, LLC  
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### LACO NA GHS SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

Temp Stick 275 Degree

By

Tempil

# Tempilstik® 203 °F (95 °C), 275 °F (135 °C), 1150 °F (621 °C)

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)  
Date of issue: 04/06/2015 Revision date: 04/10/2015  
Version: 2.0

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product form : Mixture  
Trade name : Tempilstik® 203 °F (95 °C), 275 °F (135 °C), 1150 °F (621 °C)

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Temperature indicator

### 1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.  
1201 Pratt Boulevard  
Elk Grove Village, IL. 60007-5746  
Phone: (847) 956-7600  
Fax: (847) 956-9885  
E-mail: customer\_service@laco.com



### 1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

## SECTION 2: Hazards Identification

### 2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

Acute Tox. 4 (Oral) H302

Full text of H-phrases: see section 16

### 2.2. Label elements

#### GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H302 - Harmful if swallowed

Precautionary statements (GHS-US) :

P264 - Wash hands thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P301+P312 - If swallowed: Call a doctor, a POISON CENTER if you feel unwell  
P330 - Rinse mouth  
P501 - Dispose of contents/container to an authorised waste collection point

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product identifier	% (w/w)	GHS-US classification
salicylamide	(CAS No) 65-45-2	91.88 275 °F	Acute Tox. 4 (Oral), H302
2'-methylacetanilide	(CAS No) 120-66-1	79.93 203 °F	Acute Tox. 4 (Oral), H302
disodium wolframate	(CAS No) 13472-45-2	78.39 1150 °F	Acute Tox. 4 (Oral), H302

Full text of H-phrases: see section 16

# Tempilstik® 203 °F (95 °C), 275 °F (135 °C), 1150 °F (621 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- First-aid measures after skin contact : Wash with plenty of soap and water. Wash contaminated clothing before reuse.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water.
- First-aid measures after ingestion : Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

#### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after ingestion : Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Sand. Water spray.
- Unsuitable extinguishing media : None known.

#### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : No specific fire or explosion hazard. Burning produces irritating, toxic and noxious fumes.
- Reactivity : No dangerous reactions known.

#### 5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/flame resistant/retardant clothing.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Always approach spills or fires from upwind/uphill. Avoid creating or spreading dust.

##### 6.1.1. For non-emergency personnel

- Protective equipment : Dust impervious gloves.
- Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

- Protective equipment : Dust impervious gloves.
- Emergency procedures : Ventilate area.

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

- For containment : Avoid generating dust. Contain and collect as any solid.
- Methods for cleaning up : Minimize generation of dust. On land, sweep or shovel into suitable containers.

#### 6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : Avoid dust formation.
- Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

# Tempilstik® 203 °F (95 °C), 275 °F (135 °C), 1150 °F (621 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Keep container tightly closed.
Incompatible products	: Strong oxidizers. Strong bases.
Prohibitions on mixed storage	: Keep away from incompatible materials.
Storage area	: Store in dry, cool, well-ventilated area.

### 7.3. Specific end use(s)

Temperature indicator.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

<b>Tempilstik® 203 °F (95 °C), 275 °F (135 °C), 1150 °F (621 °C)</b>	
ACGIH	Not applicable
OSHA	Not applicable
<b>2'-methylacetanilide (120-66-1)</b>	
ACGIH	Not applicable
OSHA	Not applicable
<b>sallylamide (65-45-2)</b>	
ACGIH	Not applicable
OSHA	Not applicable
<b>disodium wolframate (13472-45-2)</b>	
ACGIH	Not applicable
OSHA	Not applicable

### 8.2. Exposure controls

Appropriate engineering controls	: Avoid dispersal of dust in the air (ie, clearing dust surfaces with compressed air). Ensure good ventilation of the work station.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear dust impervious gloves.
Eye protection	: In case of dust production: protective goggles.
Respiratory protection	: Use air-purifying respirator equipped with particulate filtering cartridges. In case of inadequate ventilation wear respiratory protection.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: A solid crayon-like marker.
Colour	: Variable.
Odour	: odourless.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available

# Tempilstik® 203 °F (95 °C), 275 °F (135 °C), 1150 °F (621 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

VOC content : 0 %

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known.

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Keep away from incompatible materials. Avoid dust formation.

### 10.5. Incompatible materials

Strong bases. Strong oxidizers.

### 10.6. Hazardous decomposition products

Thermal decomposition generates : Carbon dioxide, Carbon monoxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

#### Tempilstik® 203 °F (95 °C), 275 °F (135 °C), 1150 °F (621 °C)

ATE CLP (oral) 1400.000 mg/kg bodyweight

#### 2'-methylacetanilide (120-66-1)

LD50 oral rat 1450 mg/kg

ATE CLP (oral) 1450.000 mg/kg bodyweight

#### salicylamide (65-45-2)

LD50 oral rat 1400 mg/kg

ATE CLP (oral) 1400.000 mg/kg bodyweight

#### disodium wolframate (13472-45-2)

LD50 oral rat 1539 (1206 - 1965) mg/kg

LD50 dermal rat > 2000 mg/kg

LC50 inhalation rat (mg/l) > 5.01 mg/l/4h

ATE CLP (oral) 1539.000 mg/kg bodyweight

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

### Potential adverse human health effects and symptoms

Symptoms/injuries after ingestion : Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.

Likely routes of exposure : Inhalation, Skin and eye contact



# Tempilstik® 203 °F (95 °C), 275 °F (135 °C), 1150 °F (621 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### SECTION 12: Ecological information

#### 12.1 Toxicity

##### salicylamide (65-45-2)

LC50 fish 1 101 mg/l 96 h

EC50 Daphnia 1 75 mg/l 24 h

##### disodium wolframate (13472-45-2)

LC50 fish 1 > 200 mg/l 96 h

EC50 Daphnia 1 > 163 mg/l 96 h

#### 12.2 Persistence and degradability

##### salicylamide (65-45-2)

Biodegradation 99 % 28 d

#### 12.3 Bioaccumulative potential

##### salicylamide (65-45-2)

Log Pow 1,31

#### 12.4 Mobility in soil

No additional information available

#### 12.5 Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

### SECTION 14: Transport information

In accordance with DOT and TDG

Not considered a dangerous good for transport regulations

Proper Shipping Name (ADR) : Not applicable

#### Transport by sea

No additional information available

#### Air transport

No additional information available

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### 2'-methylacetanilide (120-66-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### salicylamide (65-45-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### disodium wolframate (13472-45-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations

##### CANADA

##### 2'-methylacetanilide (120-66-1)

Listed on the Canadian NDSL (Non-Domestic Substances List)

##### salicylamide (65-45-2)

Listed on the Canadian DSL (Domestic Substances List) inventory.

##### disodium wolframate (13472-45-2)

Listed on the Canadian DSL (Domestic Substances List) inventory.

# Tempilstik® 203 °F (95 °C), 275 °F (135 °C), 1150 °F (621 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### EU-Regulations

#### 2'-methylacetanilide (120-66-1)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### salicylamide (65-45-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### disodium wolframate (13472-45-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### National regulations

#### Tempilstik® 203 °F (95 °C), 275 °F (135 °C), 1150 °F (621 °C)

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).

All ingredients are listed in the Toxic Substances Control Act (TSCA).

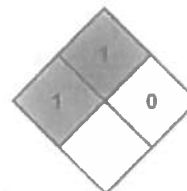
All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

### 15.3. US State regulations

No additional information available

## SECTION 16: Other information

Indication of changes	: Added. Product.
Data sources	: ACGIH 2000. Canadian Centre for Occupational Health and Safety. Accessed at: <a href="http://www.ccohs.ca/oshanswers/regis/whmis_classifi.html">http://www.ccohs.ca/oshanswers/regis/whmis_classifi.html</a> . ESIS (European chemical Substances Information System; accessed at: <a href="http://esis.jrc.ec.europa.eu/index.php?PGM=clia">http://esis.jrc.ec.europa.eu/index.php?PGM=clia</a> . European Chemicals Agency (ECHA) Registered Substances list. Accessed at <a href="http://echa.europa.eu/">http://echa.europa.eu/</a> . Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition. OSHA 29CFR 1910.1200 Hazard Communication Standard. REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. TSCA Chemical Substance Inventory. Accessed at <a href="http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html">http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html</a> .
Abbreviations and acronyms	: ACGIH (American Conference of Government Industrial Hygienists). ATE: Acute Toxicity Estimate. CAS (Chemical Abstracts Service) number. CLP: Classification, Labelling, Packaging. EC50: Environmental Concentration associated with a response by 50% of the test population. GHS: Globally Harmonized System (of Classification and Labeling of Chemicals). LD50: Lethal Dose for 50% of the test population. OSHA: Occupational Safety & Health Administration. STEL: Short Term Exposure Limits. TSCA: Toxic Substances Control Act. TWA: Time Weight Average.
Other information	: None.
NFPA health hazard	: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard	: 1 - Must be preheated before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.
Full text of H-phrases:	
Acute Tox. 4 (Oral) H302	Acute toxicity (oral), Category 4 Harmful if swallowed



# Tempilstik® 203 °F (95 °C), 275 °F (135 °C), 1150 °F (621 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

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Suite 206  
Dublin, OH USA 43016  
T 614-923-7472  
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LACO NA GHS SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

Temp Stick 300 Degree

By

Tempil

**Tempilstik® 300 °F (149 °C), 302 °F (150 °C), 306 °F (152 °C), 313 °F (156 °C), 518 °F (270 °C), 525 °F (274 °C), 536 °F (280 °C)**

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
 according to Canadian Hazardous Products Regulations (HPR)  
 Date of issue: 04/22/2015  
 Version: 1.0

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1. Product Identifier**

Product form : Mixture  
 Trade name : Tempilstik® 300 °F (149 °C), 302 °F (150 °C), 306 °F (152 °C), 313 °F (156 °C), 518 °F (270 °C), 525 °F (274 °C), 536 °F (280 °C)

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

Use of the substance/mixture : Temperature indicator

**1.3. Details of the supplier of the safety data sheet**

LA-CO Industries, Inc.  
 1201 Pratt Boulevard  
 Elk Grove Village, IL. 60007-5746  
 Phone: (847) 956-7600  
 Fax: (847) 956-9885  
 E-mail: customer\_service@laco.com



**1.4. Emergency telephone number**

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

**SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

Classification in accordance with the Globally Harmonized Standard

Aquatic Chronic 3 H412

Full text of H-phrases: see section 16

**2.2. Label elements**

**GHS-US labelling**

Hazard statements (GHS-US) : H412 - Harmful to aquatic life with long lasting effects  
 Precautionary statements (GHS-US) : P273 - Avoid release to the environment  
 P501 - Dispose of contents/container to an authorised waste collection point

**2.3. Other hazards**

No additional information available

**2.4. Unknown acute toxicity (GHS US)**

86.22 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)  
 86.22 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)  
 86.22 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

**SECTION 3: Composition/information on ingredients**

**3.1. Substance**

Not applicable

**3.2. Mixture**

Name	Product Identifier	% (w/w)	GHS-US classification
1,1,1 Tris Ethane	(CAS No) 27955-94-8	6.36 – 6.42 : 300 °F 6.38 – 6.44 : 302 °F 4.34 – 4.39 : 306 °F 2.76 – 2.79 : 313 °F 10.53 – 10.64 : 518 °F (270 °C), 525 °F 6.55 – 6.62 : 536 °F	Aquatic Chronic 2, H411
adipic acid	(CAS No) 124-04-9	1.38 : 300 °F 1.21 : 302 °F	Eye Irrit. 2A, H319

Full text of H-phrases: see section 16

# Tempilstik® 300 °F (149 °C), 302 °F (150 °C), 306 °F (152 °C), 313 °F (156 °C), 518 °F (270 °C), 525 °F (274 °C), 536 °F (280 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- First-aid measures after skin contact : Gently wash with plenty of soap and water.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water.
- First-aid measures after ingestion : Do NOT induce vomiting. Get medical advice/attention.

#### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Sand. Water spray.
- Unsuitable extinguishing media : None known.

#### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : No specific fire or explosion hazard. Burning produces irritating, toxic and noxious fumes.
- Reactivity : No dangerous reactions known.

#### 5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/flame resistant/retardant clothing.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid creating or spreading dust.

##### 6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

- Emergency procedures : Ventilate area.

#### 6.2. Environmental precautions

Avoid release to the environment. Do not discharge into drains or the environment.

#### 6.3. Methods and material for containment and cleaning up

- For containment : Avoid generating dust. Contain and collect as any solid.
- Methods for cleaning up : Minimize generation of dust. On land, sweep or shovel into suitable containers.

#### 6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep container tightly closed.
- Incompatible products : Strong oxidizers. Strong bases.

# Tempilstik® 300 °F (149 °C), 302 °F (150 °C), 306 °F (152 °C), 313 °F (156 °C), 518 °F (270 °C), 525 °F (274 °C), 536 °F (280 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

Prohibitions on mixed storage : Keep away from incompatible materials.  
Storage area : Store in dry, cool, well-ventilated area.

7.3. Specific end use(s)  
Temperature indicator.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Tempilstik® 300 °F (149 °C), 302 °F (150 °C), 306 °F (152 °C), 313 °F (156 °C), 518 °F (270 °C), 525 °F (274 °C), 536 °F (280 °C)		
ACGIH	Not applicable	
OSHA	Not applicable	
<b>adipic acid (124-04-9)</b>		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
ACGIH	Remark (ACGIH)	URT irr; ANS impair
OSHA	Not applicable	
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>1,1,1 Tris Ethane (27955-94-8)</b>		
ACGIH	Not applicable	
OSHA	Not applicable	

#### 8.2. Exposure controls

Appropriate engineering controls : Avoid dispersal of dust in the air (ie, clearing dust surfaces with compressed air). Ensure good ventilation of the work station.

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : In case of repeated or prolonged contact wear gloves. Dust impervious gloves.

Eye protection : In case of dust production: protective goggles.

Respiratory protection : In case of inadequate ventilation wear respiratory protection. Use air-purifying respirator equipped with particulate filtering cartridges.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : A solid crayon-like marker.

Colour : Variable.

Odour : odourless.

Odour threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapour pressure : No data available

Relative vapour density at 20 °C : No data available

Relative density : No data available

Solubility : No data available

Log Pow : No data available

Log Kow : No data available

Viscosity, kinematic : No data available

Viscosity, dynamic : No data available

Explosive properties : No data available

# Tempilstik® 300 °F (149 °C), 302 °F (150 °C), 306 °F (152 °C), 313 °F (156 °C), 518 °F (270 °C), 525 °F (274 °C), 536 °F (280 °C)

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according to Canadian Hazardous Products Regulations (HPR)

Oxidising properties : No data available  
Explosive limits : No data available

### 9.2. Other information

VOC content : 0 %

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known.

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Keep away from incompatible materials. Avoid dust formation.

### 10.5. Incompatible materials

Strong bases. Strong oxidizers.

### 10.6. Hazardous decomposition products

Thermal decomposition generates : Carbon dioxide. Carbon monoxide.

## SECTION 11: Toxicological Information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

#### adipic acid (124-04-9)

LD50 oral rat	5560 mg/kg
LD50 dermal rabbit	7940 ml/kg
LC50 inhalation rat (mg/l)	> 7.7 mg/l/4h
ATE CLP (oral)	5560.000 mg/kg bodyweight

#### 1,1,1 Tris Ethane (27955-94-8)

LD50 oral rat	> 5000 mg/kg bodyweight
LD50 dermal rat	> 2000 mg/kg bodyweight

Skin corrosion/irritation : Not classified  
Serious eye damage/irritation : Not classified  
Respiratory or skin sensitisation : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified  
Reproductive toxicity : Not classified  
Specific target organ toxicity (single exposure) : Not classified  
Specific target organ toxicity (repeated exposure) : Not classified

#### adipic acid (124-04-9)

NOAEL (oral, rat, 90 days) : 750 mg/kg bodyweight/day

Aspiration hazard : Not classified

### Potential adverse human health effects and symptoms

Likely routes of exposure : Inhalation;Skin and eye contact

## SECTION 12: Ecological information

### 12.1 Toxicity

Ecology - water : Harmful to aquatic life with long lasting effects.

#### adipic acid (124-04-9)

LC50 fish 1	>= 1000 mg/l 96 h
EC50 Daphnia 1	46 mg/l 48 h



# Tempilstik® 300 °F (149 °C), 302 °F (150 °C), 306 °F (152 °C), 313 °F (156 °C), 518 °F (270 °C), 525 °F (274 °C), 536 °F (280 °C)

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### 12.2. Persistence and degradability

Tempilstik® 300 °F (149 °C), 302 °F (150 °C), 306 °F (152 °C), 313 °F (156 °C), 518 °F (270 °C), 525 °F (274 °C), 536 °F (280 °C)

Persistence and degradability May cause long-term adverse effects in the environment.

#### adipic acid (124-04-9)

Persistence and degradability Readily biodegradable.

Biodegradation 90 % 5 d

#### 1,1,1 Tris Ethane (27955-94-8)

Persistence and degradability Not readily biodegradable.

Biodegradation 8 %

### 12.3. Bioaccumulative potential

#### adipic acid (124-04-9)

BCF fish 1 3.162

Log Pow 0.093

#### 1,1,1 Tris Ethane (27955-94-8)

Log Kow 3.88

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

In accordance with DOT and TDG

Not considered a dangerous good for transport regulations

Proper Shipping Name (ADR) : Not applicable

### Transport by sea

No additional information available

### Air transport

No additional information available

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### adipic acid (124-04-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

RQ (Reportable quantity, section 304 of EPA's 5000 lb

List of Lists)

#### 1,1,1 Tris Ethane (27955-94-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag P - P - indicates a commenced PMN substance.

### 15.2. International regulations

#### CANADA

#### adipic acid (124-04-9)

Listed on the Canadian DSL (Domestic Substances List) inventory.

#### 1,1,1 Tris Ethane (27955-94-8)

Listed on the Canadian NDSL (Non-Domestic Substances List)

# Tempilstik® 300 °F (149 °C), 302 °F (150 °C), 306 °F (152 °C), 313 °F (156 °C), 518 °F (270 °C), 525 °F (274 °C), 536 °F (280 °C)

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### EU-Regulations

#### adipic acid (124-04-9)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### 1,1,1 Tris Ethane (27955-94-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### National regulations

#### Tempilstik® 300 °F (149 °C), 302 °F (150 °C), 306 °F (152 °C), 313 °F (156 °C), 518 °F (270 °C), 525 °F (274 °C), 536 °F (280 °C)

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).

All ingredients are listed in the Toxic Substances Control Act (TSCA).

All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

### 15.3. US State regulations

#### adipic acid (124-04-9)

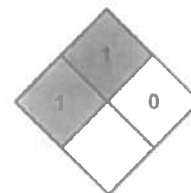
U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: Other Information

Indication of changes	: Original Document.
Data sources	: ACGIH (American Conference of Government Industrial Hygienists). European Chemicals Agency (ECHA) C&L Inventory database. Accessed at <a href="http://echa.europa.eu/web-questions/information-on-chemicals/cl-inventory-database">http://echa.europa.eu/web-ques...formation-on-chemicals/cl-inventory-database</a> . Kristen Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition. OSHA 29CFR 1910.1200 Hazard Communication Standard. TSCA Chemical Substance Inventory. Accessed at <a href="http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html">http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html</a> .
Abbreviations and acronyms	: ATE: Acute Toxicity Estimate. CAS (Chemical Abstracts Service) number. CLP: Classification, Labelling, Packaging. EC50: Environmental Concentration associated with a response by 50% of the test population. GHS: Globally Harmonized System (of Classification and Labeling of Chemicals). LD50: Lethal Dose for 50% of the test population. OSHA: Occupational Safety & Health Administration. PBT: Persistent, Bioaccumulative, Toxic. TWA: Time Weight Average. TSCA: Toxic Substances Control Act.
Other information	: None.
NFPA health hazard	: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard	: 1 - Must be preheated before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



### Full text of H-phrases:

Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
H319	Causes serious eye irritation
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

SDS Prepared by: The Redstone Group, LLC  
6077 Frantz Rd.

# Tempilstik® 300 °F (149 °C), 302 °F (150 °C), 306 °F (152 °C), 313 °F (156 °C), 518 °F (270 °C), 525 °F (274 °C), 536 °F (280 °C)

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according to Canadian Hazardous Products Regulations (HPR)

Suite 206  
Dublin, OH USA 43016  
T 614-923-7472  
[www.redscreen.com](http://www.redscreen.com)

LACO NA GHS SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

Temp Stick 350 Degree

By

Tempil

# Tempilstik® 348 °F (175 °C), 350 °F (177 °C), 850 °F (454 °C), 900 °F (482 °C), 1040 °F (560 °C)

according to Federal Register / Vol. 77, No. 58 / Monday March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)  
Date of issue: 11/03/2015

LA-CO Industries, Inc.

Version: 1.0

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product Identifier

Product form : Mixture  
Trade name : Tempilstik® 348 °F (175 °C), 350 °F (177 °C), 850 °F (454 °C), 900 °F (482 °C), 1040 °F (560 °C)

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Temperature indicator

### 1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.  
1201 Pratt Boulevard  
Elk Grove Village, IL. 60007-5746  
Phone: (847) 956-7600  
Fax: (847) 956-9885  
E-mail: customer\_service@laco.com



### 1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

## SECTION 2: Hazards Identification

### 2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

Skin Irrit. 2 H315  
Eye Irrit. 2A H319  
Carc. 2 H351  
STOT SE 3 H335

Full text of hazard classes and H-statements : see section 16

### 2.2. Label elements

#### GHS-US labelling

Hazard pictograms (GHS-US)



GHS07



GHS08

Signal word (GHS-US)

: Warning

Hazard statements (GHS-US)

: H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H335 - May cause respiratory irritation  
H351 - Suspected of causing cancer

Precautionary statements (GHS-US)

: P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P261 - Avoid breathing dust  
P264 - Wash hands thoroughly after handling  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear eye protection, protective gloves  
P302+P352 - If on skin Wash with plenty of water  
P304+P340 - If inhaled Remove person to fresh air and keep comfortable for breathing  
P305+P351+P338 - If in eyes Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do Continue rinsing  
P308+P313 - If exposed or concerned: Get medical advice/attention  
P312 - Call a doctor if you feel unwell  
P321 - Specific treatment (see First aid measures on this label)  
P332+P313 - If skin irritation occurs: Get medical advice/attention  
P337+P313 - If eye irritation persists: Get medical advice/attention

# Tempilstik® 348 °F (175 °C), 350 °F (177 °C), 850 °F (454 °C), 900 °F (482 °C), 1040 °F (560 °C)

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P362+P364 - Take off contaminated clothing and wash it before reuse  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed  
P405 - Store locked up  
P501 - Dispose of contents/container to an approved waste disposal plant

### 2.3. Other hazards

Other hazards not contributing to the classification : No additional hazards have been identified.

### 2.4 Unknown acute toxicity (GHS US)

4.21 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)  
4.21 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)  
4.21 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

## SECTION 3: Composition/Information on Ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product Identifier	% (w/w)	GHS-US classification
hymecromone	(CAS No) 90-33-5	83.63 : 348 °F 78.32 : 358 °F	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
Molybdenum trioxide	(CAS No) 1313-27-5	13 : 850 °F 30.71 : 900 °F 56.4 : 1040 °F	Eye Irrit. 2A, H319 Carc. 2, H351 STOT SE 3, H335
dilithium molybdate	(CAS No) 13568-40-6	38.02 : 850 °F	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
potassium molybdate	(CAS No) 13446-49-6	20.9 : 900 °F 37.59 : 1040 °F	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
Carbon black	(CAS No) 1333-86-4	0.91 : 348 °F 0.81 : 350 °F	Carc. 2, H351

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

First-aid measures after skin contact : Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Do NOT induce vomiting unless directed to do so by medical personnel. Call a POISON CENTER or doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : May cause cancer.

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes serious eye irritation.

### 4.3. Indication of any immediate medical attention and special treatment needed

No special procedures required. Treat symptomatically and supportively.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Sand. Water spray.

Unsuitable extinguishing media : None known.

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according to Canadian Hazardous Products Regulations (HPR)

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : No specific fire or explosion hazard.  
Reactivity : No dangerous reactions known.

### 5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.  
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/flame resistant/retardant clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid contact with skin and eyes. Avoid creating or spreading dust.

#### 6.1.1. For non-emergency personnel

Protective equipment : Wear suitable gloves resistant to chemical penetration. Nitrile gloves. Chemical goggles or safety glasses. Do not breathe dust.

Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Avoid breathing dust. Wear suitable protective clothing and gloves. Nitrile rubber. Chemical goggles or safety glasses.

Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

For containment : Avoid generating dust. Contain and collect as any solid.

Methods for cleaning up : Minimize generation of dust. On land, sweep or shovel into suitable containers.

### 6.4. Reference to other sections

Section 13: disposal information, Section 7: safe handling, Section 8: personal protective equipment.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Obtain special instructions before use. Use personal protective equipment as required. Do not handle until all safety precautions have been read and understood. Avoid breathing dust, fume. Use only outdoors or in a well-ventilated area.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container closed when not in use.

Incompatible products : Strong oxidizers. Strong bases.

Prohibitions on mixed storage : Keep away from incompatible materials.

Storage area : Store in dry, cool, well-ventilated area.

### 7.3. Specific end use(s)

Temperature indicator.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Tempilstik® 348 °F (175 °C), 350 °F (177 °C), 850 °F (454 °C), 900 °F (482 °C), 1040 °F (560 °C)

ACGIH : Not applicable

OSHA : Not applicable

hymecromone (90-33-5)

ACGIH : Not applicable

# Tempilstik® 348 °F (175 °C), 350 °F (177 °C), 850 °F (454 °C), 900 °F (482 °C), 1040 °F (560 °C)

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### hymecromone (90-33-5)

OSHA Not applicable

### Carbon black (1333-86-4)

ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	3.5 mg/m <sup>3</sup>
ACGIH	Remark (ACGIH)	Bronchitis
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	3.5 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (Fibres de carbone et de graphite; Poussière totale) 5 mg/m <sup>3</sup> (Fibres de carbone et de graphite; Poussière respirable) 3.5 mg/m <sup>3</sup>

### Molybdenum trioxide (1313-27-5)

ACGIH Not applicable

OSHA Not applicable

### potassium molybdate (13446-49-6)

ACGIH Not applicable

OSHA Not applicable

### dilithium molybdate (13568-40-6)

ACGIH Not applicable

OSHA Not applicable

## 8.2. Exposure controls

Appropriate engineering controls	: No special work practices are needed beyond the above recommendations under anticipated conditions of normal use. Avoid dispersal of dust in the air (ie, clearing dust surfaces with compressed air).
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear dust impervious gloves.
Eye protection	: No special eye protection equipment recommended under normal conditions of use. In case of dust production: protective goggles.
Skin and body protection	: Wear suitable protective clothing. Impervious clothing.
Respiratory protection	: No special respiratory protection equipment is recommended under normal conditions of use with adequate ventilation. In case of inadequate ventilation wear respiratory protection. Use air-purifying respirator equipped with particulate filtering cartridges.
Thermal hazard protection	: Flame retardant clothing should be used when handling in molten state.
Other information	: Do not eat, drink or smoke when using this product.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: A solid crayon-like marker.
Colour	: variable.
Odour	: odourless.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available



# Tempilstik® 348 °F (175 °C), 350 °F (177 °C), 850 °F (454 °C), 900 °F (482 °C), 1040 °F (560 °C)

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Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: Product is not explosive.
Oxidising properties	: No oxidizing properties
Explosive limits	: No data available

### 9.2. Other information

VOC content : 0 %

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known.

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Keep away from incompatible materials.

### 10.5. Incompatible materials

Strong bases. Strong oxidizers.

### 10.6. Hazardous decomposition products

Thermal decomposition generates : Carbon dioxide. Carbon monoxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

<b>hymecromone (90-33-5)</b>	
LD50 oral rat	3850 mg/kg
ATE CLP (oral)	3850.000 mg/kg bodyweight
<b>Carbon black (1333-86-4)</b>	
LD50 oral rat	> 8000 mg/kg
LC50 inhalation rat (mg/l)	> 4.6 mg/m <sup>3</sup> 4 h
<b>Molybdenum trioxide (1313-27-5)</b>	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rat	> 2000 mg/kg bodyweight
LC50 Inhalation rat (mg/l)	> 3.92 mg/l/4h
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer.
<b>Carbon black (1333-86-4)</b>	
IARC group	2B - Possibly carcinogenic to humans, Inhalation of dust
National Toxicology Program (NTP) Status	Not listed in carcinogenicity class
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified

Potential adverse human health effects and symptoms

Symptoms/injuries after inhalation : May cause respiratory irritation.

# Tempilstik® 348 °F (175 °C), 350 °F (177 °C), 850 °F (454 °C), 900 °F (482 °C), 1040 °F (560 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Likely routes of exposure	: Skin and eye contact; Inhalation

### SECTION 12: Ecological Information

#### 12.1 Toxicity

Ecology - water : Harmful to aquatic life with long lasting effects.

##### Molybdenum trioxide (1313-27-5)

LC50 fish 1 >= 43.3 (<= 58) mg/l

NOEC (chronic) > 87.8 mg/l

#### 12.2 Persistence and degradability

Tempilstik® 348 °F (175 °C), 350 °F (177 °C), 850 °F (454 °C), 900 °F (482 °C), 1040 °F (560 °C)

Persistence and degradability : May cause long-term adverse effects in the environment.

##### Carbon black (1333-86-4)

Persistence and degradability : Not readily biodegradable.

#### 12.3 Bioaccumulative potential

Tempilstik® 348 °F (175 °C), 350 °F (177 °C), 850 °F (454 °C), 900 °F (482 °C), 1040 °F (560 °C)

Bioaccumulative potential : Not established.

#### 12.4 Mobility in soil

No additional information available

#### 12.5 Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

### SECTION 14: Transport information

In accordance with DOT and TDG

Not considered a dangerous good for transport regulations

Proper Shipping Name (ADR) : Not applicable

Transport hazard class(es) (ADR) :

#### Transport by sea

Transport hazard class(es) (IMDG) :

#### Air transport

Transport hazard class(es) (IATA) :

### SECTION 15: Regulatory information

#### 15.1 US Federal regulations

##### hymecromone (90-33-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### Carbon black (1333-86-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### Molybdenum trioxide (1313-27-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### potassium molybdate (13446-49-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### dilithium molybdate (13568-40-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

# Tempilstik® 348 °F (175 °C), 350 °F (177 °C), 850 °F (454 °C), 900 °F (482 °C), 1040 °F (560 °C)

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### 15.2. International regulations

#### CANADA

##### hymecromone (90-33-5)

Listed on the Canadian DSL (Domestic Substances List) inventory.

##### Carbon black (1333-86-4)

Listed on the Canadian DSL (Domestic Substances List) inventory.

##### Molybdenum trioxide (1313-27-5)

Listed on the Canadian DSL (Domestic Substances List) inventory.

##### potassium molybdate (13446-49-6)

Listed on the Canadian NDSL (Non-Domestic Substances List)

##### dillithium molybdate (13568-40-6)

Listed on the Canadian NDSL (Non-Domestic Substances List)

#### EU-Regulations

##### hymecromone (90-33-5)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### Carbon black (1333-86-4)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### Molybdenum trioxide (1313-27-5)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### potassium molybdate (13446-49-6)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### dillithium molybdate (13568-40-6)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### National regulations

##### Tempilstik® 348 °F (175 °C), 350 °F (177 °C), 850 °F (454 °C), 900 °F (482 °C), 1040 °F (560 °C)

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).

All ingredients are listed in the Toxic Substances Control Act (TSCA).

All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

### 15.3. US State regulations

#### Carbon black (1333-86-4)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
Yes	No	No	No	

#### Carbon black (1333-86-4)

U.S. - New Jersey - Right to Know Hazardous Substance List

## SECTION 16: Other Information

Indication of changes

: Original Document.

Data sources

: ACGIH (American Conference of Government Industrial Hygienists).

European Chemicals Agency (ECHA) C&L Inventory database. Accessed at <http://echa.europa.eu/web-quest/information-on-chemicals>

Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.

National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition.

OSHA 29CFR 1910.1200 Hazard Communication Standard.

TSCA Chemical Substance Inventory. Accessed at <http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.

# Tempilstik® 348 °F (175 °C), 350 °F (177 °C), 850 °F (454 °C), 900 °F (482 °C), 1040 °F (560 °C)

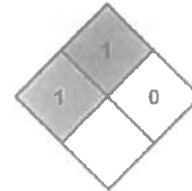
## Safety Data Sheet

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**Abbreviations and acronyms** : ATE: Acute Toxicity Estimate. CAS (Chemical Abstracts Service) number.  
CLP: Classification, Labelling, Packaging.  
EC50: Environmental Concentration associated with a response by 50% of the test population.  
GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).  
LD50: Lethal Dose for 50% of the test population.  
OSHA: Occupational Safety & Health Administration.  
PBT: Persistent, Bioaccumulative, Toxic.  
TWA: Time Weight Average.  
TSCA: Toxic Substances Control Act.

**Other information** : None.

**NFPA health hazard** : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.  
**NFPA fire hazard** : 1 - Must be preheated before ignition can occur.  
**NFPA reactivity** : 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



### Full text of H-statements:

Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H351	Suspected of causing cancer

**SDS Prepared by:** The Redstone Group, LLC  
6077 Frantz Rd.  
Suite 206  
Dublin, OH USA 43016  
T 614-923-7472  
[www.redstonegrp.com](http://www.redstonegrp.com)

### LACO NA GHS SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

Temp Stick 400 Degree

By

Tempil

**Tempilstik®** : 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)

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 according to Canadian Hazardous Products Regulations (HPR)  
 Date of issue: 04/22/2015  
 Version: 1.0

LA-CO Industries, Inc.

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1. Product Identifier**

Product form : Mixture  
 Trade name : Tempilstik® 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

Use of the substance/mixture : Temperature indicator

**1.3. Details of the supplier of the safety data sheet**

LA-CO Industries, Inc.  
 1201 Pratt Boulevard  
 Elk Grove Village, IL. 60007-5746  
 Phone: (847) 956-7600  
 Fax: (847) 956-9885  
 E-mail: customer\_service@laco.com



**1.4. Emergency telephone number**

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

**SECTION 2: Hazards Identification**

**2.1. Classification of the substance or mixture**

Classification in accordance with the Globally Harmonized Standard

Not classified

**2.2. Label elements**

GHS-US labelling

No labelling applicable

**2.3. Other hazards**

No additional information available

**2.4. Unknown acute toxicity (GHS US)**

No additional information available

**SECTION 3: Composition/Information on Ingredients**

**3.1. Substance**

Not applicable

**3.2. Mixture**

Name	Product identifier	% (w/w)	GHS-US classification
2',4'-dimethylacetacetanilide	(CAS No) 97-36-9	84.79 : 182 °F	Acute Tox 4 (Oral), H302
ad plc acid	(CAS No) 124-04-9	6.38 : 383 °F 4.67 : 388 °F 4.71 : 392 °F	Eye Irrit. 2A, H319
sal cylamide	(CAS No) 65-45-2	8.24 : 206 °F	Acute Tox 4 (Oral), H302

**Tempilstik® : 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)**

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Name	Product Identifier	% (w/w)	GHS-US classification
Iron oxide red	(CAS No) 1309-37-1	1.69 : 263 °F 0.21 – 0.3 : 320 °F 0.79 : 1400 °F 0.84 – 1.22 : 1600 °F 1.52 : 1950 °F	Aquatic Chronic 2, H411
butyl 4-hydroxybenzoate	(CAS No) 94-26-8	0.91 : 182 °F	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
phenyl salicylate	(CAS No) 118-55-8	4.1 – 4.14 : 104 °F	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
lithium sulphate	(CAS No) 10377-48-7	1.9 : 1500 °F 1.88 : 1600 °F	Acute Tox. 4 (Oral), H302

Full text of H-phrases: see section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- First-aid measures after skin contact : Wash with plenty of soap and water.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water.
- First-aid measures after ingestion : Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

#### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause respiratory irritation.
- Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Sand. Water spray.
- Unsuitable extinguishing media : None known.

#### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : No specific fire or explosion hazard. Burning produces irritating, toxic and noxious fumes.
- Reactivity : No dangerous reactions known.

#### 5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/flare resistant/retardant clothing.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid creating or spreading dust.

##### 6.1.1. For non-emergency personnel

- Protective equipment : Wear suitable gloves.
- Emergency procedures : Evacuate unnecessary personnel

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### 6.1.2. For emergency responders

Protective equipment : Wear suitable gloves.  
Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

For containment : Avoid generating dust. Contain and collect as any solid.  
Methods for cleaning up : Minimize generation of dust. On land, sweep or shovel into suitable containers.

### 6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed.  
Incompatible products : Strong oxidizers. Strong bases.  
Prohibitions on mixed storage : Keep away from incompatible materials.  
Storage area : Store in dry, cool, well-ventilated area.

### 7.3. Specific end use(s)

Temperature indicator.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

**Tempilstik®** 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)

ACGIH Not applicable

OSHA Not applicable

#### phenyl salicylate (118-55-8)

ACGIH Not applicable

OSHA Not applicable

#### butyl 4-hydroxybenzoate (94-26-8)

ACGIH Not applicable

OSHA Not applicable

#### 2',4'-dimethylacetacetanilide (97-38-9)

ACGIH Not applicable

OSHA Not applicable

#### sallylamide (65-45-2)

ACGIH Not applicable

OSHA Not applicable

#### Iron oxide red (1309-37-1)

ACGIH ACGIH TWA (mg/m<sup>3</sup>) 5 mg/m<sup>3</sup>



**Tempilstik®** : 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)

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<b>Iron oxide red (1309-37-1)</b>		
ACGIH	Remark (ACGIH)	Pneumoconiosis
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (Fer, trioxyde de, fumées et poussières (exprimée en Fe)) 10 mg/m <sup>3</sup> (Rouge)
<b>adipic acid (124-04-9)</b>		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
ACGIH	Remark (ACGIH)	URT irr; ANS impair
OSHA	Not applicable	
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>lithium sulphate (10377-48-7)</b>		
ACGIH	Not applicable	
OSHA	Not applicable	

**8.2. Exposure controls**

- Appropriate engineering controls : Avoid dispersal of dust in the air (ie, clearing dust surfaces with compressed air). Ensure good ventilation of the work station.
- Personal protective equipment : Avoid all unnecessary exposure.
- Hand protection : Wear dust impervious gloves.
- Eye protection : In case of dust production: protective goggles.
- Respiratory protection : In case of inadequate ventilation wear respiratory protection. Use air-purifying respirator equipped with particulate filtering cartridges.

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

- Physical state : Solid
- Appearance : A solid crayon-like marker.
- Colour : Variable.
- Odour : odourless.
- Odour threshold : No data available
- pH : No data available
- Relative evaporation rate (butyl acetate=1) : No data available
- Melting point : No data available
- Freezing point : No data available
- Bolling point : No data available
- Flash point : No data available
- Auto-ignition temperature : No data available
- Decomposition temperature : No data available
- Flammability (solid, gas) : No data available
- Vapour pressure : No data available
- Relative vapour density at 20 °C : No data available
- Relative density : No data available
- Solubility : No data available
- Log Pow : No data available
- Log Kow : No data available
- Viscosity, kinematic : No data available
- Viscosity, dynamic : No data available
- Explosive properties : No data available
- Oxidising properties : No data available

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Explosive limits : No data available

**9.2. Other information**

VOC content : 0 %

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

No dangerous reactions known.

**10.2. Chemical stability**

The product is stable at normal handling and storage conditions.

**10.3. Possibility of hazardous reactions**

Hazardous polymerization will not occur.

**10.4. Conditions to avoid**

Keep away from incompatible materials. Avoid dust formation.

**10.5. Incompatible materials**

Strong bases. Strong oxidizers.

**10.6. Hazardous decomposition products**

Thermal decomposition generates : Carbon dioxide, Carbon monoxide.

**SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**

Acute toxicity : Oral: Not classified.

<b>phenyl salicylate (118-55-8)</b>	
LD50 oral rat	3000 mg/kg
ATE CLP (oral)	3000.000 mg/kg bodyweight
<b>butyl 4-hydroxybenzoate (94-26-8)</b>	
LD50 oral rat	13200 mg/kg
ATE CLP (oral)	13200.000 mg/kg bodyweight
<b>2',4'-dimethylacetoacetanilide (97-36-9)</b>	
LD50 oral rat	1995 mg/kg
ATE CLP (oral)	1995.000 mg/kg bodyweight
<b>salicylamide (65-45-2)</b>	
LD50 oral rat	1400 mg/kg
ATE CLP (oral)	1400.000 mg/kg bodyweight
<b>Iron oxide red (1309-37-1)</b>	
LD50 oral rat	> 10000 mg/kg
<b>adipic acid (124-04-9)</b>	
LD50 oral rat	5560 mg/kg
LD50 dermal rabbit	7940 ml/kg
LC50 inhalation rat (mg/l)	> 7.7 mg/l/4h
ATE CLP (oral)	5560.000 mg/kg bodyweight
<b>lithium sulphate (10377-48-7)</b>	
LD50 oral rat	613 mg/kg
ATE CLP (oral)	613.000 mg/kg bodyweight
<b>Skin corrosion/irritation</b>	: Not classified
<b>Serious eye damage/irritation</b>	: Not classified.
<b>Respiratory or skin sensitisation</b>	: Not classified
<b>Germ cell mutagenicity</b>	: Not classified
<b>Carcinogenicity</b>	: Not classified.

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#### Iron oxide red (1309-37-1)

IARC group : 3 - Not classifiable  
National Toxicology Program (NTP) Status : Not listed in carcinogenicity class

#### lithium sulphate (10377-48-7)

NOAEL (chronic, oral, animal/male, 2 years) : 15 mg/kg bodyweight

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

#### adipic acid (124-04-9)

NOAEL (oral, rat, 90 days) : 750 mg/kg bodyweight/day

Aspiration hazard : Not classified

#### Potential adverse human health effects and symptoms

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating.

Likely routes of exposure : Inhalation; Skin and eye contact

## SECTION 12: Ecological information

### 12.1 Toxicity

#### 2',4'-dimethylacetacetanilide (97-36-9)

LC50 fish 1 : 250 (250 - 350) mg/l

#### salicylamide (65-45-2)

LC50 fish 1 : 101 mg/l 96 h

EC50 Daphnia 1 : 75 mg/l 24 h

#### Iron oxide red (1309-37-1)

EC50 Daphnia 1 : > 100 mg/l

#### adipic acid (124-04-9)

LC50 fish 1 : >= 1000 mg/l 96 h

EC50 Daphnia 1 : 46 mg/l 48 h

#### lithium sulphate (10377-48-7)

LC50 fish 1 : 30.3 mg/l read-across, 96 h

EC50 Daphnia 1 : 33.2 mg/l read across, 48 h

LOEC (chronic) : 24.35 mg/l read-across lithium hydroxide monohydrate

NOEC (chronic) : 17.35 mg/l read-across lithium hydroxide monohydrate

### 12.2. Persistence and degradability

#### phenyl salicylate (118-55-8)

Persistence and degradability : Moderately biodegradable.

#### 2',4'-dimethylacetacetanilide (97-36-9)

Biodegradation : 25 % 28 d

#### salicylamide (65-45-2)

Biodegradation : 99 % 28 d

#### adipic acid (124-04-9)

Persistence and degradability : Readily biodegradable.

Biodegradation : 90 % 5 d

### 12.3. Bioaccumulative potential

#### phenyl salicylate (118-55-8)

Log Pow : 3.82

Bioaccumulative potential : Not established.

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 according to Canadian Hazardous Products Regulations (HPR)

<b>2',4'-dimethylacetacetanilide (97-36-9)</b>	
Log Pow	1.4
<b>salicylamide (65-45-2)</b>	
Log Pow	1.31
<b>adipic acid (124-04-9)</b>	
BCF fish 1	3.162
Log Pow	0.093
<b>lithium sulphate (10377-48-7)</b>	
Log Pow	-4.38

**12.4. Mobility in soil**  
 No additional information available

**12.5. Other adverse effects**  
 No additional information available

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**  
 Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

**SECTION 14: Transport information**

In accordance with DOT and TDG  
 Not considered a dangerous good for transport regulations  
 Proper Shipping Name (ADR) : Not applicable

**Transport by sea**  
 No additional information available  
**Air transport**  
 No additional information available

**SECTION 15: Regulatory information**

**15.1. US Federal regulations**

<b>phenyl salicylate (118-55-8)</b>	Listed on the United States TSCA (Toxic Substances Control Act) inventory
<b>butyl 4-hydroxybenzoate (94-26-8)</b>	Listed on the United States TSCA (Toxic Substances Control Act) inventory
<b>2',4'-dimethylacetacetanilide (97-36-9)</b>	Listed on the United States TSCA (Toxic Substances Control Act) inventory
<b>salicylamide (65-45-2)</b>	Listed on the United States TSCA (Toxic Substances Control Act) inventory
<b>iron oxide red (1309-37-1)</b>	Listed on the United States TSCA (Toxic Substances Control Act) inventory
<b>adipic acid (124-04-9)</b>	Listed on the United States TSCA (Toxic Substances Control Act) inventory RQ (Reportable quantity, section 304 of EPA's List of Lists) 5000 lb
<b>lithium sulphate (10377-48-7)</b>	Listed on the United States TSCA (Toxic Substances Control Act) inventory

**Tempilstik®** : 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)

## Safety Data Sheet

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according to Canadian Hazardous Products Regulations (HPR)

### 15.2. International regulations

#### CANADA

**phenyl salicylate (118-55-8)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

**butyl 4-hydroxybenzoate (94-26-8)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

**2',4'-dimethylacetoacetanilide (97-36-9)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

**salicylamide (65-45-2)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

**Iron oxide red (1309-37-1)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

**adipic acid (124-04-9)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

**lithium sulphate (10377-48-7)**

Listed on the Canadian DSL (Domestic Substances List) inventory.

#### EU-Regulations

**phenyl salicylate (118-55-8)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**butyl 4-hydroxybenzoate (94-26-8)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**2',4'-dimethylacetoacetanilide (97-36-9)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**salicylamide (65-45-2)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**Iron oxide red (1309-37-1)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**adipic acid (124-04-9)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**lithium sulphate (10377-48-7)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### National regulations

**Tempilstik®** 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).

All ingredients are listed in the Toxic Substances Control Act (TSCA).

All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

### 15.3. US State regulations

**Iron oxide red (1309-37-1)**

U.S. - Minnesota - Hazardous Substance List

U.S. - New Jersey - Right to Know Hazardous Substance List

**adipic acid (124-04-9)**

U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

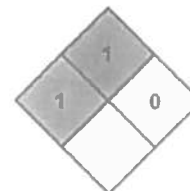
**Tempilstik®** : 104 °F (40 °C), 131 °F (55 °C), 182 °F (83 °C), 200 °F (93 °C), 206 °F (97 °C), 213 °F (101 °C), 219 °F (104 °C), 225 °F (107 °C), 256 °F (124 °C), 263 °F (128 °C), 320 °F (160 °C), 325 °F (163 °C), 329 °F (165 °C), 383 °F (195 °C), 388 °F (198 °C), 392 °F (200 °C), 400 °F (204 °C), 413 °F (212 °C), 419 °F (215 °C), 550 °F (288 °C), 1400 °F (760 °C), 1450 °F (788 °C), 1500 °F (816 °C), 1550 °F (843 °C), 1600 °F (871 °C), 1650 °F (899 °C), 1700 °F (927 °C), 1800 °F (982 °C), 1900 °F (1038 °C), 1950 °F (1066 °C)

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**SECTION 16: Other Information**

Indication of changes	: Original Document.
Data sources	: ACGIH (American Conference of Government Industrial Hygienists). European Chemicals Agency (ECHA) C&L Inventory database. Accessed at <a href="http://echa.europa.eu/web-quest/information-on-chemicals/cl-inventory-database">http://echa.europa.eu/web-quest/information-on-chemicals/cl-inventory-database</a> . Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition. OSHA 29CFR 1910.1200 Hazard Communication Standard. TSCA Chemical Substance Inventory. Accessed at <a href="http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html">http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html</a> .
Abbreviations and acronyms	: ATE: Acute Toxicity Estimate. CAS (Chemical Abstracts Service) number. CLP: Classification, Labelling, Packaging. EC50: Environmental Concentration associated with a response by 50% of the test population. GHS: Globally Harmonized System (of Classification and Labeling of Chemicals). LD50: Lethal Dose for 50% of the test population. OSHA: Occupational Safety & Health Administration. PBT: Persistent, Bioaccumulative, Toxic. TWA: Time Weight Average. TSCA: Toxic Substances Control Act.
Other information	: None.
NFPA health hazard	: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard	: 1 - Must be preheated before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



Full text of H-phrases:

Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Carc. 1A	Carcinogenicity, Category 1A
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H350	May cause cancer
H411	Toxic to aquatic life with long lasting effects

SDS Prepared by: The Redstone Group, LLC  
 6077 Frantz Rd.  
 Suite 206  
 Dublin, OH USA 43016  
 T 614-923-7472  
[www.redstone.com](http://www.redstone.com)

LACO NA GHS SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

Temp Stick 450 Degree

By

Tempil

# Tempilstik® 450 °F (232 °C), 446 °F (230 °C)

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)  
Date of issue: 04/17/2015  
Version: 1.0

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product form

: Mixture

Trade name

: Tempilstik® 450 °F (232 °C), 446 °F (230 °C)

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

: Temperature indicator

### 1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.  
1201 Pratt Boulevard  
Elk Grove Village, IL 60007-5746  
Phone: (847) 956-7600  
Fax: (847) 956-9885  
E-mail: customer\_service@laco.com



### 1.4. Emergency telephone number

Emergency number

: 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

Muta. 2 H341  
Carc. 1B H350  
Repr. 2 H361  
Aquatic Chronic 2 H411

Full text of H-phrases: see section 16

### 2.2. Label elements

#### GHS-US labelling

Hazard pictograms (GHS-US)



GHS08



GHS09

Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H341 - Suspected of causing genetic defects  
H350 - May cause cancer  
H361 - Suspected of damaging fertility or the unborn child  
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US)

: P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P273 - Avoid release to the environment  
P280 - Wear protective clothing, protective gloves  
P308+P313 - If exposed or concerned: Get medical advice/attention  
P391 - Collect spillage  
P405 - Store locked up  
P501 - Dispose of contents/container to an authorised waste collection point

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/Information on Ingredients

### 3.1. Substance

Not applicable



# Tempilstik® 450 °F (232 °C), 446 °F (230 °C)

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### 3.2. Mixture

Name	Product Identifier	% (w/w)	GHS-US classification
1,1,1 Tris Ethane	(CAS No) 27955-94-8	84.15 – 85 : 450 °F 84.7 – 85.56 : 446 °F	Aquatic Chronic 2, H411
Phenolphthalein	(CAS No) 77-09-8	3.53 : 450 °F 3.55 : 446 °F	Muta. 2, H341 Carc. 1B, H350 Repr. 2, H361
Carbon black	(CAS No) 1333-86-4	0.88 : 450 °F	Carc. 2, H351

Full text of H-phrases: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- First-aid measures after skin contact : Wash with plenty of soap and water.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes.
- First-aid measures after ingestion : Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Suspected of causing genetic defects. Suspected of damaging fertility or the unborn child. May cause cancer.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Sand. Water spray.
- Unsuitable extinguishing media : None known.

### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : No specific fire or explosion hazard. Burning produces irritating, toxic and noxious fumes.
- Reactivity : No dangerous reactions known.

### 5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/flame resistant/retardant clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid contact with skin and eyes. Avoid creating or spreading dust.

#### 6.1.1. For non-emergency personnel

- Protective equipment : Wear suitable protective clothing and gloves.
- Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

- Protective equipment : Wear suitable protective clothing and gloves.
- Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Do not discharge into drains or the environment. Prevent entry to sewers and public waters.

### 6.3. Methods and material for containment and cleaning up

- For containment : Avoid generating dust. Contain and collect as any solid.
- Methods for cleaning up : Minimize generation of dust. On land, sweep or shovel into suitable containers.

# Tempilstik® 450 °F (232 °C), 446 °F (230 °C)

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### 6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Obtain special instructions before use. Use personal protective equipment as required. Do not handle until all safety precautions have been read and understood. Avoid dust formation.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed.

Incompatible products : Strong oxidizers. Strong bases.

Prohibitions on mixed storage : Keep away from incompatible materials.

Storage area : Store in dry, cool, well-ventilated area.

### 7.3. Specific end use(s)

Temperature indicator.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Tempilstik® 450 °F (232 °C), 446 °F (230 °C)

ACGIH Not applicable

OSHA Not applicable

#### 1,1,1 Tris Ethane (27955-94-8)

ACGIH Not applicable

OSHA Not applicable

#### Phenolphthalein (77-09-8)

ACGIH Not applicable

OSHA Not applicable

#### Carbon black (1333-86-4)

ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	3.5 mg/m <sup>3</sup>
ACGIH	Remark (ACGIH)	Bronchitis
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	3.5 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (Fibres de carbone et de graphite; Poussière totale) 5 mg/m <sup>3</sup> (Fibres de carbone et de graphite; Poussière respirable) 3.5 mg/m <sup>3</sup>

### 8.2. Exposure controls

Appropriate engineering controls : Avoid dispersal of dust in the air (ie, clearing dust surfaces with compressed air). Ensure good ventilation of the work station.

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Dust impervious gloves. Use rubber gloves.

Eye protection : In case of dust production: protective goggles.

Skin and body protection : Wear suitable protective clothing. Long sleeved protective clothing.

Respiratory protection : In case of inadequate ventilation wear respiratory protection. Use air-purifying respirator equipped with particulate filtering cartridges.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : A solid crayon-like marker.

Colour : No data available

Odour : odourless.

# Tempilstik® 450 °F (232 °C), 446 °F (230 °C)

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Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

VOC content : 0 %

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known.

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Keep away from incompatible materials. Avoid dust formation.

### 10.5. Incompatible materials

Strong bases. Strong oxidizers.

### 10.6. Hazardous decomposition products

Thermal decomposition generates : Carbon dioxide. Carbon monoxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

<b>1,1,1 Tris Ethane (27955-94-8)</b>	
LD50 oral rat	> 5000 mg/kg bodyweight
LD50 dermal rat	> 2000 mg/kg bodyweight
<b>Phenolphthalein (77-09-8)</b>	
LD50 oral rat	> 2000 mg/kg bodyweight
<b>Carbon black (1333-86-4)</b>	
LD50 oral rat	> 8000 mg/kg
LC50 Inhalation rat (mg/l)	> 4.6 mg/m <sup>3</sup> 4 h

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Suspected of causing genetic defects.
Carcinogenicity	: May cause cancer.

# Tempilstik® 450 °F (232 °C), 446 °F (230 °C)

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<b>Phenolphthalein (77-09-8)</b>	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen
<b>Carbon black (1333-86-4)</b>	
IARC group	2B - Possibly carcinogenic to humans, Inhalation of dust
National Toxicology Program (NTP) Status	Not listed in carcinogenicity class
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
<b>Potential adverse human health effects and symptoms</b>	
Likely routes of exposure	: Inhalation;Skin and eye contact

### SECTION 12: Ecological information

**12.1 Toxicity**  
Ecology - water : Toxic to aquatic life with long lasting effects.

<b>Phenolphthalein (77-09-8)</b>	
EC50 Daphnia 1	> 100 mg/l

#### 12.2. Persistence and degradability

<b>Tempilstik® 450 °F (232 °C), 446 °F (230 °C)</b>	
Persistence and degradability	May cause long-term adverse effects in the environment.

<b>1,1,1 Tris Ethane (27955-94-8)</b>	
Persistence and degradability	Not readily biodegradable.
Biodegradation	8 %

<b>Carbon black (1333-86-4)</b>	
Persistence and degradability	Not readily biodegradable.

#### 12.3. Bioaccumulative potential

<b>1,1,1 Tris Ethane (27955-94-8)</b>	
Log Kow	3.88

<b>Phenolphthalein (77-09-8)</b>	
Log Kow	2.4

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

Sewage disposal recommendations	: Do not dispose of waste into sewer.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment.

### SECTION 14: Transport information

In accordance with DOT and TDG	
Transport document description	: UN3077 Environmentally hazardous substances, solid, n.o.s. (1,1,1 Tris Ethane), 9, III
UN-No.(DOT)	: UN3077
Proper Shipping Name (DOT)	: Environmentally hazardous substances, solid, n.o.s. (1,1,1 Tris Ethane)
Transport hazard class(es) (DOT)	: 9 - Class 9 (Miscellaneous dangerous materials)
Packing group (DOT)	: III - Minor Danger

#### ADR

Transport document description	: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (1,1,1 Tris Ethane), 9, III, (E)
Proper Shipping Name (ADR)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (1,1,1 Tris Ethane)

# Tempilstik® 450 °F (232 °C), 446 °F (230 °C)

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Packing group (ADR)	: III
Class (ADR)	: 9 - Miscellaneous dangerous substances and articles
<b>Transport by sea</b>	
UN-No. (IMDG)	: UN 3077
Proper Shipping Name (IMDG)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (1,1,1 Tris Ethane)
Class (IMDG)	: 9 - Miscellaneous dangerous substances and articles
Packing group (IMDG)	: III
<b>Air transport</b>	
UN-No.(IATA)	: UN 3077
Proper Shipping Name (IATA)	: Environmentally hazardous substance, solid, n.o.s. (1,1,1 Tris Ethane)
Class (IATA)	: 9 - Miscellaneous Dangerous Goods
Packing group (IATA)	: III

### SECTION 15: Regulatory Information

#### 15.1. US Federal regulations

##### 1,1,1 Tris Ethane (27955-94-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
EPA TSCA Regulatory Flag P - P - indicates a commenced PMN substance.

##### Phenolphthalein (77-09-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### Carbon black (1333-86-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations

##### CANADA

##### 1,1,1 Tris Ethane (27955-94-8)

Listed on the Canadian NDSL (Non-Domestic Substances List)

##### Phenolphthalein (77-09-8)

Listed on the Canadian DSL (Domestic Substances List) inventory.

##### Carbon black (1333-86-4)

Listed on the Canadian DSL (Domestic Substances List) inventory.

#### EU-Regulations

##### 1,1,1 Tris Ethane (27955-94-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### Phenolphthalein (77-09-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### Carbon black (1333-86-4)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### National regulations

##### Tempilstik® 450 °F (232 °C), 446 °F (230 °C)

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).  
All ingredients are listed in the Toxic Substances Control Act (TSCA).  
All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

#### 15.3. US State regulations

##### Phenolphthalein (77-09-8)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	No	No	No	

# Tempilstik® 450 °F (232 °C), 446 °F (230 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

Carbon black (1333-86-4)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	No	No	No	

### Phenolphthalein (77-09-8)

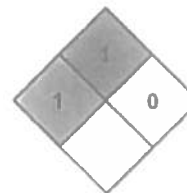
U.S. - New Jersey - Right to Know Hazardous Substance List

### Carbon black (1333-86-4)

U.S. - New Jersey - Right to Know Hazardous Substance List

## SECTION 16: Other Information

Indication of changes	: Original Document.
Data sources	: ACGIH 2000. Canadian Centre for Occupational Health and Safety. Accessed at: <a href="http://www.ccohs.ca/oshanswers/eqisl/whms_classifi.html">http://www.ccohs.ca/oshanswers/eqisl/whms_classifi.html</a> . ESIS (European chemical Substances Information System; accessed at: <a href="http://ec.europa.eu/chemicals/substances/eqisl/whms_classifi.html">http://ec.europa.eu/chemicals/substances/eqisl/whms_classifi.html</a> ). European Chemicals Agency (ECHA) Registered Substances list. Accessed at <a href="http://echa.europa.eu/">http://echa.europa.eu/</a> . Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition. OSHA 29CFR 1910.1200 Hazard Communication Standard. REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. TSCA Chemical Substance Inventory. Accessed at <a href="http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html">http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html</a> . ACGIH (American Conference of Government Industrial Hygienists). ATE: Acute Toxicity Estimate. CAS (Chemical Abstracts Service) number. CLP: Classification, Labelling, Packaging. EC50: Environmental Concentration associated with a response by 50% of the test population. GHS: Globally Harmonized System (of Classification and Labeling of Chemicals). LD50: Lethal Dose for 50% of the test population. OSHA: Occupational Safety & Health Administration. STEL: Short Term Exposure Limits. TSCA: Toxic Substances Control Act. TWA: Time Weight Average.
Abbreviations and acronyms	
Other information	: None.
NFPA health hazard	: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard	: 1 - Must be preheated before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



### Full text of H-phrases:

Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Carc. 1B	Carcinogenicity, Category 1B
Carc. 2	Carcinogenicity, Category 2
Muta. 2	Germ cell mutagenicity, Category 2
Repr. 2	Reproductive toxicity, Category 2
H341	Suspected of causing genetic defects
H350	May cause cancer
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child

# Tempilstik® 450 °F (232 °C), 446 °F (230 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 56 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

H411	Toxic to aquatic life with long lasting effects
------	---

SDS Prepared by: The Redstone Group, LLC  
6077 Frantz Rd.  
Suite 206  
Dublin, OH USA 43016  
T 614-923-7472  
[www.redstonegrp.com](http://www.redstonegrp.com)

LACO NA GHS SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

Temp Stick 463 Degree

By

Tempil



# Tempilstik® 463 °F (239 °C)

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)  
Date of issue: 04/09/2015  
Version: 1.0

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

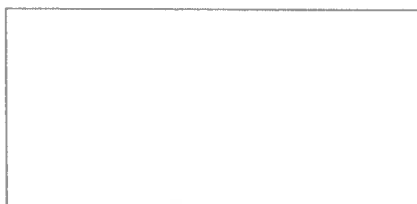
Product form : Mixture  
Trade name : Tempilstik® 463 °F (239 °C)

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Temperature indicator

### 1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.  
1201 Pratt Boulevard  
Elk Grove Village, IL. 60007-5746  
Phone: (847) 956-7600  
Fax: (847) 956-9885  
E-mail: customer\_service@laco.com



### 1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

## SECTION 2: Hazards Identification

### 2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard  
Aquatic Chronic 2 H411

### 2.2. Label elements

#### GHS-US labelling

Hazard pictograms (GHS-US) :



GHS09

Hazard statements (GHS-US) : H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) : P273 - Avoid release to the environment  
P391 - Collect spillage  
P501 - Dispose of contents/container to an authorised waste collection point

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product identifier	% (w/w)	GHS-US classification
1,1,1 Tris Ethane	(CAS No) 27955-94-8	89.17 - 90.07	Aquatic Chronic 2, H411

Full text of H-phrases: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing.

# Tempilstik® 463 °F (239 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

First-aid measures after skin contact : Wash with plenty of soap and water.  
First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water.  
First-aid measures after ingestion : Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Sand. Water spray.  
Unsuitable extinguishing media : None known.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : No specific fire or explosion hazard.  
Reactivity : No dangerous reactions known.

### 5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.  
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/flame resistant/retardant clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid creating or spreading dust.

#### 6.1.1. For non-emergency personnel

Protective equipment : Dust impervious gloves.  
Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Dust impervious gloves.  
Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Do not discharge into drains or the environment. Prevent entry to sewers and public waters.

### 6.3. Methods and material for containment and cleaning up

For containment : Avoid generating dust. Contain and collect as any solid.  
Methods for cleaning up : Minimize generation of dust. On land, sweep or shovel into suitable containers.

### 6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Avoid dust formation.  
Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed.  
Incompatible products : Strong oxidizers. Strong bases.  
Prohibitions on mixed storage : Keep away from incompatible materials.  
Storage area : Store in dry, cool, well-ventilated area.

# Tempilstik® 463 °F (239 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 7.3. Specific end use(s)

Temperature indicator.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Tempilstik® 463 °F (239 °C)

ACGIH	Not applicable
OSHA	Not applicable

#### 1,1,1 Tris Ethane (27955-94-8)

ACGIH	Not applicable
OSHA	Not applicable

### 8.2. Exposure controls

Appropriate engineering controls	: Avoid dispersal of dust in the air (ie, clearing dust surfaces with compressed air). Ensure good ventilation of the work station.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: In case of repeated or prolonged contact wear gloves. Dust impervious gloves.
Eye protection	: In case of dust production: protective goggles.
Respiratory protection	: In case of inadequate ventilation wear respiratory protection. Use air-purifying respirator equipped with particulate filtering cartridges.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: A solid crayon-like marker.
Colour	: No data available
Odour	: odourless.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: 239 °C
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

VOC content	: 0 %
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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known.

# Tempilstik® 463 °F (239 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Keep away from incompatible materials. Avoid dust formation.

### 10.5. Incompatible materials

Strong bases. Strong oxidizers.

### 10.6. Hazardous decomposition products

Thermal decomposition generates : Carbon dioxide. Carbon monoxide.

## SECTION 11: Toxicological Information

### 11.1. Information on toxicological effects

**Acute toxicity** : Not classified

#### 1,1,1 Tris Ethane (27955-94-8)

LD50 oral rat > 5000 mg/kg bodyweight

LD50 dermal rat > 2000 mg/kg bodyweight

**Skin corrosion/irritation** : Not classified

**Serious eye damage/irritation** : Not classified

**Respiratory or skin sensitisation** : Not classified

**Germ cell mutagenicity** : Not classified

**Carcinogenicity** : Not classified

**Reproductive toxicity** : Not classified

**Specific target organ toxicity (single exposure)** : Not classified

**Specific target organ toxicity (repeated exposure)** : Not classified

**Aspiration hazard** : Not classified

#### Potential adverse human health effects and symptoms

Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating.

Likely routes of exposure : Inhalation;Skin and eye contact

## SECTION 12: Ecological Information

### 12.1. Toxicity

Ecology - water : Toxic to aquatic life with long lasting effects.

### 12.2. Persistence and degradability

#### Tempilstik® 463 °F (239 °C)

Persistence and degradability : May cause long-term adverse effects in the environment.

#### 1,1,1 Tris Ethane (27955-94-8)

Persistence and degradability : Not readily biodegradable.

Biodegradation : 8 %

### 12.3. Bioaccumulative potential

#### 1,1,1 Tris Ethane (27955-94-8)

Log Kow : 3.88

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

# Tempilstik® 463 °F (239 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### SECTION 14: Transport information

In accordance with DOT and TDG

Transport document description : UN3077 Environmentally hazardous substances, solid, n.o.s. (1,1,1 Tris Ethane), 9, III  
UN-No.(DOT) : UN3077  
Proper Shipping Name (DOT) : Environmentally hazardous substances, solid, n.o.s. (1,1,1 Tris Ethane)  
Department of Transportation (DOT) Hazard Classes : 9 - Class 9 (Miscellaneous dangerous materials)  
Packing group (DOT) : III - Minor Danger

#### ADR

Transport document description : UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (1,1,1 Tris Ethane), 9, III, (E)  
Proper Shipping Name (ADR) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (1,1,1 Tris Ethane)  
Packing group (ADR) : III  
Class (ADR) : 9 - Miscellaneous dangerous substances and articles

#### Transport by sea

UN-No. (IMDG) : UN 3077  
Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (1,1,1 Tris Ethane)  
Class (IMDG) : 9 - Miscellaneous dangerous substances and articles  
Packing group (IMDG) : III

#### Air transport

UN-No.(IATA) : UN 3077  
Proper Shipping Name (IATA) : Environmentally hazardous substance, solid, n.o.s. (1,1,1 Tris Ethane)  
Class (IATA) : 9 - Miscellaneous Dangerous Goods  
Packing group (IATA) : III

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### 1,1,1 Tris Ethane (27955-94-8)

EPA TSCA Regulatory Flag : P - P - indicates a commenced PMN substance.

##### 1,1,1 Tris Ethane (27955-94-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
EPA TSCA Regulatory Flag : P - P - indicates a commenced PMN substance.

#### 15.2. International regulations

##### CANADA

##### 1,1,1 Tris Ethane (27955-94-8)

Listed on the Canadian NDSL (Non-Domestic Substances List)

##### EU-Regulations

##### 1,1,1 Tris Ethane (27955-94-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### National regulations

##### Tempilstik® 463 °F (239 °C)

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).  
All ingredients are listed in the Toxic Substances Control Act (TSCA).  
All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

#### 15.3. US State regulations

No additional information available

### SECTION 16: Other information

Indication of changes : Original Document.

# Tempilstik® 463 °F (239 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### Data sources

: ACGIH 2000.

Canadian Centre for Occupational Health and Safety. Accessed at:  
[http://www.ccohs.ca/oshanswers/legisl/whmis\\_classifi.htm](http://www.ccohs.ca/oshanswers/legisl/whmis_classifi.htm).

ESIS (European chemical Substances Information System; accessed at:  
<http://esis.jrc.ec.europa.eu/index.php?PGM=cla>.

European Chemicals Agency (ECHA) Registered Substances list. Accessed at  
<http://echa.europa.eu/>. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.

National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition.

OSHA 29CFR 1910.1200 Hazard Communication Standard.

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

TSCA Chemical Substance Inventory. Accessed at  
<http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.

### Abbreviations and acronyms

: ACGIH (American Conference of Government Industrial Hygienists).

ATE: Acute Toxicity Estimate.

CAS (Chemical Abstracts Service) number.

CLP: Classification, Labelling, Packaging.

EC50: Environmental Concentration associated with a response by 50% of the test population.

GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).

LD50: Lethal Dose for 50% of the test population.

OSHA: Occupational Safety & Health Administration.

STEL: Short Term Exposure Limits.

TSCA: Toxic Substances Control Act.

TWA: Time Weight Average.

### Other information

: None.

### NFPA health hazard

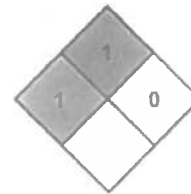
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

### NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

### NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



### Full text of H-phrases:

Aquatic Chronic 2  
H411

Hazardous to the aquatic environment — Chronic Hazard, Category 2  
Toxic to aquatic life with long lasting effects

SDS Prepared by: The Redstone Group, LLC  
6077 Frantz Rd.  
Suite 206  
Dublin, OH USA 43016  
T 614-923-7472  
[www.redstonegroup.com](http://www.redstonegroup.com)

### LACO NA GHS SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

Temp Stick 475 Degree

By

Tempil

# Tempilstik® 475 °F (246 °C)

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)  
Date of issue: 06/18/2015  
Version: 1.0

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product form : Mixture  
Trade name : Tempilstik® 475 °F (246 °C)

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Temperature indicator

### 1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.  
1201 Pratt Boulevard  
Elk Grove Village, IL. 60007-5746  
Phone: (847) 956-7600  
Fax: (847) 956-9885  
E-mail: customer\_service@laco.com



### 1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

Muta. 2 H341  
Carc. 1B H350  
Repr. 2 H361  
Aquatic Chronic 3 H412

Full text of H-statements: see section 16

### 2.2. Label elements

#### GHS labelling

Hazard pictograms (GHS) :



GHS08

Signal word (GHS) :

Danger

Hazard statements (GHS) :

H341 - Suspected of causing genetic defects  
H350 - May cause cancer  
H361 - Suspected of damaging fertility or the unborn child  
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements (GHS) :

P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P273 - Avoid release to the environment  
P280 - Wear protective clothing, protective gloves  
P308+P313 - If exposed or concerned: Get medical advice/attention  
P405 - Store locked up  
P501 - Dispose of contents/container to an authorised waste collection point

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/Information on Ingredients

### 3.1. Substance

Not applicable



# Tempilstik® 475 °F (246 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 28, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 3.2. Mixture

Name	Product Identifier	% (w/w)	GHS classification
Phenolphthalein	(CAS No) 77-09-8	90,02	Muta. 2, H341 Carc. 1B, H350 Repr. 2, H361
1,1,1 Tris Ethane	(CAS No) 27955-94-8	8,9 - 8,99	Aquatic Chronic 2, H411

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- First-aid measures after skin contact : Gently wash with plenty of soap and water.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes.
- First-aid measures after ingestion : Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Suspected of causing genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Sand. Water spray.
- Unsuitable extinguishing media : None known.

### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : No specific fire or explosion hazard. Burning produces irritating, toxic and noxious fumes.
- Reactivity : No dangerous reactions known.

### 5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/ flame resistant/retardant clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid creating or spreading dust. Avoid contact with skin and eyes.

#### 6.1.1. For non-emergency personnel

- Protective equipment : Wear suitable protective clothing and gloves.
- Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

- Protective equipment : Wear suitable protective clothing and gloves.
- Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Avoid release to the environment. Do not discharge into drains or the environment.

### 6.3. Methods and material for containment and cleaning up

- For containment : Avoid generating dust. Contain and collect as any solid.
- Methods for cleaning up : Minimize generation of dust. On land, sweep or shovel into suitable containers.

### 6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

# Tempilstik® 475 °F (246 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : Obtain special instructions before use. Use personal protective equipment as required. Do not handle until all safety precautions have been read and understood. Avoid breathing dust, fume.
- Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep container tightly closed.
- Incompatible products : Strong oxidizers. Strong bases.
- Prohibitions on mixed storage : Keep away from incompatible materials.
- Storage area : Store in dry, cool, well-ventilated area.

#### 7.3. Specific end use(s)

Temperature indicator.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Tempilstik® 475 °F (246 °C)

ACGIH	Not applicable
OSHA	Not applicable

##### Phenolphthalein (77-09-8)

ACGIH	Not applicable
OSHA	Not applicable

##### 1,1,1 Tris Ethane (27955-94-8)

ACGIH	Not applicable
OSHA	Not applicable

#### 8.2. Exposure controls

- Appropriate engineering controls : Avoid dispersal of dust in the air (ie, clearing dust surfaces with compressed air). Ensure good ventilation of the work station.
- Personal protective equipment : Avoid all unnecessary exposure.
- Hand protection : Wear dust impervious gloves.
- Eye protection : In case of dust production: protective goggles.
- Skin and body protection : Long sleeved protective clothing.
- Respiratory protection : In case of inadequate ventilation wear respiratory protection. Use air-purifying respirator equipped with particulate filtering cartridges.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

- Physical state : Solid
- Appearance : A solid crayon-like marker.
- Colour : Variable.
- Odour : odourless.
- Odour threshold : No data available
- pH : No data available
- Relative evaporation rate (butyl acetate=1) : No data available
- Melting point : No data available
- Freezing point : No data available
- Boiling point : No data available
- Flash point : No data available
- Auto-ignition temperature : No data available
- Decomposition temperature : No data available
- Flammability (solid, gas) : No data available
- Vapour pressure : No data available

# Tempilstik® 475 °F (246 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

VOC content : 0 %

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known.

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Keep away from incompatible materials. Avoid dust formation.

### 10.5. Incompatible materials

Strong bases. Strong oxidizers.

### 10.6. Hazardous decomposition products

Thermal decomposition generates : Carbon dioxide. Carbon monoxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

<b>Phenolphthalein (77-09-8)</b>	
LD50 oral rat	> 2000 mg/kg bodyweight
<b>1,1,1 Tris Ethane (27955-94-8)</b>	
LD50 oral rat	> 5000 mg/kg bodyweight
LD50 dermal rat	> 2000 mg/kg bodyweight

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Suspected of causing genetic defects.
Carcinogenicity	: May cause cancer.

<b>Phenolphthalein (77-09-8)</b>	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
<b>Potential adverse human health effects and symptoms</b>	
Likely routes of exposure	: Inhalation;Skin and eye contact

## SECTION 12: Ecological information

### 12.1 Toxicity

# Tempilstik® 475 °F (246 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

Ecology - water : Harmful to aquatic life with long lasting effects.

<b>Phenolphthalein (77-09-8)</b>	
EC50 Daphnia 1	> 100 mg/l

### 12.2. Persistence and degradability

<b>Tempilstik® 475 °F (246 °C)</b>	
Persistence and degradability	May cause long-term adverse effects in the environment.

#### 1,1,1 Tris Ethane (27955-94-8)

Persistence and degradability : Not readily biodegradable.  
Biodegradation : 8 %

### 12.3. Bioaccumulative potential

#### Phenolphthalein (77-09-8)

Log Kow : 2.4

#### 1,1,1 Tris Ethane (27955-94-8)

Log Kow : 3.88

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.  
Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.  
Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

In accordance with DOT and TDG  
Not considered a dangerous good for transport regulations  
Proper Shipping Name (ADR) : Not applicable

### Transport by sea

No additional information available

### Air transport

No additional information available

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### 1,1,1 Tris Ethane (27955-94-8)

EPA TSCA Regulatory Flag : P - P - indicates a commenced PMN substance.

#### Phenolphthalein (77-09-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 1,1,1 Tris Ethane (27955-94-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
EPA TSCA Regulatory Flag : P - P - indicates a commenced PMN substance.

### 15.2. International regulations

#### CANADA

#### Phenolphthalein (77-09-8)

Listed on the Canadian DSL (Domestic Substances List) inventory.

#### 1,1,1 Tris Ethane (27955-94-8)

Listed on the Canadian NDSL (Non-Domestic Substances List)

#### EU-Regulations

#### Phenolphthalein (77-09-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

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according to Canadian Hazardous Products Regulations (HPR)

### 1,1,1 Tris Ethane (27955-94-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### National regulations

#### Tempilstik® 475 °F (246 °C)

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).  
All ingredients are listed in the Toxic Substances Control Act (TSCA).  
All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

### 15.3. US State regulations

#### Phenolphthalein (77-09-8)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	

#### Phenolphthalein (77-09-8)

U.S. - New Jersey - Right to Know Hazardous Substance List

## SECTION 16: Other information

Indication of changes

: Original Document.

Data sources

: ACGIH (American Conference of Government Industrial Hygienists).  
European Chemicals Agency (ECHA) C&L Inventory database. Accessed at <http://echa.europa.eu/web-quest/information-on-chemicals/cl-inventory-database>.  
Kristen Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.  
National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition.  
OSHA 29CFR 1910.1200 Hazard Communication Standard.  
TSCA Chemical Substance Inventory. Accessed at <http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.

Abbreviations and acronyms

: ATE: Acute Toxicity Estimate, CAS (Chemical Abstracts Service) number.  
CLP: Classification, Labelling, Packaging.  
EC50: Environmental Concentration associated with a response by 50% of the test population.  
GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).  
LD50: Lethal Dose for 50% of the test population.  
OSHA: Occupational Safety & Health Administration.  
PBT: Persistent, Bioaccumulative, Toxic.  
TWA: Time Weight Average.  
TSCA: Toxic Substances Control Act.

Other information

: None.

NFPA health hazard

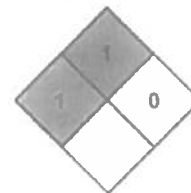
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



Full text of H-statements:

Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Carc. 1B	Carcinogenicity, Category 1B
Muta. 2	Germ cell mutagenicity, Category 2
Repr. 2	Reproductive toxicity, Category 2
H341	Suspected of causing genetic defects
H350	May cause cancer
H361	Suspected of damaging fertility or the unborn child
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

# Tempilstik® 475 °F (246 °C)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

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**SDS Prepared by:** The Redstone Group, LLC  
6077 Frantz Rd.  
Suite 206  
Dublin, OH USA 43016  
T 614-923-7472  
[www.redstonegro.com](http://www.redstonegro.com)

LACO NA GHS SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

MISC.

Alkaline Batteries

By

Duracell





## Safety Data Sheet

### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product Name:** DURACELL® ALKALINE BATTERIES  
**Product Identification:** Alkaline Manganese Dioxide Cells –  
**Tradenames:** Plus, Ultra, Simply

**Product Use:** Energy Source

**SDS Date of Preparation:** November 2, 2009; Updated May 19, 2010

#### Duracell Designations:

Name/Size	Duracell Designation	Voltage	IEC Designation
Duracell Plus/Simply D	MN1300	1,5	LR20
Duracell Ultra D	MX1300	1,5	LR20
Duracell Plus/Simply C	MN1400	1,5	LR14
Duracell Ultra C	MX1400	1,5	LR14
Duracell Plus/Simply AA	MN1500	1,5	LR6
Duracell Ultra AA	MX1500	1,5	LR6
Duracell Plus/Simply AAA	MN2400	1,5	LR03
Duracell Ultra AAA	MX2400	1,5	LR03
Duracell Plus/Simply 9V	MN1604	9	6LR61
Duracell Ultra 9V	MX1604	9	6LR61
Duracell 4.5V	MN1203	4,5	3LR12
Duracell AAAA	MN2500	1,5	
Duracell MN11	MN11	6	
Duracell MN9100 N	MN9100	1,5	LR1
Duracell 7K67 J	7K67J	6,2	4LR61

#### Company Identification:

##### EU Office

Procter & Gamble UK.  
The Heights, Brooklands  
Weybridge, Surrey  
KT13 0XP UK  
Telephone: +44-1-93-289-6000

##### Switzerland Office

Procter & Gamble  
Switzerland SARL  
Route de Saint-Georges 47  
1213 Petit-Lancy, 1, Geneva,  
Telephone: +41-58-004-6111

##### US Office

Duracell, a division of P&G  
Berkshire Corporate Park  
Bethel, CT 06801 USA  
Telephone: 203-796-4000

**Emergency Phone Number:** INFOTRAC 24-Hour Emergency Response Hotline: 1-352-323-3500  
(United States of America)

### SECTION 2: HAZARDS IDENTIFICATION

**Physical Appearance:** Copper top battery.

**CAUTION:** May explode or leak, and cause burn injury, if recharged, disposed of in fire, mixed with a different battery type, inserted backwards or disassembled. Replace all used batteries at the same time. Do not carry batteries loose in your pocket or purse. Do not remove the battery label.

EU Classification of Preparation: Not classified as a dangerous preparation.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	EINECS Number	Amount	Classification
Manganese Dioxide	1313-13-9	215-202-6	35-40 %	Xn, R20/22
Zinc	7440-66-6	231-175-3	10-25 %	N, R50/53
Potassium Hydroxide (35 %)	1310-58-3	215-181-3	5-10 %	C, Xn, R22, R35
Graphite (natural or synthetic)	7782-42-5, 7440-44-0	231-955-3 231-153-3	1-5 %	None

Note: Some Duracell alkaline batteries contain a Duracell Power Check™ battery energy gauge, which is a small conductive strip located underneath the PVC battery label that indicates the amount of charge in the battery. It is composed of minute quantities of conductive materials. Due to the small quantity of materials and their solid form, a health or environmental risk is unlikely.

### SECTION 4: FIRST AID MEASURES

**General Advice:** The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused. Damaged battery will release concentrated potassium hydroxide, which is caustic. Anticipated potential leakage of potassium hydroxide is 2 to 20 ml, depending on battery size.

**Eye Contact:** If battery is leaking and material contacts the eye, flush thoroughly with copious amounts of running water for 30 minutes. Seek immediate medical advice.

**Skin Contact:** If battery is leaking and material contacts the skin, remove any contaminated clothing and flush exposed skin with copious amounts of running water for at least 15 minutes. If irritation, injury or pain persists, seek medical advice.

**Inhaled:** If battery is leaking, contents may be irritating to respiratory passages. Move to fresh air. If irritation persists, seek medical advice.

**Swallowed:** If battery contents are swallowed, do not induce vomiting. If the victim is alert, have them rinse their mouth and the surrounding skin with water for at least 15 minutes. Seek immediate medical attention.

Note: This SDS does not include or address the small button cell batteries which can be ingested.

### SECTION 5: FIRE FIGHTING MEASURES

**Fire and Explosion Hazards:** Batteries may burst and release hazardous decomposition products when exposed to a fire situation.

**Extinguishing Media:** Use any extinguishing media that is appropriate for the surrounding fire.

**Special Fire Fighting Procedures:** Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Fight fire from a distance or protected area. Cool fire exposed

batteries to prevent rupture. Use caution when handling fire-exposed containers (containers may rocket or explode in heat of fire).

**Hazardous Combustion Products:** Thermal degradation may produce hazardous fumes of zinc and manganese; hydrogen gas, caustic vapors of potassium hydroxide and other toxic by-products.

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

Notify safety personnel of large spills. Caustic potassium hydroxide may be released from leaking or ruptured batteries. Clean-up personnel should wear appropriate protective clothing to avoid eye and skin contact and inhalation of vapors or fumes. Increase ventilation. Carefully collect batteries and place in an appropriate container for disposal.

#### SECTION 7: HANDLING AND STORAGE

Avoid mechanical or electrical abuse. DO NOT short circuit or install incorrectly. Batteries may explode, pyrolyze or vent if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment instructions. Do not mix battery systems, such as alkaline and zinc carbon, in the same equipment. Replace all batteries in equipment at the same time. Do not carry batteries loose in a pocket or bag. Do not remove battery tester or battery label.

**Storage:** Store batteries in a dry place at normal room temperature. Do not refrigerate – this will not make them last longer.

#### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

The following occupational exposure limits are provided for informational purposes. No exposure to the battery components should occur during normal consumer use. **Refer to specific country regulations for additional exposure limit information.**

Chemical Name	Exposure Limits
Manganese Dioxide	0,5 mg/m <sup>3</sup> TWA UK WEL 0,5 mg/m <sup>3</sup> TWA (inhalable) DFG MAK 0,2 mg/m <sup>3</sup> VL Belgium 0,2 mg/m <sup>3</sup> TWA Denmark LV
Zinc	None established for zinc metal
Potassium Hydroxide	2 mg/m <sup>3</sup> STEL UK WEL 2 mg/m <sup>3</sup> VCD Belgium 2 mg/m <sup>3</sup> Ceiling Denmark LV
Graphite	4 mg/m <sup>3</sup> TWA UK WEL (respirable dust) 10 mg/m <sup>3</sup> TWA UK WEL (inhalable dust) 1,5 mg/m <sup>3</sup> TWA DFG MAK (respirable dust) 4 mg/m <sup>3</sup> TWA DFG MAK (inhalable dust) 2 mg/m <sup>3</sup> VL Belgium (respirable dust)

**Ventilation:** No special ventilation is needed for normal use.

**Respiratory Protection:** None required for normal use.

**Skin Protection:** None required for normal use. Use neoprene, rubber or latex gloves when handling leaking batteries.

**Eye Protection:** None required for normal use. Wear safety goggles when handling leaking batteries.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**Appearance and Odor:** Copper top battery.

**Water Solubility:** Insoluble

## SECTION 10: STABILITY AND REACTIVITY

**Stability:** This product is stable.

**Incompatibility/Conditions to Avoid:** Contents are incompatible with strong oxidizing agents. Do not heat, crush, disassemble, short circuit or recharge.

**Hazardous Decomposition Products:** Thermal decomposition may produce hazardous fumes of zinc and manganese; caustic vapors of potassium hydroxide and other toxic by-products.

**Hazardous Polymerization:** Will not occur

## SECTION 11: TOXICOLOGICAL INFORMATION

### Potential Health Effects:

The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused. Damaged battery will release concentrated potassium hydroxide, which is caustic. Anticipated potential leakage of potassium hydroxide is 2 to 20 ml, depending on battery size.

**Eye Contact:** Contact with battery contents may cause severe irritation and burns. Eye damage is possible.

**Skin Contact:** Contact with battery contents may cause severe irritation and burns.

**Inhalation:** Inhalation of vapors or fumes released due to heat or a large number of leaking batteries may cause respiratory and eye irritation.

**Ingestion:** Swallowing is not anticipated due to battery size. Choking may occur if smaller AAA batteries are swallowed. Ingestion of battery contents (from a leaking battery) may cause mouth, throat and intestinal burns and damage.

### Acute Toxicity Data:

Manganese Dioxide: LD50 oral rat >3478 mg/kg

Potassium Hydroxide: LD50 oral rat 273 mg/kg

**Chronic Effects:** The chemicals in this product are contained in a sealed can and exposure does not occur during normal handling and use. No chronic effects would be expected from handling a leaking battery.

**Target Organs:** Skin, eyes and respiratory system.

**Carcinogenicity:** None of the components of this product are listed as carcinogens by the EU Directive on the classification and labeling of substances.

#### SECTION 12: ECOLOGICAL INFORMATION

No ecotoxicity data is available. This product is not expected to present an environmental hazard.

#### SECTION 13: DISPOSAL INFORMATION

Disposal should be in accordance with national and local regulations. Do not incinerate except for disposal in a controlled incinerator.

Duracell alkaline manganese dioxide batteries are labeled in compliance with EU Battery Directive 2006/66.

#### SECTION 14: TRANSPORT INFORMATION

**Transportation Information** – Products covered by this SDS, in their original form, are considered “dry cell” batteries and are not regulated as “DANGEROUS GOODS” for transportation.

For finished packaged product transported by ground (ADR/RID): – not regulated

For finished packaged product transported by sea (IMDG) – not regulated

For finished packaged product transported by air (IATA): – not regulated

#### SECTION 15: REGULATORY INFORMATION

**EU Classification of Preparation:** Not classified as a dangerous preparation.

**REACH:** These products are manufactured articles and not subject to REACH registration requirements.

**EU Labeling:** None Required

Labeling is not required because batteries are classified as articles under the both REACH and the Dangerous Preparations Directive and as such are exempt from the requirement for labeling.

#### SECTION 16: OTHER INFORMATION

**P&G Hazard Rating:** Health: 0      Fire: 0      Reactivity: 0

EU Classes and Risk Phrases for Reference (See Sections 2 and 3)

C Corrosive

N Dangerous for the Environment

Xn Harmful

R20/22 : Harmful by inhalation and if swallowed.

R22 Harmful if swallowed.

R35 Causes severe burns

R50/53 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Data supplied is for use only in connection with occupational safety and health.

**DISCLAIMER:** This SDS is intended to provide a brief summary of our knowledge and guidance regarding the use of this material. The information contained here has been compiled from sources considered by Procter & Gamble to be dependable and is accurate to the best of the Company's knowledge. It is not meant to be an all-inclusive document on worldwide hazard communication regulations.

This information is offered in good faith. Each user of this material needs to evaluate the conditions of use and design the appropriate protective mechanisms to prevent employee exposures, property damage or release to the environment. Procter & Gamble assumed no responsibility for injury to the recipient or third persons, or for any damage to any property resulting from misuse of the product.

Eveready Alkaline Batteries

By

Energizer

### PRODUCT SAFETY DATA SHEET

**PRODUCT NAME:** Eveready / Energizer Battery

**Type No.:**

**Volts:**

**TRADE NAMES:** ENERGIZER, ENERGIZER e2, INDUSTRIAL ZMA, HERCULES, EVEREADY, WONDER

**Approximate Weight:**

**CHEMICAL SYSTEM:** Alkaline Manganese Dioxide-Zinc

**Designed for Recharge:** No

#### SECTION 1 - MANUFACTURER INFORMATION

Energizer Battery Manufacturing, Inc.  
25225 Detroit Rd.  
Westlake, OH 44145

Telephone Number for Information:  
800-383-7323 (USA / CANADA)

Date Prepared: January 2014

#### SECTION 2 - HAZARDS IDENTIFICATION

Under normal conditions of use, the battery is hermetically sealed.

**Ingestion:** Swallowing a battery can be harmful. Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.

**Inhalation:** Contents of an open battery can cause respiratory irritation.

**Skin Contact:** Contents of an open battery can cause skin irritation and/or chemical burns.

**Eye Contact:** Contents of an open battery can cause severe irritation and chemical burns.

#### SECTION 3 - INGREDIENTS

**IMPORTANT NOTE:** The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

MATERIAL OR INGREDIENT	PEL (OSHA)	TLV (ACGIH)	%/wt.
Graphite (CAS# 7782-42-5)	15 mg/m <sup>3</sup> TWA (total dust) 5 mg/m <sup>3</sup> TWA (respirable fraction)	2 mg/m <sup>3</sup> TWA (respirable fraction)	2-6
Manganese Dioxide (CAS# 1313-13-9)	5 mg/m <sup>3</sup> Ceiling (as Mn)	0.2 mg/m <sup>3</sup> TWA (as Mn)	30-45
Potassium Hydroxide (CAS# 1310-58-3)	None established	2 mg/m <sup>3</sup> Ceiling	4-8
Zinc (CAS# 7440-66-6)	15 mg/m <sup>3</sup> TWA PNOR* (total dust) 5 mg/m <sup>3</sup> TWA PNOR* (respirable fraction)	10 mg/m <sup>3</sup> TWA PNOC** (inhalable particulate) 3 mg/m <sup>3</sup> TWA PNOC** (respirable particulate)	12-25
Non-Hazardous Components Steel (iron CAS# 7439-89-6)	None established	None established	18-22
Water, Paper, Plastic and Other	None established	None established	Balance

\* PNOR: Particulates not otherwise regulated

\*\*PNOC: Particulates not otherwise classified



**SECTION 4 – FIRST AID MEASURES**

**Ingestion:** Do not induce vomiting or give food or drink. Seek medical attention immediately. CALL NATIONAL BATTERY INGESTION HOTLINE for advice and follow-up (202-625-3333) collect day or night.

**Inhalation:** Provide fresh air and seek medical attention.

**Skin Contact:** Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention.

**Eye Contact:** Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

**SECTION 5 - FIRE FIGHTING MEASURES**

In case of fire, it is permissible to use any class of extinguishing medium on these batteries or their packing material. Cool exterior of batteries if exposed to fire to prevent rupture.

Fire fighters should wear self-contained breathing apparatus.

**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

To cleanup leaking batteries:

**Ventilation Requirements:** Room ventilation may be required in areas where there are open or leaking batteries.

**Eye Protection:** Wear safety glasses with side shields if handling an open or leaking battery.

**Gloves:** Use neoprene or natural rubber gloves if handling an open or leaking battery.

Battery materials should be collected in a leak-proof container.

**SECTION 7 - HANDLING AND STORAGE**

**Storage:** Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life.

**Mechanical Containment:** If potting or sealing the battery in an airtight or watertight container is required, consult your Energizer Battery Manufacturing, Inc. representative for precautionary suggestions. Batteries normally evolve hydrogen which, when combined with oxygen from the air, can produce a combustible or explosive mixture unless vented. If such a mixture is present, short circuits, high temperature, or static sparks can cause an ignition.

Do not obstruct safety release vents on batteries. Encapsulation (potting) of batteries will not allow cell venting and can cause high pressure rupture.

**Handling:** Accidental short circuit for a few seconds will not seriously affect the battery. Prolonged short circuit will cause the battery to lose energy, and can cause the safety release vent to open. Sources of short circuits include jumbled batteries in bulk containers, metal jewelry, metal covered tables or metal belts used for assembly of batteries into devices.

If soldering or welding to the battery is required, consult your Energizer Battery Manufacturing, Inc. representative for proper precautions to prevent seal damage or short circuit.

**Charging:** This battery is manufactured in a charged state. It is not designed for recharging. Recharging can cause battery leakage or, in some cases, high pressure rupture. Inadvertent charging can occur if a battery is installed backwards.

**Labeling:** If the Eveready / Energizer Battery label or package warnings are not visible, it is important to provide a package and/or device label stating:

**WARNING:** do not install backwards, charge, put in fire, or mix with other battery types. May explode or leak causing injury.  
**Replace all batteries at the same time.**

Where accidental ingestion of small batteries is possible, the label should include:

Keep away from small children. If swallowed, promptly see doctor; have doctor phone (202) 625-3333 collect.

**SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Ventilation Requirements:** Not necessary under normal conditions.

**Respiratory Protection:** Not necessary under normal conditions.

**Eye Protection:** Not necessary under normal conditions.

**Gloves:** Not necessary under normal conditions.

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

Boiling Point @ 760 mm Hg (°C)	Not applicable for an Article
Vapor Pressure (mm Hg @ 25°C)	Not applicable for an Article
Vapor Density (Air = 1)	Not applicable for an Article
Density (g/cm <sup>3</sup> )	2.0 - 3.0
Percent Volatile by Volume (%)	Not applicable for an Article
Evaporation Rate (Butyl Acetate = 1)	Not applicable for an Article
Physical State	Solid
Solubility in Water (% by weight)	Not applicable for an Article
pH	Not applicable for an Article
Appearance and Odor	Solid object / no odor

**SECTION 10 - STABILITY AND REACTIVITY**

Alkaline batteries do not meet any of the criteria established in 40 CFR 261.2 for reactivity.

**SECTION 11 - TOXICOLOGICAL INFORMATION**

Alkaline batteries are not hazardous waste. Under normal conditions of use, alkaline batteries are non-toxic.

**SECTION 12 - ECOLOGICAL INFORMATION**

Issues such as ecotoxicity, persistence and bioaccumulation are not applicable for articles.

**SECTION 13 - DISPOSAL CONSIDERATIONS**

Dispose of in accordance with all applicable federal, state and local regulations. Appropriate disposal technologies include incineration and land filling.

**SECTION 14 – TRANSPORT INFORMATION**

In general, all batteries in all forms of transportation (ground, air, or ocean) must be packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be packaged in a manner that prevents short circuits and be contained in "strong outer packaging" that prevents spillage of contents. All original packaging for Energizer alkaline batteries has been designed to be compliant with these regulatory concerns.

Alkaline batteries (sometimes referred to as "Dry cell" batteries) are not listed as dangerous goods under the ADR European Agreement Concerning the International Carriage of Dangerous Goods by Road, the IMDG International Maritime Dangerous Goods Code, UN Dangerous Good Regulations, IATA Dangerous Goods Regulations, ICAO Technical Instructions and the U.S. hazardous materials regulations (49 CFR). These batteries are not subject to the dangerous goods regulations provided they meet the requirements contained in the following special provisions.

Regulatory Body	Special Provisions
ADR	Not regulated
IMDG	Not regulated
UN	Not regulated
US DOT	49 CFR 172.102 Provision 130
IATA	A123
ICAO	Not regulated

All Energizer alkaline batteries are packed in such a way to prevent short circuits or the generation dangerous quantities of heat and meet the special provisions listed above. In addition, the IATA Dangerous Goods Regulations and ICAO Technical Instructions require the words "not restricted" and the Special Provision number A123 be provided on the air waybill, when an air waybill is issued.

**SECTION 15 - REGULATORY INFORMATION**

Batteries marketed by Energizer Battery Manufacturing, Inc. are not classified as dangerous goods by the US Department of Transportation or the major international regulatory bodies and are therefore not regulated.

SARA/TITLE III - As an article, this battery and its contents are not subject to the requirements of the Emergency Planning and Community Right-To-Know Act.

**SECTION 16 - OTHER INFORMATION**

None.

*Energizer has prepared copyrighted Product Safety Datasheets to provide information on the different Eveready/Energizer battery systems. As defined in OSHA Hazard Communication Standard, Section 1910.1200 (c), Eveready/Energizer batteries are manufactured articles, which do not result in exposure to a hazardous chemical under normal conditions of use. The information and recommendations set forth herein are made in good faith, for information only, and are believed to be accurate as of the date of preparation. However, ENERGIZER BATTERY MANUFACTURING, INC., MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM REFERENCE ON IT.*

Upside down Paint

By

Aervoe



# Safety Data Sheet (SDS)

Date Prepared/Revised: 5/2/2016 Version no.: 04 Supersedes: (7/27/2015)

## 1.) Identification of the Mixture and of the Company

Product identifier: **AerVOE Survey Marking Paint - Aerosol**

Product name: **Survey Marking Paint**

Non-Fluorescent Colors	Fluorescent Colors	High Delivery	Metallic
201 Red	220 Red	281 Red	210 Silver
202 Yellow	222 Orange	288 Fluorescent Orange	
203 Blue	224 Green		
204 Green	226 Yellow		
205 Orange	227 Blue		
206 Black	229 Pink		
207 White	230 Red/Orange		
208 Hi Visibility Yellow			
209 Light Blue			
212 Purple			
280 Concrete Gray			

Relevant identified uses of the substance: Designed to adhere to most surfaces, including pavement, gravel, and soil.

Uses advised against: This aerosol product is designed to spray at an angle not greater than 30° from vertical. Do not use on turf surfaces.

CAS No:	<b>Not Applicable (mixture)</b>
EC No:	<b>Not Applicable (mixture)</b>
Index No:	<b>Not Applicable (mixture)</b>
Manufacturer/Supplier:	<b>AerVOE Industries Incorporated</b>
Street address/P.O. Box:	<b>1100 Mark Circle</b>
Country ID/Postcode/Place:	<b>Gardnerville, Nevada 89410</b>
Telephone number:	<b>001 (0) 1-775-782-0100</b>
e-mail:	<b>mailbox@aerVOE.com</b>
National contact:	<b>AerVOE industries Incorporated</b>
For Product Information:	<b>001 (0) 1-800-227-0196</b>
Emergency telephone number:	<b>001 (0) 1-800-424-9300 (CHEMTREC – 24 hrs)</b>
	<b>English Language Service</b>

## 2. Hazards identification

### Classifications

Physical Hazards:	Aerosol - Category 1
	Flam. Gas. 1
	Press. Gas
	Flam. Liq. 2
	Flam. Liq. 3 * 210 Silver



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Health Hazards: Car 1B  
Muta 1B  
Asp Tox. 1  
Eye Irrit. - 2  
Rep. 2  
Skin Irr. 2  
STOT SE3  
STOT RE 2  
Acute Tox. 4 \* 280 Concrete Gray

Environmental Hazards: Aquatic Chronic 2

## Labeling

Signal Word: Danger

Hazard Statements: H220 – Extremely flammable gas  
H222 – Extremely flammable aerosol  
H225 – Highly flammable liquid and vapour.  
H226 – Flammable liquid and vapour.  
H229 - Pressurized container: may burst if heated  
H304 – May be fatal if swallowed and enters airways.  
H312 – Harmful in contact with skin. \*280 Concrete Gray  
H315 – Causes skin irritation.  
H319 – Causes serious eye irritation.  
H332 – Harmful if inhaled. \* 280 Concrete Gray  
H336 – May cause drowsiness or dizziness.  
H340 – May cause genetic defects  
H350 – May cause cancer  
H361 – Suspected of damaging fertility or the unborn child .  
H373 – May cause damage to nervous system through prolonged or repeated exposure(Inhalation)

Precautionary Statements: P101 - If medical advice is needed, have product container or label at hand  
P102 - Keep out of reach of children  
P103 - Read label before use  
P210 - Keep away from heat/sparks/open flames/hot surfaces - no smoking  
P211 - Do not spray on an open flame or other ignition source  
P251 - Pressurized container: Do not pierce or burn, even after use  
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray  
P262 - Do not get in eyes, on skin, or on clothing  
P264 - Wash ... thoroughly after handling  
P280 - Wear protective gloves/eye protection/face protection



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P303+P361+P353 - If on skin or hair, remove/takeoff immediately all contaminated clothing. Rinse skin with water/shower.  
P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F  
P501 - Dispose of contents/container in accordance with local/regional/national/international regulation



Symbols/Pictograms:

### 3. Composition / Information on Ingredients

#### Composition

Chemical	Synonyms	CAS Number	EINECS Number	Weight Percent	Hazard Category	H-Code
Hydrocarbon Propellant	LPG	68476-86-8	270-705-8	10-30%	Press. Gas Flam. Gas 1 Carc. 1B Muta. 1B	H220 H350 H340
Hexane	n-Hexane	110-54-3	203-777-6	5-10%	Flam. Liq. 2 Repr. 2 Asp. Tox. 1 STOT RE 2 * Skin Irrit. 2 STOT SE 3 Aquatic Chronic 2	H225 H361f *** H304 H373 ** H315 H336 H411
Aliphatic Petroleum Distillates	Solvent Naphtha	64742-89-8	265-192-2	5-10%	Carc. 1B Muta. 1B Asp. Tox. 1	H350 H340 H304
Aliphatic Petroleum Distillates	Solvent Naphtha	64742-88-7	265-191-7	1-5%	Asp. Tox. 1	H304
Aliphatic Petroleum Distillates	Solvent Naphtha	8032-32-4	232-453-7	1-5%	Carc. 1B Muta. 1B Asp. Tox. 1	H350 H340 H304
<b>Non-fluorescent colors also contain:</b>						
Acetone	Propanone	67-64-1	200-662-2	1-5%	Flam. Liq. 2 Eye Irrit. 2 STOT SE 3	H225, H319, H336
Aliphatic	Solvent	8052-41-3	232-489-3	1-5%	Carc. 1B	H350



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Petroleum Distillates	Naphtha				Muta. 1B Asp. Tox. 1	H340 H304
<b>210 silver contains:</b>						
Hydrocarbon Propellant	LPG	68476-86-8	270-705-8	10-30%	Press. Gas Flam. Gas 1 Carc. 1B Muta. 1B	H220 H350 H340
Acetone	Propanone	67-64-1	200-662-2	30-60%	Flam. Liq. 2 Eye Irrit. 2 STOT SE 3	H225, H319, H336
Aliphatic Petroleum Distillates	Solvent Naphtha	8052-41-3	232-489-3	1-5%	Carc. 1B Muta. 1B Asp. Tox. 1	H350 H340 H304
n-Butyl Acetate	n-Butyl Ester	123-86-4	204-658-1	1-5%	Flam. Liq. 3 STOT SE 3	H226 H336
Aliphatic Petroleum Distillates	Solvent Naphtha	64742-89-8	265-192-2	10-30%	Carc. 1B Muta. 1B Asp. Tox. 1	H350 H340 H304
Aliphatic Petroleum Distillates	Solvent Naphtha	64742-88-7	265-191-7	7-13%	Asp. Tox. 1	H304
<b>280 Concrete Gray contains:</b>						
Hydrocarbon Propellant	LPG	68476-86-8	270-705-8	10-30%	Press. Gas Flam. Gas 1 Carc. 1B Muta. 1B	H220 H350 H340
Hexane	n-Hexane	110-54-3	203-777-6	5-10%	Flam. Liq. 2 Repr. 2 Asp. Tox. 1 STOT RE 2 * Skin Irrit. 2 STOT SE 3 Aquatic Chronic 2	H225 H361F *** H304 H373 ** H315 H336 H411
Aliphatic Petroleum Distillates	Solvent Naphtha	64742-89-8	265-192-2	5-10%	Carc. 1B Muta. 1B Asp. Tox. 1	H350 H340 H304
n-Butyl Acetate	n-Butyl Ester	123-86-4	204-658-1	1-5%	Flam. Liq. 3 STOT SE 3	H226 H336
Acetone	Propanone	67-64-1	200-662-2	1-5%	Flam. Liq. 2 Eye Irrit. 2 STOT SE 3	H225, H319, H336
Ethyl Acetate	Ethanoate	141-78-6	205-500-4	1-5%	Flam. Liq. 2 Eye Irrit. 2 STOT SE 3	H225 H319 H336
2-Butoxyethyl Acetate	Butyl Glycol Acetate	112-07-2	203-933-3	1-5%	Acute Tox. 4 * Acute Tox. 4 *	H332 H312

## Other Product Information

Chemical Identity: Mixture





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## 4.) First Aid Measures

<b>General Advice:</b>	If symptoms persist, always call a doctor.
<b>Inhalation First Aid:</b>	Remove victim to fresh air and provide oxygen if breathing is difficult. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention immediately.
<b>Skin Contact First Aid:</b>	Wash with soap and water. Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse.
<b>Eye Contact First Aid:</b>	If contact with eyes, immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids open. Get medical attention immediately.
<b>Ingestion First Aid:</b>	If swallowed, wash out mouth with water provided the person is conscious. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.
<b>Most Important Symptoms/Effects:</b>	Exposure may cause slight irritation to the skin, eyes, and respiratory tract. Excessive exposure may cause central nervous system effects.

## 5. Fire Fighting Measures

<b>Flammable Properties:</b>	Aerosol
<b>Auto Ignition Temperature:</b>	Not Available
<b>Suitable extinguishing media:</b>	Carbon dioxide, dry chemical, water spray.
<b>Unsuitable extinguishing media:</b>	None known
<b>Special hazards arising from the substance or mixture:</b>	None known
<b>Hazardous combustion products:</b>	Carbon dioxide, Carbon monoxide
<b>Fire &amp; Explosion Hazards:</b>	Closed Containers may rupture due to the buildup of pressure from extreme temperatures.
<b>Precautions for fire-fighters:</b>	Use water spray to cool containers exposed to heat or fire to prevent pressure build up. In the event of a fire, wear full protective clothing and NIOSH- approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

## 6. Accidental Release Measures

### PERSONAL PRECAUTIONARY MEASURES:

- 1) Follow personal protective equipment recommendations found in section 8.
- 2) Maintain adequate ventilation.

### SPILL CLEAN-UP PROCEDURES:

- 1.) Evacuate unprotected personnel from the area.



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- 2.) Remove sources of ignition if safe to do so.
- 3.) Pickup spilled materials using non-sparking tools and place in an appropriate container for disposal.
- 4.) Contain spill to prevent material from entering sewage or ground water systems.
- 5.) Always dispose of waste materials in accordance with all EU, National and Local Regulations.

## 7. Handling and Storage

### Handling:

Flammable Aerosol, use in a well ventilated area.  
 Do not use near sources of ignition.  
 Do not to eat, drink and smoke while working with this material.  
 Wash hands after use.

### Conditions for safe storage, including any incompatibilities:

Store out of direct sunlight.  
 Storage Temperature: 32° to 120°F (0° to 49°C).  
 No known incompatibilities.

## 8. Exposure Controls / Personal Protection

### Appropriate engineering controls:

Ensure adequate ventilation. A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits.  
 Keep away from sources of ignition.  
 Take precautionary measures against static discharge.

### Personal Protection:

Eye & face protection devices such as safety glasses, safety goggles or face shield are recommended.

### Skin protection

Wear the appropriate protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

### Respiratory protection:

Use only in an adequately ventilated area. For unknown vapor concentrations use a positive-pressure, pressure-demand, self-contained breathing apparatus (SCBA).

Hazardous Ingredient	CAS Number	ACGIH TLV (TWA)	ACGIH TLV (STEL)	OSHA PEL (TWA)	OSHA PEL (STEL)
Aliphatic Petroleum Distillates	64742-88-7	N/AV	N/AV	N/AV	N/AV
Aliphatic Petroleum Distillates	64742-89-8	N/AV	N/AV	N/AV	N/AV
Hydrocarbon Propellant	68476-86-8	N/AV	N/AV	N/AV	N/AV
Aliphatic Petroleum Distillates	8032-32-4	200ppm	300ppm	200ppm	N/AV
Hexane	110-54-3	50ppm	N/AV	500ppm	N/AV
Acetone	67-64-1	500ppm	750ppm	1000ppm	N/AV
Aliphatic Hydrocarbon	8052-41-3	100ppm	N/AV	500ppm	N/AV



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n-Butyl Acetate	123-86-4	150ppm	200ppm	150ppm	N/AV
Aliphatic Petroleum Distillates	64742-47-8	N/AV	N/AV	N/AV	N/AV
Ethyl Acetate	141-78-6	400ppm	N/AV	400ppm	N/AV
2-Butoxyethyl Acetate	112-07-2	20ppm	N/AV	N/AV	N/AV

\*Values are based on the 2014 Guide to Occupational Exposure Values by ACGIH

## 9. Information on Basic Physical and Chemical Properties

Appearance: Color varies by product.	Odor: Hydrocarbon Odor
Odor Threshold: N/AV	pH: Not Applicable (solvent Base)
Melting Point: N/AV	Freezing Point: N/AV
Initial Boiling Point: N/AV	Boiling Point Range: N/AV
Flash Point: <0° F (-18° C)	Evaporation Rate: Faster than n-Butyl Acetate
Flammability Solid/Gas: Flammable gas	Upper LEL: 1% Lower LEL: 13%
Vapor Pressure: N/AV	Vapor Density: Heavier Than Air
Relative Density: N/AV	Solubility: Negligible
Partition Coefficient: n-octanol/ water: N/AV	Auto-ignition Temperature: N/AV
Decomposition Temperature: N/AV	Viscosity: N/AV
Explosive Properties: N/AV	Oxidizing Properties: N/AV

## 10. Stability & Reactivity

Possibility of hazardous reactions: Hazardous polymerization will not occur under normal conditions  
 Chemical stability: Stable under normal conditions  
 Conditions to avoid: Heat and ignition sources  
 Incompatible materials: Strong Oxidizing Agents  
 Hazardous decomposition products: Will not occur

## 11. Toxicological Information

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Repeated overexposure can also damage kidneys, lungs, liver, heart and blood

Routes of exposure: Eyes, skin, ingestion, and/or inhalation

Acute toxicological data: (Acetone) Acute oral LD50: 5800mg/kg(rat)  
 (Acetone) LC50: 21000 ppm / 8 hr (rat)  
 (Hexane) LD50: 2870 mg/kg (Rat-Oral)  
 Eye irritation data: N/AV

Skin irritation/sensitization/absorption data: N/AV



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Reproductive toxicity data: N/AV

Mutagenicity data: Muta 1B

Symptoms associated with physical contact: N/AV

Acute/chronic effects from short/long term exposure: Irritating to skin. Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis. Not expected to be a skin sensitizer.

Known reportable carcinogens via the following agencies:

NTP: N/AV  
IARC: IARC3:Classification not possible from current data  
OSHA: TLV-A4

\* Petroleum distillates may contain chemical carcinogens in limited quantities (< 0.01%). These quantities are determined by the supplier/fraction/purity of the distillate during the manufacturing process. Chemicals that may be present within distillates are listed on California's prop 65 list such as ETHYLBENZENE, BENZENE, and TOLUENE.

## 12. Ecological Information

Ecotoxicity: **No Data Available**  
Persistence and degradability: **No Data Available**  
Bioaccumulative potential: **No Data Available**  
Mobility in soil: **No Data Available**  
Results of PBT and vPvB assessment: **No Data Available**  
Other adverse effects: **No Data Available**

## 13. Disposal Considerations

**Waste Disposal:** Dispose of material in accordance with EU, national and local requirements. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permitted under applicable rules, regulations and/or laws governing your location.  
**Product / Packaging disposal:** Dispose of packaging in accordance with federal, state and local requirements, regulations and/or laws governing your location.

## 14. Transportation Information

### US DOT

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions



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UN1950	Aerosols	2.1	Not Applicable	Not Applicable	Reference 49 CFR 172.101
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## IMDG

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosols	2.1	Not Applicable	Not Applicable	Reference IMDG code part 3

## IATA:

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosols, Flammable	2.1	Not Applicable	Not Applicable	Reference IATA Dangerous Goods Regulation

## 15. Regulatory Information

### Workplace classification:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200). The Occupational Safety and Health Administration's interpretation of the product's hazard to workers.

### SARA Title 3:

Section 311/312 Categorizations (40 CFR 372): This product is a hazardous chemical under 29 CFR 1910.1200, and is categorized as an immediate and delayed health, and flammability physical hazard. Superfund Amendment and Reauthorization Act (SARA) category. SARA requires reporting any spill of any hazardous substance.

**TSCA status:** All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

**WHMIS:** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the (M)SDS contains all of the information required by the CPR.

**PROP 65 (CA): WARNING:** This product may contain chemicals know to the state of California to cause cancer, birth defects or other reproductive harm.

## 16. Other Information

This SDS has been completed in accordance with GHS Rev04 (2011): U.S OSHA, CMA, ANSI, Canadian WHMIS standards, and European Directives.

Date of Preparation/Revision: 5/2/2016  
Supersedes: (7/27/2015)

To the best of our knowledge, the information contained herein is believed to be accurate. However, the above data does not imply any guarantee or warranty of any kind, expressed or implied. The final



# Safety Data Sheet (SDS)

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determination of the suitability of any material is the sole responsibility of the user. All materials made present un-known hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee these are the only hazards existing.

Upside down Paint

By

Rust-O-Leum

# Safety Data Sheet



## 1. Identification

<b>Product Name:</b>	PRO LSPR 6PK MARK FLUORESCENT ORANGE	<b>Revision Date:</b>	6/5/2015
<b>Product Identifier:</b>	2554838	<b>Supersedes Date:</b>	New SDS
<b>Product Use/Class:</b>	Marking Paint/Aerosols		
<b>Supplier:</b>	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA	<b>Manufacturer:</b>	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA
<b>Preparer:</b>	Regulatory Department		
<b>Emergency Telephone:</b>	24 Hour Hotline: 847-367-7700		

## 2. Hazard Identification

### Classification

### Symbol(s) of Product



### Signal Word

Danger

### Possible Hazards

60% of the mixture consists of ingredient(s) of unknown acute toxicity

### GHS HAZARD STATEMENTS

Flammable Aerosol, category 1	H222	Extremely flammable aerosol.
Acute Toxicity, Dermal, category 4	H312	Harmful in contact with skin.
Germ Cell Mutagenicity, category 1B	H340	May cause genetic defects . Classified as mutagenic Category 1 if one ingredient is present at or above 0.1% Applies to liquids, Solids (w/w units) and gases (v/v). The substance may also have its own exposure limit. Routes of exposure are dependant on ingredient form.
Carcinogenicity, category 1B	H350	May cause cancer. Classified as carcinogenic Category 1 on the basis of epidemiological and/or animal data. Mixtures are classified as carcinogenic when at least 1 ingredient has been classified as carcinogenic and is present at 0.1% or above Routes of exposure are dependant on ingredient form.

### GHS LABEL PRECAUTIONARY STATEMENTS

P201	Obtain special instructions before use.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P410+P412	Protect from sunlight. Do no expose to temperatures exceeding 50°C/ 122°F.



### 3. Composition/Information On Ingredients

#### HAZARDOUS SUBSTANCES

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Wt.% Range</u>	<u>GHS Symbols</u>	<u>GHS Statements</u>
Aliphatic Hydrocarbon	64742-89-8	10-25	GHS08	H304-340-350
Propane	74-98-6	10-25	No Information	No Information
Limestone	1317-65-3	10-25	No Information	No Information
Hydrous Magnesium Silicate	14807-96-6	2.5-10	No Information	No Information
n-Butane	106-97-8	2.5-10	No Information	No Information
Acetone	67-64-1	2.5-10	GHS02-GHS07	H225-319-336
n-Butyl Acetate	123-86-4	2.5-10	GHS02-GHS07	H226-336
Hydrotreated Light Distillate	64742-47-8	2.5-10	GHS06-GHS08	H304-331
Naphtha, Petroleum, Hydrotreated Light	64742-49-0	1.0-2.5	GHS08	H304-340-350
Organoclay	68911-87-5	1.0-2.5	No Information	No Information
Stoddard Solvent	8052-41-3	0.1-1.0	GHS08	H304-340-350-372
Ethylbenzene	100-41-4	0.1-1.0	GHS02-GHS07	H225-332

The text for GHS Hazard Statements shown above (if any) is given in the "16. Other Information" section.

### 4. First-aid Measures

**FIRST AID - EYE CONTACT:** Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

**FIRST AID - SKIN CONTACT:** Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

**FIRST AID - INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention. Do NOT use mouth-to-mouth resuscitation. If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

**FIRST AID - INGESTION:** Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention. If swallowed, get medical attention.

### 5. Fire-fighting Measures

**EXTINGUISHING MEDIA:** Alcohol Film Forming Foam, Carbon Dioxide, Dry Chemical, Dry Sand, Water Fog

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** FLASH POINT IS LESS THAN 20°F. EXTREMELY FLAMMABLE LIQUID AND VAPOR! Water spray may be ineffective. Closed containers may explode when exposed to extreme heat due to buildup of steam. Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the pressurized container may cause bursting of the can. No unusual fire or explosion hazards noted.

**SPECIAL FIREFIGHTING PROCEDURES:** Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion. Full protective equipment including self-contained breathing apparatus should be used. Evacuate area and fight fire from a safe distance. Use water spray to keep fire-exposed containers cool. Containers may explode when heated.

### 6. Accidental Release Measures

**STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:** Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers. Ventilate area, isolate spilled material, and remove with inert absorbent. Dispose of contaminated absorbent, container, and unused contents in accordance with local, state, and federal regulations.

### 7. Handling and Storage

**HANDLING:** Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and launder before reuse. Use only in a well-ventilated area. Use only with adequate ventilation. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid breathing fumes, vapors, or mist. Avoid contact with eyes, skin and clothing.

**STORAGE:** Store in a dry, well ventilated place. Keep container tightly closed when not in use. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Contents under pressure. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Keep away from heat, sparks, flame and sources of ignition. Contents under pressure. Do not expose to heat or store above 120 ° F. Avoid excess heat. Product should be stored in tightly sealed containers and protected from heat, moisture, and foreign materials.

## 8. Exposure Controls/Personal Protection

Chemical Name	CAS-No.	Weight % Less Than	ACGIH TLV- TWA	ACGIH TLV- STEL	OSHA PEL-TWA	OSHA PEL- CEILING
Aliphatic Hydrocarbon	64742-89-8	20.0	N.E.	N.E.	N.E.	N.E.
Propane	74-98-6	20.0	1000 ppm	N.E.	1000 ppm	N.E.
Limestone	1317-65-3	20.0	N.E.	N.E.	15 mg/m3	N.E.
Hydrous Magnesium Silicate	14807-96-6	10.0	2 mg/m3	N.E.	N.E.	N.E.
n-Butane	106-97-8	10.0	N.E.	1000 ppm	N.E.	N.E.
Acetone	67-64-1	10.0	500 ppm	750 ppm	1000 ppm	N.E.
n-Butyl Acetate	123-86-4	5.0	150 ppm	200 ppm	150 ppm	N.E.
Hydrotreated Light Distillate	64742-47-8	5.0	N.E.	N.E.	N.E.	N.E.
Naphtha, Petroleum, Hydrotreated Light	64742-49-0	5.0	N.E.	N.E.	N.E.	N.E.
Organoclay	68911-87-5	5.0	N.E.	N.E.	N.E.	N.E.
Stoddard Solvent	8052-41-3	1.0	100 ppm	N.E.	500 ppm	N.E.
Ethylbenzene	100-41-4	1.0	20 ppm	N.E.	100 ppm	N.E.

### PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment. Provide general dilution of local exhaust ventilation in volume and pattern to keep TLV of hazardous ingredients below acceptable limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation.

**RESPIRATORY PROTECTION:** A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

**SKIN PROTECTION:** Use gloves to prevent prolonged skin contact. Use impervious gloves to prevent skin contact and absorption of this material through the skin. Nitrile or Neoprene gloves may afford adequate skin protection.

**EYE PROTECTION:** Use safety eyewear designed to protect against splash of liquids.

**OTHER PROTECTIVE EQUIPMENT:** Refer to safety supervisor or industrial hygienist for further guidance regarding types of personal protective equipment and their applications. Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

**HYGIENIC PRACTICES:** Wash thoroughly with soap and water before eating, drinking or smoking. Remove contaminated clothing immediately and launder before reuse.

## 9. Physical and Chemical Properties

<b>Appearance:</b>	Aerosolized Mist	<b>Physical State:</b>	Liquid
<b>Odor:</b>	Solvent Like	<b>Odor Threshold:</b>	N.E.
<b>Relative Density:</b>	0.871	<b>pH:</b>	N.A.
<b>Freeze Point, °C:</b>	N.D.	<b>Viscosity:</b>	N.D.
<b>Solubility in Water:</b>	Slight	<b>Partition Coefficient, n-octanol/ water:</b>	N.D.
<b>Decomposition Temp., °C:</b>	N.D.	<b>Explosive Limits, vol%:</b>	0.9 - 13.0
<b>Boiling Range, °C:</b>	-24 - 537	<b>Flash Point, °C:</b>	-96
<b>Flammability:</b>	Supports Combustion	<b>Auto-ignition Temp., °C:</b>	N.D.
<b>Evaporation Rate:</b>	Faster than Ether	<b>Vapor Pressure:</b>	N.D.
<b>Vapor Density:</b>	Heavier than Air		

(See "Other information" Section for abbreviation legend)

## 10. Stability and Reactivity

**CONDITIONS TO AVOID:** Avoid temperatures above 120 ° F (49°C) Avoid contact with strong acid and strong bases. Avoid all possible sources of ignition.

**INCOMPATIBILITY:** Incompatible with strong oxidizing agents, strong acids and strong alkalis.

**HAZARDOUS DECOMPOSITION:** By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes. Contains solvents which may form carbon monoxide, carbon dioxide, and formaldehyde.

**HAZARDOUS POLYMERIZATION:** Will not occur under normal conditions.

**STABILITY:** This product is stable under normal storage conditions.

## 11. Toxicological information

**EFFECTS OF OVEREXPOSURE - EYE CONTACT:** Causes Serious Eye Irritation

**EFFECTS OF OVEREXPOSURE - SKIN CONTACT:** Substance may cause slight skin irritation. May cause skin irritation. Allergic reactions are possible. Prolonged or repeated contact may cause skin irritation.

**EFFECTS OF OVEREXPOSURE - INHALATION:** Harmful if inhaled. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Avoid breathing fumes, spray, vapors, or mist. High vapor concentrations are irritating to the eyes, nose, throat and lungs. Prolonged or excessive inhalation may cause respiratory tract irritation.

**EFFECTS OF OVEREXPOSURE - INGESTION:** Harmful if swallowed. Aspiration hazard if swallowed; can enter lungs and cause damage.

**EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS:** May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. IARC lists Ethylbenzene as a possible human carcinogen (group 2B).

**PRIMARY ROUTE(S) OF ENTRY:** Eye Contact, Ingestion, Inhalation, Skin Absorption, Skin Contact

### ACUTE TOXICITY VALUES

The acute effects of this product have not been tested. Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
64742-89-8	Aliphatic Hydrocarbon	N.I.	3000 mg/kg Rabbit	N.I.
74-98-6	Propane	N.I.	N.I.	658 mg/L Rat
123-86-4	n-Butyl Acetate	N.I.	>17600 mg/kg Rabbit	N.I.
64742-47-8	Hydrotreated Light Distillate	>5000 mg/kg Rat	>2000 mg/kg Rabbit	>5.2 mg/L Rat
64742-49-0	Naphtha, Petroleum, Hydrotreated Light	>5000 mg/kg Rat	>3160 mg/kg Rabbit	N.I.
100-41-4	Ethylbenzene	3500 mg/kg Rat	15354 mg/kg Rabbit	17.2 mg/L Rat

N.I. - No Information

## 12. Ecological Information

**ECOLOGICAL INFORMATION:** Product is a mixture of listed components. Product is a mixture of listed components.

## 13. Disposal Information

**DISPOSAL INFORMATION:** Dispose of material in accordance to local, state, and federal regulations and ordinances. Do not allow to enter waterways, wastewater, soil, storm drains or sewer systems.

## 14. Transport Information

	<u>Domestic (USDOT)</u>	<u>International (IMDG)</u>	<u>Air (IATA)</u>	<u>TDG (Canada)</u>
UN Number:	N.A.	1950	1950	N.A.
Proper Shipping Name:	Paint Products in Limited Quantities	Aerosols	Aerosols	Paint Products in Limited Quantities
Hazard Class:	N.A.	2.1	2.1	N.A.
Packing Group:	N.A.	N.A.	N.A.	N.A.
Limited Quantity:	Yes	Yes	Yes	Yes

## 15. Regulatory Information

**U.S. Federal Regulations:****CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Pressure Hazard, Acute Health Hazard, Chronic Health Hazard

**Sara Section 313:**

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS-No.</u>
Ethylbenzene	100-41-4

**Toxic Substances Control Act:**

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(b) if exported from the United States:

No TSCA 12(b) components exist in this product.

<b>16. Other Information</b>
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**HMIS RATINGS**

Health: 2\*    Flammability: 4    Physical Hazard: 0    Personal Protection: X

**NFPA RATINGS**

Health: 2    Flammability: 4    Instability: 0

VOLATILE ORGANIC COMPOUNDS, g/L: 522

MSDS REVISION DATE: 6/5/2015

**REASON FOR REVISION:**

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

**Text for GHS Hazard Statements shown in Section 3 describing each ingredient:**

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H372	Causes damage to organs through prolonged or repeated exposure.

**Icons for GHS Pictograms shown in Section 3 describing each ingredient:**

GHS02



GHS06



GHS07



GHS08



Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.

Paint Stick

By

Markal

# Material Safety Data Sheet

IMPORTANT NOTICE: This Material Safety Data Sheet (MSDS) is issued by LA-CO Industries, Inc. (LA-CO) in accordance with the U.S. OSHA Hazard Communication Standard, Canadian WHMIS Controlled Products Regulations, British CHIP2 regulation 6, Australian NMRCWHS and ANSI Z400.1-1993 guidelines. The information contained herein must not be altered, deleted or added to, with the exception of adding supplier/importer information in the space provided. LA-CO has no objection to its MSDS being copied if: a) the copy is made for safety-related purposes; and b) no alterations or amendments are made to the text or format of the MSDS, with the exception of adding supplier/importer information in the space provided. LA-CO does not guaranty the accuracy of any MSDS for our products which: a) is not prepared by LA-CO; b) is not authorized by LA-CO; c) is not in the format originally supplied by LA-CO; or d) has otherwise been amended or altered by a third party, with the exception of adding supplier/importer information in the space provided.

## Section 1 Product and Company Identification

**Product Name:** "ALL WEATHER PAINTSTIK"  
 "ALL WEATHER HOT CLIMATE PAINTSTIK"  
 "B", "B-3/8", "B-E", "B-16", "C", "E", "F", & "N" PAINTSTIKS  
 "LACQUER STIK"

Revision #: 2.4

Date Prepared: December 7, 1994

Date Revised: September 1, 2013

**Manufacturer:**

LA-CO INDUSTRIES, Inc. *Markal Co.*

1201 Pratt Blvd.

Elk Grove Village, IL, USA 60007-5746

Information Telephone: 847-956-7600

Emergency Telephone: Call CHEMTREC

USA 800-424-9300

International (Call Collect) 1-703-527-3887

**Chemical Formula:** Mixture

**CAS No.:** Not Applicable. **Derivation:** Not Applicable.

**Synonyms:** Not Applicable.

**General Use:** Marking and Identification.

**Supplier/Importer:**

## Section 2 Composition/Information on Ingredients

<u>Ingredient</u>	<u>CAS No.</u>	<u>%</u>
Linseed Oil <sup>5,6</sup>	8001-26-1	0 - 40
Carbon Black <sup>3,4,5,6</sup> (Black and gray Paintstiks only) ACGIH: TWA = 3.5 mg/kg OSHA: TWA = 3.5 mg/kg	1333-86-4	2
Aluminum <sup>3,4,5,6</sup> (Silver Paintstiks only) ACGIH: TWA (dust) = 10mg/m <sup>3</sup> OSHA: TWA (dust) = 15mg/m <sup>3</sup> U.S. Safe Drinking Water Act: Appears on the Drinking Water Priority List Substances.	7429-90-5	14
Copper <sup>1,3,4,5,6</sup> (Gold Paintstiks only) ACGIH: TWA = 1 mg/m <sup>3</sup> (dust) OSHA: TWA = 1 mg/m <sup>3</sup> (dust)	7440-50-8	45
Zinc <sup>1,3,4,5</sup> (Gold Paintstik only)	7440-66-6	1.5

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"LACQUER STIK"

Revision #: 2.4 Date Prepared: December 7, 1994 Date Revised: September 1, 2013

MARKAL "B" Paintstik was tested by an independent laboratory and found to be non-toxic, non-irritating to the skin and eyes within the meaning of the U.S. Federal Hazardous Substance Labeling Act.

(For Section 2 footnotes: See Section 15)

<b>Section 3</b>	<b>Hazards Identification</b>
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**EMERGENCY OVERVIEW**

This product is non-hazardous as supplied for shipping, handling, and storage. Note that waste rags soaked with this product may spontaneously catch fire if improperly discarded.

**FOR INDUSTRIAL USE ONLY.**

**POTENTIAL HEALTH EFFECTS**

**Primary Exposure Routes:** Eyes, Ingestion, Inhalation

**Acute Effects**

**Eyes:** Contact may cause mild eye irritation including stinging, watering, and redness. Irritating fumes may be produced during the paint drying process if exposed to large surface area.

**Skin:** None.

**Ingestion:** Possible nausea or diarrhea if large amounts ingested.

**Inhalation:** Irritating fumes may be produced during the paint drying process if exposed to large surface area.

**Chronic Effects**

**Eyes:** Not applicable.

**Skin:** Not applicable.

**Ingestion:** Not applicable.

**Inhalation:** Not applicable.

**Carcinogenicity:**

ACGIH: Carbon Black has been identified by other sources as a suspected or confirmed human carcinogen.

IARC: Carbon Black is not classifiable as a human carcinogen (Group 3); human evidence is inadequate; animal evidence is inadequate.

**Target Organ Effects:** Not Applicable.

**Medical Conditions Aggravated by Long-Term Exposure:** Not Determined.

**Other Information:** Not Applicable.

<b>Section 4</b>	<b>First Aid</b>
------------------	------------------

**Eye Contact:** Flush with water.

**Skin Contact:** Use good industrial hygiene and wash hands after use.

**Ingestion:** Consult physician if discomfort occurs. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON.

**Inhalation:** Move away from source of exposure and into fresh air. Consult physician if discomfort occurs.

**Other Information:** None.

<b>Section 5</b>	<b>Fire Fighting Measures</b>
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**"LACQUER STIK"**

**Revision #: 2.4      Date Prepared: December 7, 1994      Date Revised: September 1, 2013**

**Flash Point (method):** 400°F/204°C (method not determined)  
**Autoignition Temperature:** Not determined.  
**LEL:** Not Determined. **UEL:** Not Determined.  
**Flammability Classification:** Not determined.  
**Extinguishing Media:** Carbon Dioxide, Foam, Dry Chemical.  
**Hazardous Combustion Products:** Carbon Monoxide, Carbon Dioxide.  
**Unusual Fire or Explosion Hazards:** Rags and waste paper containing this product may burn spontaneously. Store wiping rags containing this product in metal containers with tight lids.  
**Fire-Fighting Instructions/Equipment:** Keep personnel removed and upwind of any fire. Wear full fire-fighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

## **Section 6      Accidental Release Measures**

Use recommended personal protective equipment (see Section 8). Rags or waste paper containing this product may burn spontaneously. Dispose of wiping rags in metal containers with tight lids.  
**Small Spill:** Sweep or scrape up.  
**Large Spill:** Generally treat as a small spill. If large quantities are exposed to excessive heat, this product may melt. Allow melted material to cool and then scrape up.

## **Section 7      Handling and Storage**

**Handling Precautions:** Use recommended personal protective equipment (see Section 8). Wash thoroughly after handling.  
**Storage Requirements:** Store away from incompatible chemicals (see Sec. 10). Store in a cool, dry area.

## **Section 8      Exposure Controls/Personal Protection**

**Eye/Face Protection:** Safety glasses. Use chemical goggles when marking on hot surfaces. Use a face shield as needed.  
**Skin/Hand Protection:** Suitable for related activities where this product is used.  
**Respiratory Protection:** Suitable for related activities where this product is used.  
**Other Equipment:** Eyewash.  
**Engineering Controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to control sources of dust or fumes.  
**Administrative Controls:** Users of this product must be properly trained and qualified in its use.  
**Other Information:** No food or beverage should be consumed in the work area. Wash thoroughly before eating, drinking, or smoking.

## **Section 9      Physical and Chemical Properties**

**Appearance/Physical State:** Cylindrical crayon/solid  
**Odor:** Linseed oil  
**Odor Threshold (ppm):** Not Determined.  
**Specific Gravity (H<sub>2</sub>O = 1):** >1  
**Solubility - Water:** Insoluble  
- Fat: Soluble  
**Coefficient of Water/Oil Solubility:** <1

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Partition Coefficient (n-octanol/water): >1  
pH: Not applicable.  
Melting Point: Approximately 150°F/66°C  
Boiling Point: Not determined.  
Vapor Pressure (mm Hg at 20°C): Not applicable.  
Vapor Density (Air = 1): Not applicable.  
Evaporation Rate (n-BuAc=1): Not applicable.  
V.O.C. (U.S. Clean Air Act Section 111): 0%(w/w)  
Flash Point (method): (see Section 5)  
Autoignition Temperature: (see Section 5)  
Flammability Classification: (see Section 5)  
Unusual Fire or Explosion Hazards: (see Section 5)  
Oxidizing Properties: Not Applicable.  
Other Information: None.  
Note: The physical data represented above are typical values and should not be construed as a specification.

## Section 10      Stability and Reactivity

**Chemical Stability:** Stable  
**Hazardous Polymerization:** May Occur  
**Conditions to Avoid:** High surface area exposure can result in release of heat while paint is polymerizing (drying). Rags and waste paper containing this product may burn spontaneously. Store wiping rags containing this product in metal containers with tight lids.  
**Chemicals to Avoid:** Oxidizers.  
**Hazardous Decomposition Products (non-thermal):** Aldehydes (including acrolein) may be produced from atmospheric oxidation (drying).

## Section 11      Toxicological Information

**Sensitization to Product:** Not Applicable.  
**Irritancy of Product:** Possible irritation to eyes and upon inhalation.  
**Reproductive Toxicity:** Not Applicable.  
**Teratogenicity:** Not Applicable.  
**Mutagenicity:** Not Applicable.

Further hazard information, if applicable, may be found in Section 3. Toxicological information regarding individual ingredients, if applicable, may be found in Section 2.

## Section 12      Ecological Information

**Mobility:** Not Determined.      **Ecotoxicity:** Not Determined.  
**Degradability:** Not Determined.      **Other Adverse Effects:** Not Determined.  
**Accumulation:** Not Determined.

## Section 13      Disposal Considerations

Dispose of in accordance with all applicable regulations.

Product Name:

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**"ALL WEATHER HOT CLIMATE PAINTSTIK"**  
**"B", "B-3/8", "B-E", "B-16", "C", "E", "F", & "N" PAINTSTIKS**  
**"LACQUER STIK"**

Revision #: 2.4

Date Prepared: December 7, 1994

Date Revised: September 1, 2013

The conditions of handling, storage, and use of this product are beyond our control and may be beyond our knowledge. For this and other reasons, LA-CO Industries, Inc. does not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

## Section 14 Transport Information

D.O.T. (U.S.): Not Regulated.

TDG (Canada): Not Regulated.

IATA: Not Regulated.

ICAO: Not Regulated.

IMO: Not Regulated.

Australian Code for the Transport of Dangerous Goods

Dangerous Goods Class and Subsidiary Risk: Not Determined.

## Section 15 Regulatory Information

### Footnotes for Section 2:

- 1 Subject to the reporting requirements of SARA Title III, Section 313.
- 2 Appears on the California Safe Drinking Water and Toxic Enforcement Act (Prop. 65) Substances List.
- 3 Appears on the Massachusetts Substances List.
- 4 Appears on the New Jersey Right-To-Know Hazardous Substances List.
- 5 Appears on the Pennsylvania Hazardous Substances List.
- 6 Appears on the Canadian WHMIS Ingredient Disclosure List.

### U.S.A.

**OSHA Hazard Status:** This product is not considered to be hazardous as defined by the U.S. OSHA HCS (29 CFR 1910.1200).

**EPA SARA sec. 311/312 Hazard Categories:** Not Applicable.

**Toxic Substances Control Act (TSCA):** All ingredients contained in this product are listed on the U.S. EPA TSCA Chemical Substance Inventory.

**HMIS® Rating:** Health 0, Flammability 1, Reactivity 0

**NFPA® (704) Rating:** Health 1, Flammability 1, Reactivity 0

### CANADA

**WHMIS Status:** This product is not considered to be hazardous as defined by Canadian WHMIS Controlled Products Regulations.

**WHMIS Rating:** None.

**WHMIS Risk Phrases:** None.

**WHMIS Precautionary Statements:** None.

**Domestic Substances List (DSL):** All ingredients contained in this product are listed on the Canadian EPA (CEPA) Domestic Substances List (DSL).

### E.U.

**European Inventory of Existing Chemical Substances (EINECS):** All ingredients contained in this product are listed on the European Inventory of Existing Chemical Substances (EINECS).

**Categories of Danger (Labeling Information):** None.

**Risk (R) Phrases:** None.

**Safety (S) Phrases:** None.

### AUSTRALIA

**Worksafe Australia Status:** This product is not classified as hazardous according to criteria of Worksafe Australia.

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"ALL WEATHER HOT CLIMATE PAINTSTIK"  
"B", "B-3/8", "B-E", "B-16", "C", "E", "F", & "N" PAINTSTIKS  
"LACQUER STIK"

**Revision #:** 2.4      **Date Prepared:** December 7, 1994      **Date Revised:** September 1, 2013

**HAZCHEM Code:** None allocated.  
**Poisons Schedule Number:** None allocated.

Further regulatory information regarding individual ingredients, if applicable, may be found in Section 2.

This product has been classified in accordance with the hazard criteria of the U.S. OSHA Hazard Communication Standard, the Canadian WHMIS Controlled Products Regulations, the British CHIP2 regulation 6, and the Australian NMRCWHS. This MSDS contains the information required by the above regulations and conforms to ANSI Z400.1-1993.

<b>Section 16</b>	<b>Other Information</b>
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HMIS is a registered trademark of the National Paint and Coatings Association.

NFPA is a registered trademark of the National Fire Protection Association.

**MSDS Prepared By:** Director of Chemical Safety

**The information contained herein is based on data available to us and is accurate and reliable to the best of our knowledge and belief. However, LA-CO Industries, Inc. makes no representations as to its completeness or accuracy. Information is supplied on condition that persons receiving such information will make their own determination as to its suitability for their purposes prior to use. In no event will LA-CO Industries, Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information contained herein.**

Twist Stick

By

Markal

# Quik Stik® TWIST PAINT MARKER White, Lime Green

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)  
Date of issue: 02/05/2015  
Version: 1.0

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product form : Mixture  
Product name : Quik Stik® TWIST PAINT MARKER White, Lime Green

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Marking.

### 1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.  
1201 Pratt Boulevard  
Elk Grove Village, IL. 60007-5746  
Phone (847) 956-7600  
Fax: (847) 956-9885  
E-mail: customer\_service@laco.com



### 1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

## SECTION 2: Hazards Identification

### 2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

Skin Irrit. 2 H315  
Eye Irrit. 2A H319  
Repr. 2 H361

Full text of classification categories and H statements : see section 16

### 2.2. Label elements

#### GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

GHS08

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H361 - Suspected of damaging fertility or the unborn child

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P264 - Wash hands thoroughly after handling  
P280 - Wear eye protection, protective gloves, protective clothing  
P302+P352 - If on skin: Wash with plenty of water  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P308+P313 - If exposed or concerned: Get medical advice/attention  
P321 - Specific treatment (see First aid measures on this label)  
P332+P313 - If skin irritation occurs: Get medical advice/attention  
P337+P313 - If eye irritation persists: Get medical advice/attention  
P362 - Take off contaminated clothing and wash before reuse  
P405 - Store locked up  
P501 - Dispose of contents/container to Dispose in a safe manner in accordance with local/national regulations

# Quik Stik® TWIST PAINT MARKER White, Lime Green

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 2.3. Other hazards

### 2.4. Unknown acute toxicity (GHS US)

15.71 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)  
15.71 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)  
15.71 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

## SECTION 3: Composition/information on Ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product Identifier	% (w/w)	GHS-US classification
1-butoxypropan-2-ol	(CAS No) 5131-66-8	30.4 – 31.04 White 35 – 35.74 Lime Green	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319
(2-Methoxymethyl ethoxy)-propanol	(CAS No) 34590-94-8	8 White 9.65 Lime Green	Flam. Liq. 4, H227
N-Ethyl O/P Toluene Sulfonamides	(CAS No) 8047-89-2	4 White 1.48 Lime Green	Acute Tox. 3 (Dermal), H311
4-tert-butylphenol	(CAS No) 98-54-4	0.4 – 0.16 White 0.16 – 0.39 Lime Green	Skin Irrit. 2, H315 Eye Dam. 1, H318 Repr. 2, H361 STOT SE 3, H335 Aquatic Chronic 2, H411

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
First-aid measures after skin contact	: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries	: Suspected of damaging fertility or the unborn child.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.

### 4.3. Indication of any immediate medical attention and special treatment needed

All treatments should be based on observed signs and symptoms of distress in the patient.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	: None known.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard	: Combustible. Combustion generates : Carbon oxides (CO, CO <sub>2</sub> ). Nitrogen oxides. Sulphur oxides. metallic oxides.
Explosion hazard	: Product is not explosive.
Reactivity	: No dangerous reactions known.

### 5.3. Advice for firefighters

Firefighting instructions	: Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/flame resistant/retardant clothing.

# Quik Stik® TWIST PAINT MARKER White, Lime Green

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid contact with skin and eyes. Avoid creating or spreading dust.

##### 6.1.1. For non-emergency personnel

Protective equipment : Chemical goggles or safety glasses. Wear suitable protective clothing and gloves.

Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

Protective equipment : Chemical goggles or safety glasses. Wear suitable protective clothing and gloves.

Emergency procedures : Ventilate area.

#### 6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

#### 6.3. Methods and material for containment and cleaning up

For containment : Contain and collect as any solid.

Methods for cleaning up : Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting.

#### 6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Hygiene measures : Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep away from ignition sources. Keep container closed when not in use. Protect from sunlight.

Incompatible products : Strong oxidizers. Acids.

Incompatible materials : Sources of ignition.

#### 7.3. Specific end use(s)

Marking

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Quik Stik® TWIST PAINT MARKER White, Lime Green		
ACGIH	Not applicable	
OSHA	Not applicable	
N-Ethyl O/P Toluene Sulfonamides (8047-99-2)		
ACGIH	Not applicable	
OSHA	Not applicable	
4-tert-butylphenol (98-54-4)		
ACGIH	Not applicable	
OSHA	Not applicable	
1-butoxypropan-2-ol (5131-66-8)		
ACGIH	Not applicable	
OSHA	Not applicable	
(2-Methoxymethylethoxy)-propanol (34590-94-8)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	606 mg/m <sup>3</sup>
ACGIH	ACGIH TWA (ppm)	100 ppm
ACGIH	ACGIH STEL (mg/m <sup>3</sup> )	909 mg/m <sup>3</sup>
ACGIH	ACGIH STEL (ppm)	150 ppm



# Quik Stik® TWIST PAINT MARKER White, Lime Green

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### (2-Methoxymethylethoxy)-propanol (34590-94-8)

OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	600 mg/m <sup>3</sup>
OSHA	OSHA PEL (TWA) (ppm)	100 ppm
OSHA	OSHA PEL (STEL) (mg/m <sup>3</sup> )	600 mg/m <sup>3</sup>
Canada (Quebec)	VECD (mg/m <sup>3</sup> )	909 mg/m <sup>3</sup>
Canada (Quebec)	VECD (ppm)	150 ppm
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	606 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (ppm)	100 ppm

### 8.2. Exposure controls

Appropriate engineering controls	: Either local exhaust or general room ventilation is usually required.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear suitable gloves. Use rubber gloves.
Eye protection	: Chemical goggles or safety glasses.
Skin and body protection	: Wear suitable protective clothing. Long sleeved protective clothing.
Respiratory protection	: Where excessive vapour may result, wear approved mask. Use air-purifying respirator equipped with particulate filtering cartridges.
Other information	: Do not eat, drink or smoke when using this product.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: A solid crayon-like marker.
Colour	: white. Green.
Odour	: Solvent.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 62 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

VOC content	: 48.87 %
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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known.

### 10.2. Chemical stability

Stable under normal conditions.

# Quik Stik® TWIST PAINT MARKER White, Lime Green

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Heat. Direct sunlight.

### 10.5. Incompatible materials

Strong acids. Strong oxidizers.

### 10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. Nitrogen oxides. metallic oxides. Sulphur oxides.

## SECTION 11: Toxicological Information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

#### N-Ethyl O/P Toluene Sulfonamides (8047-99-2)

LD50 oral rat	2250 mg/kg
LD50 dermal rabbit	1000 mg/kg
ATE CLP (oral)	2250.000 mg/kg bodyweight
ATE CLP (dermal)	1000.000 mg/kg bodyweight

#### 4-tert-butylphenol (98-54-4)

LD50 oral rat	> 2000 mg/kg No mortality observed
LD50 dermal rabbit	> 16 g/kg No mortality observed
LC50 inhalation rat (mg/l)	5.6 mg/l/4h
ATE CLP (vapours)	5.600 mg/l/4h
ATE CLP (dust,mist)	5.600 mg/l/4h

#### 1-butoxypropan-2-ol (5131-86-8)

LD50 oral rat	3300 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 Inhalation rat (ppm)	> 651 ppm/4h
ATE CLP (oral)	3300.000 mg/kg bodyweight

#### (2-Methoxymethylethoxy)-propanol (34590-94-8)

LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 19020 mg/kg
LC50 inhalation rat (mg/l)	> 1667 mg/l/4h

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified.
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
<b>Potential adverse human health effects and symptoms</b>	
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Likely routes of exposure	: Skin and eye contact

## SECTION 12: Ecological Information

### 12.1 Toxicity

#### 4-tert-butylphenol (98-54-4)

LC50 fish 1	> 1 mg/l 96 h
EC50 Daphnia 1	4.8 mg/l 48 h

#### 1-butoxypropan-2-ol (5131-86-8)

LC50 fish 1	> 560 (560 - 1000) mg/l 96 h
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# Quik Stik® TWIST PAINT MARKER White, Lime Green

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 1-butoxypropan-2-ol (5131-86-8)

EC50 Daphnia 1 > 1000 mg/l 48 h

### (2-Methoxymethylethoxy)-propanol (34590-94-8)

LC50 fish 1 > 1000 mg/l *Poecilia reticulata*

ErC50 (algae) > 1000 mg/l

### 12.2. Persistence and degradability

#### 4-tert-butylphenol (98-54-4)

Biodegradation 60 % 28 d

#### 1-butoxypropan-2-ol (5131-86-8)

Persistence and degradability Readily biodegradable.

#### (2-Methoxymethylethoxy)-propanol (34590-94-8)

Persistence and degradability Readily biodegradable.

### 12.3. Bioaccumulative potential

#### 4-tert-butylphenol (98-54-4)

Log Pow 3

#### 1-butoxypropan-2-ol (5131-86-8)

Log Pow 1.2

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

## SECTION 14: Transport information

In accordance with DOT and TDG

Not considered a dangerous good for transport regulations

Proper Shipping Name (ADR) : Not applicable

### Transport by sea

No additional information available

### Air transport

No additional information available

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### N-Ethyl O/P Toluene Sulfonamides (8047-99-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 4-tert-butylphenol (98-54-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 1-butoxypropan-2-ol (5131-86-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### (2-Methoxymethylethoxy)-propanol (34590-94-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

### 15.2. International regulations

#### CANADA

#### N-Ethyl O/P Toluene Sulfonamides (8047-99-2)

Listed on the Canadian DSL (Domestic Substances List) inventory.

#### 4-tert-butylphenol (98-54-4)

Listed on the Canadian DSL (Domestic Substances List) inventory.

# Quik Stik® TWIST PAINT MARKER White, Lime Green

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 1-butoxypropan-2-ol (5131-66-8)

Listed on the Canadian DSL (Domestic Substances List) inventory.

### (2-Methoxymethylethoxy)-propanol (34590-94-8)

Listed on the Canadian DSL (Domestic Substances List) inventory.

## EU-Regulations

### N-Ethyl O/P Toluene Sulfonamides (8047-99-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### 4-tert-butylphenol (98-54-4)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### 1-butoxypropan-2-ol (5131-66-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### (2-Methoxymethylethoxy)-propanol (34590-94-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

## National regulations

### Quik Stik® TWIST PAINT MARKER White, Lime Green

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).

All ingredients are listed in the Toxic Substances Control Act (TSCA).

All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

## 15.3. US State regulations

### (2-Methoxymethylethoxy)-propanol (34590-94-8)

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - New York - Right to Know List of Hazardous Chemicals

U.S. - Massachusetts - Right To Know List

U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: Other information

Indication of changes

: Original Document.

Data sources

: ACGIH 2000.

Canadian Centre for Occupational Health and Safety. Accessed at:  
[http://www.ccohs.ca/osh/safety/topics/whmis\\_classification.html](http://www.ccohs.ca/osh/safety/topics/whmisclassification.html).

ESIS (European Chemical Substances Information System; accessed at:  
<http://esis.jrc.it/>).

European Chemicals Agency (ECHA) Registered Substances list. Accessed at  
<http://echa.europa.eu/>. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.

National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition.

OSHA 29CFR 1910.1200 Hazard Communication Standard.

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

TSCA Chemical Substance Inventory. Accessed at  
<http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.

Abbreviations and acronyms

ACGIH (American Conference of Government Industrial Hygienists).

ATE: Acute Toxicity Estimate.

CAS (Chemical Abstracts Service) number.

CLP: Classification, Labelling, Packaging.

EC50: Environmental Concentration associated with a response by 50% of the test population.

GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).

LD50: Lethal Dose for 50% of the test population.

OSHA: Occupational Safety & Health Administration.

PBT: Persistent, Bioaccumulative, Toxic.

STEL: Short Term Exposure Limits.

TSCA: Toxic Substances Control Act.

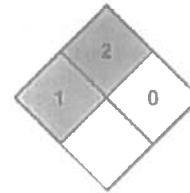
TWA: Time Weight Average.

# Quik Stik® TWIST PAINT MARKER White, Lime Green

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

Other information	: None.
NFPA health hazard	: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard	: 2 - Must be moderately heated or exposed to relatively high temperature before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



### Full text of H-statements:

Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Flam. Liq. 3	Flammable liquids, Category 3
Flam. Liq. 4	Flammable liquids, Category 4
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H226	Flammable liquid and vapour
H227	Combustible liquid
H311	Toxic in contact with skin
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H361	Suspected of damaging fertility or the unborn child
H411	Toxic to aquatic life with long lasting effects

SDS Prepared by: The Redstone Group, LLC  
6077 Frantz Rd.  
Suite 206  
Dublin, OH USA 43016  
T 614-923-7472  
[www.redstonegrp.com](http://www.redstonegrp.com)

### LACO NA GHS SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

Lacquer Stick

By

Markal

# Lacquer Stik® White

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)  
Date of issue: 07/17/2015  
Version: 1.0

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product Identifier

Product form : Mixture  
Trade name : Lacquer Stik® White

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Paint.

### 1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.  
1201 Pratt Boulevard  
Elk Grove Village, IL. 60007-5746  
Phone: (847) 956-7600  
Fax: (847) 956-9885  
E-mail: customer\_service@laco.com



### 1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

## SECTION 2: Hazards Identification

### 2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

Skin Sens. 1A H317  
Repr. 2 H361  
Aquatic Chronic 2 H411

Full text of classification categories and H statements : see section 16

### 2.2. Label elements

#### GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H317 - May cause an allergic skin reaction  
H361 - Suspected of damaging fertility or the unborn child  
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P261 - Avoid breathing dust, fume  
P272 - Contaminated work clothing must not be allowed out of the workplace  
P273 - Avoid release to the environment  
P280 - Wear eye protection, protective gloves  
P302+P352 - If on skin: Wash with plenty of water  
P308+P313 - If exposed or concerned: Get medical advice/attention  
P321 - Specific treatment (see First aid measures on this label)  
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention  
P363 - Wash contaminated clothing before reuse  
P391 - Collect spillage  
P405 - Store locked up  
P501 - Dispose of contents/container to an authorised waste collection point

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/Information on Ingredients

# Lacquer Stik® White

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 56 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product Identifier	% (w/w)	GHS-US classification
zinc oxide	(CAS No) 1314-13-2	4.55	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
cobalt bis(2-ethylhexanoate)	(CAS No) 136-52-7	0.14	Eye Irrit. 2A, H319 Skin Sens. 1A, H317 Repr. 2, H361 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
- First-aid measures after skin contact : Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water.
- First-aid measures after ingestion : Get medical advice/attention if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Suspected of damaging fertility or the unborn child.
- Symptoms/injuries after inhalation : May cause respiratory irritation.
- Symptoms/injuries after skin contact : May cause an allergic skin reaction.
- Symptoms/injuries after eye contact : May cause slight irritation.
- Symptoms/injuries after ingestion : Diarrhea. Nausea.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

- Suitable extinguishing media : Carbon dioxide, Foam, Dry chemical.
- Unsuitable extinguishing media : None known.

### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : No particular fire or explosion hazard.
- Reactivity : No dangerous reactions known.

### 5.3. Advice for firefighters

- Firefighting instructions : Keep upwind.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Use self-contained breathing apparatus.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid contact with skin and eyes. Avoid creating or spreading dust.

#### 6.1.1. For non-emergency personnel

- Protective equipment : Chemical goggles or safety glasses. Wear suitable gloves.
- Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

- Protective equipment : Chemical goggles or safety glasses. Wear suitable gloves.
- Emergency procedures : Ventilate area. Stop leak if safe to do so.

### 6.2. Environmental precautions

Avoid release to the environment.



# Lacquer Stik® White

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### 6.3. Methods and material for containment and cleaning up

- For containment : Contain and collect as any solid.  
Methods for cleaning up : Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting.

### 6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling : Avoid breathing dust. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.  
Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Always wash your hands immediately after handling this product, and once again before leaving the workplace.

### 7.2. Conditions for safe storage, including any incompatibilities

- Incompatible products : Oxidizer.  
Incompatible materials : Heat sources.  
Heat and ignition sources : Keep away from heat, sparks and flame.  
Prohibitions on mixed storage : Keep away from incompatible materials.  
Storage area : Store in dry, cool, well-ventilated area.

### 7.3. Specific end use(s)

Paint.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Lacquer Stik® White

ACGIH	Not applicable
OSHA	Not applicable

#### zinc oxide (1314-13-2)

ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
ACGIH	ACGIH STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
ACGIH	Remark (ACGIH)	Metal fume fever
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable dust)
Canada (Quebec)	VECD (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> Fumées
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> Poussières, (la poussière totale) 5 mg/m <sup>3</sup> Fumées

#### cobalt bis(2-ethylhexanoate) (136-52-7)

ACGIH	Not applicable
OSHA	Not applicable

### 8.2. Exposure controls

- Appropriate engineering controls : Eyewash stations. Ensure good ventilation of the work station.  
Personal protective equipment : Avoid all unnecessary exposure.  
Hand protection : Wear suitable gloves.  
Eye protection : Chemical goggles or safety glasses.  
Respiratory protection : In case of inadequate ventilation wear respiratory protection. Wear appropriate mask.  
Other information : Do not eat, drink or smoke when using this product.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

- Physical state : Solid  
Appearance : A solid crayon-like marker.  
Colour : white.

# Lacquer Stik® White

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

Odour	: Oily.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 204 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: insoluble in water
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

VOC content : 0 %

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Heat.

### 10.5. Incompatible materials

Oxidizer.

### 10.6. Hazardous decomposition products

Aldehydes.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

#### zinc oxide (1314-13-2)

LD50 oral rat > 5000 mg/kg no adverse signs of toxicity

LC50 inhalation rat (mg/l) > 5700 mg/l/4h no adverse effects noted

#### cobalt bis(2-ethylhexanoate) (136-52-7)

LD50 oral rat 3129 (1750 - 5000) mg/l

LD50 dermal rat > 2000 mg/kg

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

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Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
<b>Potential adverse human health effects and symptoms</b>	
Symptoms/injuries after inhalation	: May cause respiratory irritation.
Symptoms/injuries after skin contact	: May cause an allergic skin reaction.
Symptoms/injuries after eye contact	: May cause slight irritation.
Symptoms/injuries after ingestion	: Diarrhea, Nausea.
Likely routes of exposure	: Inhalation;Skin and eye contact

### SECTION 12: Ecological information

**12.1 Toxicity**  
Ecology - water : Harmful to aquatic life with long lasting effects.

<b>zinc oxide (1314-13-2)</b>	
LC50 fish 1	1.793 mg/l 96 hr Danio rerio
EC50 Daphnia 1	1.7 (1.7 - 9) mg/l OECD Guideline 202
LC50 fish 2	0.169 (0.169 - 2.17) mg/l ASTM
NOEC chronic fish	0.199 mg/l OECD Guideline 215 (Fish, Juvenile Growth Test)
NOEC chronic crustacea	0.019 mg/l 9 day
NOEC chronic algae	0.024 mg/l
<b>cobalt bis(2-ethylhexanoate) (136-52-7)</b>	
LC50 fish 1	275 mg/l 96 h
EC50 Daphnia 1	0.441 mg/l 48 h
LOEC (chronic)	0.43 mg/l 34 days read-across cobalt dichloride
NOEC (chronic)	0.21 mg/l 34 days read-across cobalt dichloride

#### 12.2. Persistence and degradability

<b>Lacquer Stik® White</b>	
Persistence and degradability	May cause long-term adverse effects in the environment.
<b>cobalt bis(2-ethylhexanoate) (136-52-7)</b>	
Persistence and degradability	Readily biodegradable.

#### 12.3. Bioaccumulative potential

<b>zinc oxide (1314-13-2)</b>	
Bioaccumulative potential	Not expected to bioaccumulate.
<b>cobalt bis(2-ethylhexanoate) (136-52-7)</b>	
BCF fish 1	2300 (2300 - 3900)

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

Sewage disposal recommendations	: Do not dispose of waste into sewer.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment.

### SECTION 14: Transport information

In accordance with DOT and TDG	
Transport document description	: UN3077 Environmentally hazardous substances, solid, n.o.s. (zinc oxide), 9, III
UN-No.(DOT)	: UN3077
Proper Shipping Name (DOT)	: Environmentally hazardous substances, solid, n.o.s. (zinc oxide)
Transport hazard class(es) (DOT)	: 9 - Class 9 (Miscellaneous dangerous materials)
Packing group (DOT)	: III - Minor Danger

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### ADR

Transport document description : UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide), 9, III, (E)  
Proper Shipping Name (ADR) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide)  
Packing group (ADR) : III  
Class (ADR) : 9 - Miscellaneous dangerous substances and articles

### Transport by sea

UN-No. (IMDG) : UN 3077  
Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide)  
Class (IMDG) : 9 - Miscellaneous dangerous substances and articles  
Packing group (IMDG) : III

### Air transport

UN-No. (IATA) : UN 3077  
Proper Shipping Name (IATA) : Environmentally hazardous substance, solid, n.o.s. (zinc oxide)  
Class (IATA) : 9 - Miscellaneous Dangerous Goods  
Packing group (IATA) : III

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### zinc oxide (1314-13-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### cobalt bis(2-ethylhexanoate) (136-52-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. International regulations

#### CANADA

#### zinc oxide (1314-13-2)

Listed on the Canadian DSL (Domestic Substances List) inventory.

#### cobalt bis(2-ethylhexanoate) (136-52-7)

Listed on the Canadian DSL (Domestic Substances List) inventory.

### EU-Regulations

#### zinc oxide (1314-13-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)- Directive 79/831/EEC, sixth Amendment of Directive 67/548/EEC (dangerous substances)

#### cobalt bis(2-ethylhexanoate) (136-52-7)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### National regulations

#### Lacquer Stik® White

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).

All ingredients are listed in the Toxic Substances Control Act (TSCA).

All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

### 15.3. US State regulations

No additional information available

## SECTION 16: Other information

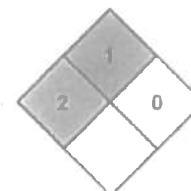
Indication of changes : Original Document.

# Lacquer Stik® White

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Data sources	: ACGIH (American Conference of Government Industrial Hygienists). European Chemicals Agency (ECHA) C&L Inventory database. Accessed at <a href="http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database">http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database</a> . Kristen Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition. OSHA 29CFR 1910.1200 Hazard Communication Standard. TSCA Chemical Substance Inventory. Accessed at <a href="http://www.epa.gov/opp/ehexistingchemicals/pubs/tscainventory/howto.html">http://www.epa.gov/opp/ehexistingchemicals/pubs/tscainventory/howto.html</a> .
Abbreviations and acronyms	: ATE: Acute Toxicity Estimate, CAS (Chemical Abstracts Service) number. CLP: Classification, Labelling, Packaging. EC50: Environmental Concentration associated with a response by 50% of the test population. GHS: Globally Harmonized System (of Classification and Labeling of Chemicals). LD50: Lethal Dose for 50% of the test population. OSHA: Occupational Safety & Health Administration. PBT: Persistent, Bioaccumulative, Toxic. TWA: Time Weight Average. TSCA: Toxic Substances Control Act.
Other information	: None.
NFPA health hazard	: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
NFPA fire hazard	: 1 - Must be preheated before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



### Full text of H-statements:

Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Repr. 2	Reproductive toxicity, Category 2
Skin Sens. 1	Sensitisation — Skin, category 1
Skin Sens. 1A	Sensitisation — Skin, category 1A
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H361	Suspected of damaging fertility or the unborn child
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

SDS Prepared by: The Redstone Group, LLC  
6077 Frantz Rd.  
Suite 206  
Dublin, OH USA 43016  
T 614-923-7472  
[www.redstone.com](http://www.redstone.com)

### LACO NA GHS SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

Black Marker

By

Sanford



Brands That Matter

Office Products Group

**MATERIAL SAFETY DATA SHEET**

**MSDS # 3000**

**Section One: Identification**

Newell Rubbermaid, Inc. (Sanford L.P.)  
2707 Butterfield Road  
Oak Brook, IL 60523 USA  
800-323-0749 or 630-481-2000

EMERGENCY MEDICAL NUMBER:  
888-766-0972

Product Name: Sharpie Fine Point Marker, Sharpie Ultra Fine Point Marker, Sharpie Extra Fine Marker, Sharpie Chisel Tip Marker, Sharpie Twin Tip Marker, Super Sharpie Marker, Super Sharpie Twin Tip Marker, Sharpie Mini Fine Point Marker, Sharpie Micro Marker, Sharpie Grip Marker, Sharpie Retractable Fine Point Marker, Sharpie Magnum Marker, Sharpie King Size Marker, Sharpie Liquid Tip Marker.

Colors: All Colors

NewellRubbermaid, Inc (Sanford L.P.) is a member of The Art and Creative Materials Institute, Inc. This product is certified by the Institute to be labeled in accordance with the voluntary chronic hazard labeling standard ASTM D-4236 and is labeled with the AP Non Toxic Seal. Products bearing the AP Approved Product Seal of The Art and Creative Materials Institute, Inc. are certified in a program of toxicological evaluation by a medical expert, subject to review by the Institute Toxicology Advisory Board, to contain no materials in sufficient quantities to be toxic or injurious to humans, or to cause acute toxicity or chronic health problems.

**Section Two: Hazard Identification**

Not Hazardous under normal use conditions. Not for use on skin. Do not ingest. Contact with eyes may cause irritation.

**Section Three: Composition**

Dyes

Pigments

Solvent Mixture: Butanol (71-36-3), Propanol (71-23-8), Diacetone Alcohol (123-42-2), Ethanol (64-17-5)

**Section Four: First Aid Measures**

Inhalation: Remove source of irritation. If symptoms persist seek medical attention

Skin Contact: Wash with soap and water. If irritation persists seek medical attention.

Eye Contact: Rinse eyes with water, if irritation persists seek medical attention.

Ingestion: If symptoms occur seek medical attention.

**Section Five: Fire Fighting Measures**

Flash Point: N/A

Extinguishing Media: As appropriate for surrounding area.

Special Fire Fighting Measures: N/A

Hazardous combustion products: N/A

**Section Six: Accidental Release Measures**

In Case of Spill or Accidental Release: Wipe up with absorbent material.

**Section Seven: Handling and Storage**

Handling: Do not shake marker.

Storage: Keep cap on marker when not in use.

**Section Eight: Exposure Controls and Personal Protection**

Eye Protection: None under normal use conditions.

Clothing: None under normal use conditions.

Respirator: None under normal use conditions.



Brands That Matter

Office Products Group

**MATERIAL SAFETY DATA SHEET**

**MSDS # 3000**

**Section Nine: Physical and Chemical Properties**

Boiling Point: N/A  
 Specific Gravity: N/A  
 Vapor Pressure: N/A  
 Solubility in Water: N/A  
 Evaporation Rate: N/A  
 Appearance/Odor: Marker/Alcohol (ink)

**Section Ten: Stability and Reactivity**

Stability: N/A  
 Conditions to Avoid: Avoid exposure to heat, flame or other sources of ignition.  
 Chemical Incompatibility: N/A  
 Hazardous Polymerization: N/A.

**Section Eleven: Toxicological Information**

See Section Two: Hazard Identification for any hazards

**Section Twelve: Ecological Information**

Not available

**Section Thirteen: Disposal Considerations**

Dispose of in accordance with all Federal, State, and Local Regulations.

**Section Fourteen: Transport Information**

DOT: Not available  
 IATA: Not available  
 IMO: Not available

**Section Fifteen: Regulatory Information**

United States: All components in this product are listed on or exempt from reporting under the Federal Toxic Substances Control Act (TSCA).

**Section Sixteen: Other Information**

HMIS Code	
Health	N/A
Flammability	N/A
Reactivity	N/A
Personal Protection	N/A

0=Minimal / 4 = Severe

NewellRubbermaid, Inc has been advised by Counsel that the OSHA Hazard Communication Standard and the Health Canada Workplace Hazardous Materials Information Standard do not apply to the Sanford Product described in this Material Safety Data Sheet. The reasons for the exemptions are contained in 29 CFR 1910.1200(b)(6)(ix) as amended Sept 14, 2009 per the Code of Federal Regulations and also Canadian Hazardous Products Act part 12 section (f) as amended June 1, 2009. The information contained in this MSDS is forwarded to you for your information, but is not meant to imply that the product is covered by nor is this MSDS meant to comply with all requirements of the hazard communication standards.



Dura Ink Marker

By

Markal

# DURA-INK® 5, 15, 25, 55, 60, 200 Black Markers

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)  
Date of issue: 04/02/2015  
Version: 1.0

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product Identifier

Trade name : DURA-INK® 5, 15, 25, 55, 60, 200 Black Markers  
Synonyms : DURA-INK® 5 Black / DURA-INK® 15 Black / DURA-INK® 25 Black / DURA-INK® 55 Black /  
DURA-INK® 60 Black / DURA-INK® 200 Black

### 1.2. Relevant Identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Marking.

### 1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.  
1201 Pratt Boulevard  
Elk Grove Village, IL. 60007-5746  
Phone: (847) 956-7600  
Fax: (847) 956-9885  
E-mail: customer\_service@laco.com



### 1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

Flam. Liq. 3 H226  
Eye Dam. 1 H318  
STOT SE 3 H335  
STOT SE 3 H336

Full text of H-phrases: see section 16

### 2.2. Label elements

#### GHS-US labelling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H226 - Flammable liquid and vapour  
H318 - Causes serious eye damage  
H335 - May cause respiratory irritation  
H336 - May cause drowsiness or dizziness

Precautionary statements (GHS-US)

: P210 - Keep away from heat, sparks, open flames. - No smoking  
P233 - Keep container tightly closed  
P242 - Use only non-sparking tools  
P243 - Take precautionary measures against static discharge  
P261 - Avoid breathing mist, vapours  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear eye protection, protective gloves  
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P310 - Immediately call a doctor  
P370+P378 - In case of fire: Use carbon dioxide (CO2), dry extinguishing powder, Water spray to extinguish  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed  
P403+P235 - Store in a well-ventilated place. Keep cool  
EN (English)

# DURA-INK® 5, 15, 25, 55, 60, 200 Black Markers

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P501 - Dispose of contents/container to an authorised waste collection point

### Bulk

P240 - Ground/bond container and receiving equipment  
P241 - Use explosion-proof electrical, lighting, ventilating equipment  
P405 - Store locked up

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product Identifier	% (w/w)	GHS-US classification
1-Methoxy-2-propanol	(CAS No) 107-98-2	25 - 50	Flam. Liq. 3, H225 STOT SE 3, H336
propan-1-ol	(CAS No) 71-23-8	25 - 50	Flam. Liq. 2, H225 Eye Dam. 1, H318 STOT SE 3, H335

Full text of H-phrases: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
First-aid measures after ingestion	: Do NOT induce vomiting unless directed to do so by medical personnel. Call a POISON CENTER or doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	: May cause drowsiness or dizziness. May cause respiratory irritation.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: Like any product not designed to be ingested, this product may cause stomach distress if ingested in large quantities.

### 4.3. Indication of any immediate medical attention and special treatment needed

All treatments should be based on observed signs and symptoms of distress in the patient.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	: Carbon dioxide. Dry powder. Water spray.
Unsuitable extinguishing media	: None known.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard	: Flammable liquid and vapour.
Explosion hazard	: May form flammable/explosive vapour-air mixture.
Reactivity	: No dangerous reactions known.

### 5.3. Advice for firefighters

Firefighting instructions	: Exercise caution when fighting any chemical fire. In case of fire: stop leak if safe to do so. Do not allow run-off from fire fighting to enter drains or water courses.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/ flame resistant/retardant clothing.

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### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking. Avoid all eye and skin contact and do not breathe vapour and mist.

##### 6.1.1. For non-emergency personnel

Protective equipment : Chemical goggles or safety glasses. Clothing impervious to chemical penetration. Wear suitable gloves resistant to chemical penetration. In case of inadequate ventilation wear respiratory protection.

Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

Protective equipment : Wear suitable protective clothing and gloves. Chemical goggles or safety glasses. Where excessive vapour, mist, or dust may result, use approved respiratory protection equipment.

Emergency procedures : Ventilate area. Stop leak if safe to do so.

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

For containment : Absorb and/or contain spill with inert material, then place in suitable container.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Take up in non-combustible absorbent material and shove into container for disposal. This material and its container must be disposed of in a safe way, and as per local legislation.

#### 6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapours are flammable.

Precautions for safe handling : No open flames. No smoking. Use only non-sparking tools. Avoid breathing mist/vapours/spray. Use only outdoors or in a well-ventilated area. Take precautionary measures against static discharge.

Hygiene measures : Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

#### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.

Storage conditions : Keep in fireproof place. Keep container tightly closed. Store in a dry, cool and well-ventilated place.

Incompatible products : Strong oxidizers.

Incompatible materials : Heat sources. Sources of ignition.

Prohibitions on mixed storage : Keep away from incompatible materials.

#### 7.3. Specific end use(s)

Marking.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

-Methoxy-2-propanol (107-98-2)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	369 mg/m <sup>3</sup>
ACGIH	ACGIH TWA (ppm)	50 ppm
ACGIH	ACGIH STEL (mg/m <sup>3</sup> )	553 mg/m <sup>3</sup>
ACGIH	ACGIH STEL (ppm)	100 ppm
ACGIH	Remark (ACGIH)	Eye irr; CNS impair; A4
OSHA	Not applicable	
Canada (Quebec)	VECD (mg/m <sup>3</sup> )	553 mg/m <sup>3</sup>
Canada (Quebec)	VECD (ppm)	150 ppm

# DURA-INK® 5, 15, 25, 55, 60, 200 Black Markers

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<b>-Methoxy-2-propanol (107-98-2)</b>		
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	369 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (ppm)	100 ppm
<b>propan-1-ol (71-23-8)</b>		
ACGIH	ACGIH TWA (ppm)	100 ppm
ACGIH	Remark (ACGIH)	Eye & URT irr
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	500 mg/m <sup>3</sup>
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
Canada (Quebec)	VECD (mg/m <sup>3</sup> )	615 mg/m <sup>3</sup>
Canada (Quebec)	VECD (ppm)	250 ppm
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	492 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (ppm)	200 ppm
Canada (Quebec)	Notations and remarks	(Peau)

### 8.2. Exposure controls

Appropriate engineering controls	: Avoid creating mist or spray. Avoid splashing. Eyewash stations. Provide local exhaust ventilation of closed transfer systems to minimize exposures.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear suitable gloves resistant to chemical penetration. Impermeable protective nitrile gloves.
Eye protection	: In case of splashing or aerosol production: protective goggles. Chemical goggles or safety glasses.
Skin and body protection	: Wear suitable protective clothing. Impervious clothing.
Respiratory protection	: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Use an approved respirator equipped with oil/mist cartridges.
Other information	: Do not eat, drink or smoke when using this product.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Solid marker containing liquid colored paint.
Colour	: Black.
Odour	: No data available
Odour threshold	: No data available
pH	: 5.7 @ 20 °C
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 96 °C
Flash point	: 23 °C
Auto-ignition temperature	: 287 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: 14 mm Hg @ 20 °C
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.9 g/cm <sup>3</sup> @ 20 °C
Solubility	: Miscible with water.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 5 mPa.s @ 20 °C
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 1.7 vol % 13.5 g/m <sup>3</sup>

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### 9.2. Other information

VOC content : 82 %

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known.

### 10.2. Chemical stability

Highly flammable liquid and vapour. May form flammable/explosive vapour-air mixture. Flammable liquid and vapour.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Avoid excessive heat or cold. Direct sunlight. Heat. Keep away from sources of ignition. Open flame. Overheating. Sparks.

### 10.5. Incompatible materials

Strong oxidizers.

### 10.6. Hazardous decomposition products

May release flammable gases. Carbon oxides (CO, CO<sub>2</sub>).

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

1-Methoxy-2-propanol (107-98-2)	
LD50 oral rat	4016 mg/kg bodyweight
LD50 dermal rat	> 2000 mg/kg bodyweight
LC50 inhalation rat (ppm)	> 7000 ppm 6 hr
ATE CLP (oral)	4016.000 mg/kg bodyweight

propan-1-ol (71-23-8)	
LD50 oral rat	5400 mg/kg
LD50 dermal rabbit	4032 mg/kg
LC50 inhalation rat (mg/l)	> 33.8 mg/l/4h
ATE CLP (oral)	5400.000 mg/kg bodyweight
ATE CLP (dermal)	4032.000 mg/kg bodyweight

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : May cause respiratory irritation. May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

### Potential adverse human health effects and symptoms

Symptoms/injuries after Inhalation : May cause drowsiness or dizziness. May cause respiratory irritation.

Symptoms/injuries after eye contact : Causes serious eye damage.

Symptoms/injuries after Ingestion : Like any product not designed to be ingested, this product may cause stomach distress if ingested in large quantities.

Likely routes of exposure : Inhalation;Skin and eye contact

## SECTION 12: Ecological information

### 12.1 Toxicity

1-Methoxy-2-propanol (107-98-2)	
LC50 fish 1	20800 mg/l
EC50 Daphnia 1	23300 mg/l
ErC50 (algae)	> 1000 mg/l

# DURA-INK® 5, 15, 25, 55, 60, 200 Black Markers

## Safety Data Sheet

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according to Canadian Hazardous Products Regulations (HPR)

### propan-1-ol (71-23-8)

LC50 fish 1	4555 mg/l 96 h
EC50 Daphnia 1	1000 mg/l 48 h

### 12.2. Persistence and degradability

#### DURA-INK® 5, 15, 25, 55, 60, 200 Black Markers

Persistence and degradability May cause long-term adverse effects in the environment.

#### 1-Methoxy-2-propanol (107-98-2)

Persistence and degradability Readily biodegradable.  
Biodegradation 96 % 28 d

### propan-1-ol (71-23-8)

Persistence and degradability Readily biodegradable.  
Biodegradation 75 % 20 d

### 12.3. Bioaccumulative potential

#### 1-Methoxy-2-propanol (107-98-2)

Bioaccumulative potential Not expected to bioaccumulate.

#### propan-1-ol (71-23-8)

BCF fish 1 0.88  
Log Pow 0.2

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.  
Additional information : Handle empty containers with care because residual vapours are flammable.  
Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

In accordance with DOT and TDG  
Not considered a dangerous good for transport regulations  
Proper Shipping Name (ADR) : Not applicable

### Transport by sea

No additional information available

### Air transport

No additional information available

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### 1-Methoxy-2-propanol (107-98-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### propan-1-ol (71-23-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. International regulations

#### CANADA

#### 1-Methoxy-2-propanol (107-98-2)

Listed on the Canadian DSL (Domestic Substances List) inventory.

#### propan-1-ol (71-23-8)

Listed on the Canadian DSL (Domestic Substances List) inventory.

### EU-Regulations

#### 1-Methoxy-2-propanol (107-98-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

# DURA-INK® 5, 15, 25, 55, 60, 200 Black Markers

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

### propan-1-ol (71-23-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### National regulations

#### DURA-INK® 5, 15, 25, 55, 60, 200 Black Markers

All ingredients are listed in the Toxic Substances Control Act (TSCA).

All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).

### 15.3. US State regulations

#### 1-Methoxy-2-propanol (107-98-2)

U.S. - Minnesota - Hazardous Substance List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - New York - Right to Know List of Hazardous Chemicals

#### propan-1-ol (71-23-8)

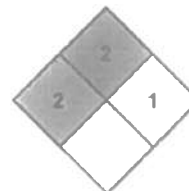
U.S. - Minnesota - Hazardous Substance List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - New York - Right to Know List of Hazardous Chemicals

## SECTION 16: Other information

Indication of changes	: Original Document.
Data sources	: ACGIH 2000. ESIS (European chemical Substances Information System; accessed at <a href="http://esis.jrc.ec.europa.eu/index.php?PGM=clg">http://esis.jrc.ec.europa.eu/index.php?PGM=clg</a> . OSHA 29CFR 1910.1200 Hazard Communication Standard. European Chemicals Agency (ECHA) Registered Substances list. Accessed at <a href="http://echa.europa.eu">http://echa.europa.eu</a> . Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition. REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. TSCA Chemical Substance Inventory. Accessed at <a href="http://www.epa.gov/oppt/existing_chemicals/pubs/tscainventory/howto.htm">http://www.epa.gov/oppt/existing_chemicals/pubs/tscainventory/howto.htm</a> .
Abbreviations and acronyms	: ACGIH (American Conference of Government Industrial Hygienists). ATE: Acute Toxicity Estimate. CAS (Chemical Abstracts Service) number. CLP: Classification, Labelling, Packaging. EC50: Environmental Concentration associated with a response by 50% of the test population. GHS: Globally Harmonized System (of Classification and Labeling of Chemicals). LD50: Lethal Dose for 50% of the test population. OSHA: Occupational Safety & Health Administration. STEL: Short Term Exposure Limits. TSCA: Toxic Substances Control Act. TWA: Time Weight Average.
Other information	: None.
NFPA health hazard	: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
NFPA fire hazard	: 2 - Must be moderately heated or exposed to relatively high temperature before ignition can occur.
NFPA reactivity	: 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.
Full text of H-phrases:	
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Flam. Liq. 2	Flammable liquids, Category 2





# DURA-INK® 5, 15, 25, 55, 60, 200 Black Markers

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canadian Hazardous Products Regulations (HPR)

Flam. Liq. 3	Flammable liquids, Category 3
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour
H226	Flammable liquid and vapour
H318	Causes serious eye damage
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness

SDS Prepared by: The Redstone Group, LLC

6077 Frantz Rd.  
Suite 206  
Dublin, OH USA 43016  
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[www.redstoneinc.com](http://www.redstoneinc.com)

LACO NA GHS SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

Mean Streak

By

Sanford

**Section One: Identification**

Newell Rubbermaid, Inc. (Sanford L.P.)  
2707 Butterfield Road  
Oak Brook, IL 60523 USA  
800-323-0749 or 630-481-2000

EMERGENCY MEDICAL NUMBER:

888-786-0972

Product Name: Sharpie Mean Streak  
Colors: Black, Red, Yellow, White

**Section Two: Hazard Identification**

Not Hazardous under normal use conditions. Not for use on skin. Do not ingest. Contact with eyes may cause irritation

**Section Three: Composition**

Ethylene glycol monobutyl ether (111-76-2), pigments, resins, gelling agents

**Section Four: First Aid Measures**

Inhalation: Remove source of irritation. If symptoms persist seek medical attention  
Skin Contact: Wash with soap and water. If irritation persists seek medical attention.  
Eye Contact: Rinse eyes with water, if irritation persists seek medical attention.  
Ingestion: If symptoms occur seek medical attention.

**Section Five: Fire Fighting Measures**

Flash Point: None  
Flammability Limits (% by volume): Lower: Upper:  
Extinguishing Media: As appropriate for surrounding area.  
Special Fire Fighting Measures: None  
Unusual Fire and Explosion Hazards: None

**Section Six: Accidental Release Measures**

In Case of Spill or Accidental Release: Normal clean up.

**Section Seven: Handling and Storage**

Handling: No special handling requirements.  
Storage: Keep cap on marker when not in use.

**Section Eight: Exposure Controls and Personal Protection**

Eye Protection: None under normal use conditions.  
Clothing: None under normal use conditions.  
Respirator: None under normal use conditions.  
Ventilation: None under normal use conditions.

**Section Nine: Physical and Chemical Properties**

For ink unless otherwise specified:

### MATERIAL SAFETY DATA SHEET

MSDS # 85000

Boiling Point: Not determined  
Specific Gravity: Not determined  
Vapor Pressure: Not determined  
Solubility in Water: Not determined  
Evaporation Rate: Not determined  
Appearance/Odor: Colored crayon; essentially odorless

#### Section Ten: Stability and Reactivity

Stability: Stable  
Conditions to Avoid: High temperatures and fire sources  
Chemical Incompatibility: None known  
Hazardous Decomposition: None known  
Hazardous Polymerization: Will not occur

#### Section Eleven: Toxicological Information

See Section Two: Hazard Identification for any hazards

#### Section Twelve: Ecological Information

Not available

#### Section Thirteen: Disposal Considerations

Dispose in accordance with Federal, State, and Local Regulations.

#### Section Fourteen: Transport Information

Refer to Shipping Papers, if applicable.

#### Section Fifteen: Regulatory Information

TSCA: The product listed on this Material Safety Data Sheet is not listed on the Toxic Substances Control Act Inventory. All ingredients used to manufacture this product are listed on the TSCA Inventory

#### Section Sixteen: Other Information

HMIS Code	
Health	N/A
Flammability	N/A
Reactivity	N/A
Personal Protection	N/A

0=Minimal / 4 = Severe

NewellRubbermaid, Inc (Sanford L.P ) has been advised by Counsel that the OSHA Hazard Communication Standard and the Health Canada Workplace Hazardous Materials Information Standard do not apply to the product described in this Material Safety Data Sheet. The reasons for the exemptions are contained in 29 CFR 1910.1200(b)(6)(ix) as amended Sept 14, 2009 per the Code of Federal Regulations and also Canadian Hazardous Products Act part 12 section (f) as amended June 1, 2009. The information contained in this MSDS is forwarded to you for your information, but is not meant to imply that the product is covered by nor is this MSDS meant to comply with all requirements of the hazard communication standards.

Cement  
By  
Quikrete

**C6: Portland Cement Based Concrete Products****SAFETY DATA SHEET**

(Complies with OSHA 29 CFR 1910.1200)

**SECTION I: PRODUCT IDENTIFICATION**

The QUIKRETE® Companies  
 One Securities Centre  
 3490 Piedmont Road, Suite 1300  
 Atlanta, GA 30305  
 Revision: Jan-16  
 SDS C6

Emergency Telephone Number  
 (770) 216-9580  
 Information Telephone Number  
 (770) 216-9580

<b>QUIKRETE® Product Name</b>	<b>Item #(s)</b>
Fast-Setting Concrete Mix	1004-50
All-Star Fast Setting Concrete Mix	1004-50
Commercial Grade FastSet™ Concrete Mix	1004-51
Post Haste	1004-65
Q-MAX Pro Concrete Mix	1004-81
All-Star 10 Minute Instant Post Mix	1005-51
FastSet™ Water-Stop Cement –Zip & Mix	1121-15
Commercial Grade FastSet™ Cement	1124-92
Hydraulic Water Stop	1126-00
Concrete Resurfacer	1131-40
Multipurpose Concrete Resurfacer	1131-45
Bonded Topping Mix	1133-04, 1018, 1017
Architectural Finish	1220-55
Quick Setting Cement	1240-00
Commercial Grade FastSet™ Repair Mortar – Zip And Mix	1241
Commercial Grade FastSet™ Repair Mortar	1241-60
Rapid Road Repair	1242-50, -51, -52, -80
Polymer Modified Structural Concrete – Extended Set	1242-85
Rapid Hardening Sand Mix	1243-50
Commercial Grade FastSet™ DOT Mix	1244-56
Commercial Grade FastSet™ DOT Deck Repair – Polymer Modified	1244-58
Commercial Grade FastSet™ DOT Mix – Extended	1244-81
Exterior use Anchoring Cement	1245-80, -81
Commercial Grade FastSet™ Non-Shrink Grout	1585-09, -20
Commercial Grade FastSet™ All-Crete	1585-59
Mix 801 FastSet™ DOT PM Overlay	NR801552/80801552

**Product Use:** Portland cement-based, rapid-setting materials for general construction or repair.

**SECTION II - HAZARD IDENTIFICATION**

**Hazard-determining components of labeling:** Silica, Portland cement

**2.1 Classification of the substance or mixture**

Carcinogen – Category 1A

Skin Corrosion – Category 1B

Skin Sensitization – Category 1B

Specific Target Organ Toxicity Repeat Exposure – Category 1

Specific Target Organ Toxicity: Single Exposure – Category 3

**2.2a Signal word DANGER!****2.2b Hazard Statements**

May cause cancer through chronic inhalation

Causes severe skin burns and serious eye damage

May cause an allergic skin reaction

Causes damage to lungs through prolonged or repeated inhalation

May cause respiratory irritation

**2.2c Pictograms****2.2d Precautionary statements**

Do not handle until all safety precautions have been read and understood.

Wear impervious gloves, such as nitrile. Wear eye protection, and protective clothing.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handling.

Use only in a well-ventilated area.

Do not breathe dust.

If swallowed: Rinse mouth. Do NOT induce vomiting.

If inhaled: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If on skin (or hair): Remove immediately all contaminated clothing and wash before re-use. Rinse skin or hair with water.

If significant skin irritation or rash occurs: get medical advice or attention.

**Immediately seek medical advice or attention if symptoms are significant or persist.**

Store in a well-ventilated place. Keep container tightly closed.  
Dispose of contents/containers in accordance with all regulations.

### 2.3 Additional Information

The Portland cement in this product can cause serious, potentially irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns. Burns from Portland cement may not cause immediate pain or discomfort. You cannot rely on pain to alert you to cement burns. Therefore precautions must be taken to prevent all contact with Portland cement. Cement burns can become worse even after contact has ended. If there is contact with this product, immediately remove all product from body and thoroughly rinse with water. If you experience or suspect a cement burn or inflammation you should immediately see a health care professional.

Skin burns and irritation may be caused by brief exposure, though often are caused by extended exposure of 15 minutes, an hour, or longer. Interaction of Portland cement with water or sweat releases a caustic solution which produces the burns or irritation. Any extended exposure should be treated as though a burn has occurred until determined otherwise.

Skin contact with Portland cement can also cause inflammation of the skin, referred to as dermatitis. Signs and symptoms of dermatitis can include itching, redness, swelling, blisters, scaling, and other changes in the normal condition of the skin. Signs and symptoms of burns include the above and whitening, yellowing, blackening, peeling or cracking of skin.

The Portland cement in this product may cause allergic contact dermatitis in sensitized individuals. This overreaction of the immune system can lead to severe inflammation. Sensitization may result from a single exposure to the low levels of Cr(VI) in Portland cement or repeated exposures over months or years. Sensitization is long lasting and, after sensitization, even very small quantities can trigger the dermatitis. Sensitization is uncommon. Individuals who experience skin problems, including seemingly minor ones, are advised to seek medical attention.

**2.3a HNOC – Hazards not otherwise classified:** Not applicable

**2.3b Unknown Acute Toxicity:** None

#### 2.3C WHMIS Classification

Class D2B – Skin/Eye Irritant

Class D2A – Chronic Toxic Effects – Carcinogen

Class E – Corrosive Material

**2.3d Label Elements According To WHMIS**

#### **Hazard Symbols**





**Signal Word**  
DANGER!

### SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

<u>Hazardous Components</u>	<u>CAS No.</u>	<u>% by Weight</u>
Sand, Silica, Quartz	14808-60-7	40-70*
Portland Cement	65997 15 1	10-30*
Calcium Sulfoaluminate	65997-16-2	10-30*
Calcium Aluminate	12042-68-1	5-10*
Calcium Sulfate	10101-41-4	1-5*
Limestone Dust	01317-65-3	1-5*

\*The concentrations ranges are provided due to batch-to-batch variability.  
None of the constituents of this material are of unknown toxicity.

### SECTION IV – FIRST AID MEASURES

#### 4.1 Description of the first-aid measures

##### General information:

**After inhalation:** Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. In case of unconsciousness, place patient stably in side position for transportation.

**After skin contact:** Wash skin with cool water and pH-neutral soap or a mild detergent. If significant skin irritation or rash occurs: get medical advice or attention.

**After eye contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**After swallowing:** Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately. Never give anything by mouth to an unconscious person.

#### 4.2 Most important symptoms/effects, acute and delayed

**Inhalation:** May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated inhalation. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.

**Skin contact:** The Portland cement in this product can cause serious, potentially irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns.

**CEMENT & CONCRETE PRODUCTS™**

Burns from Portland cement may not cause immediate pain or discomfort. You cannot rely on pain to alert you to cement burns. Therefore precautions must be taken to prevent all contact with Portland cement. Cement burns can become worse even after contact has ended. If there is contact with this product, immediately remove all product from body and thoroughly rinse with water. If you experience or suspect a cement burn or inflammation you should immediately see a health care professional.

Skin burns and irritation may be caused by brief exposure, though often are caused by extended exposure of 15 minutes, an hour, or longer. Interaction of Portland cement with water or sweat releases a caustic solution which produces the burns or irritation. Any extended exposure should be treated as though a burn has occurred until determined otherwise.

Skin contact with Portland cement can also cause inflammation of the skin, referred to as dermatitis. Signs and symptoms of dermatitis can include itching, redness, swelling, blisters, scaling, and other changes in the normal condition of the skin. Signs and symptoms of burns include the above and whitening, yellowing, blackening, peeling or cracking of skin.

The Portland cement in this product may cause allergic contact dermatitis in sensitized individuals. This overreaction of the immune system can lead to severe inflammation. Sensitization may result from a single exposure to the low levels of Cr(VI) in Portland cement or repeated exposures over months or years. Sensitization is long lasting and, after sensitization, even very small quantities can trigger the dermatitis. Sensitization is uncommon. Individuals who experience skin problems, including seemingly minor ones, are advised to seek medical attention.

**Eye Contact:** Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

**Ingestion:** May be harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

**4.3 Indication of immediate medical attention and special treatment needed:**  
Immediately seek medical advice or attention if symptoms are significant or persist.

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**SECTION V - FIRE FIGHTING MEASURES**

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**5.1 Flammability of the Product:** Non-flammable and non-combustible

**5.2 Suitable extinguishing agents:** Treat for surrounding material

**5.3 Special hazards arising from the substance or mixture:** None

**5.3a Products of Combustion:** None

**5.3b Explosion Hazards in Presence of Various Substances:** Non-explosive in presence of shocks

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**SECTION VI – ACCIDENTAL RELEASE MEASURES**

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**6.1 Personal precautions, protective equipment and emergency procedures:** Wear personal protective equipment (See section VIII). Keep unprotected persons away.

**6.2 Methods and material for containment and cleaning up:**

Do not allow to enter sewers/ surface or ground water. Dispose of unwanted materials and containers properly in accordance with all regulations.

---

**SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE**

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**7.1 Handling**

**Precautions for safe handling:** Ensure good ventilation/exhaustion at the workplace. DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended. Wear appropriate PPE (See section 8). Do not mix with other chemical products, except as indicated by the manufacturer. Do not get in eyes, on skin or clothing. Good housekeeping is important to prevent accumulation of dust.

**7.2 Storage**

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** Keep out of the reach of children. Keep container tightly closed and prevent exposure to humidity. Do not allow water to contact the product until time of use to preserve product utility.

---

**SECTION VIII – EXPOSURE CONTROL MEASURES / PERSONAL PROTECTION**

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**8.1 Components with limit values that require monitoring at the workplace:**

Hazardous Components	CAS No.	PEL (OSHA) mg/M <sup>3</sup>	TLV (ACGIH) mg/M <sup>3</sup>
Silica Sand, crystalline	14808-60-7	0.1	0.025 (resp)
Portland Cement	65997-15-1	5 (resp) 15 (total)	10 (resp)
Calcium Sulfoaluminate	65997-16-2	15	10
Calcium Aluminate	12042-68-1	5 (resp) 15 (total)	1 (resp)
Calcium Sulfate	10101-41-4	5 (resp) 15 (total)	10 (resp)
Limestone Dust	01317-65-3	5 (resp) 15 (total)	10 (resp)

**8.2 Exposure Controls**

Use ventilation adequate to keep exposures below recommended exposure limits.

**8.3 General protective and hygienic measures**

**CEMENT & CONCRETE PRODUCTS™**

Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

**8.3a Personal protective equipment****Protection of hands:**

Wear gloves of adequate length to offer appropriate skin protection from splashes. Nitrile, Butyl and PVC gloves have been found to offer adequate protection for incidental contact. Precautions must be observed because burns occur with little warning -- little heat is sensed.

**Eye protection:**

Wear approved eye protection properly fitted dust- or splash-proof chemical safety glasses.

**Respiratory protection:**

A NIOSH-approved dust mask or filtering face piece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional, following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).

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**SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS**

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**General Information**

<b>Appearance</b>	Form: Granular Solid Color: Gray to gray-brown colored Odor: None
<b>pH-value at 20°C (68 °F):</b>	13 (10%)
<b>Boiling point/Boiling range:</b>	Not applicable
<b>Flash point:</b>	Not applicable
<b>Auto igniting:</b>	Product is not self-igniting
<b>Vapor pressure at 21°C (70°F)</b>	Not available
<b>Density at 25°C (77 °F):</b>	2.6 to 3.15

**Solubility in / Miscibility with**

<b>Water:</b>	Insoluble
<b>VOC content:</b>	0 g/L VOC

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**SECTION X – STABILITY AND REACTIVITY**

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**10.1 Reactivity**

No dangerous reaction known under conditions of normal use.

**10.2 Chemical stability**

Stable under normal storage conditions. Keep in dry storage.

**CEMENT & CONCRETE PRODUCTS™****10.3 Possibility of hazardous reaction**

No dangerous reaction known under conditions of normal use.

**10.4 Thermal decomposition / conditions to be avoided**

No decomposition if used according to specifications.

**10.5 Incompatible materials**

Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, or oxygen difluoride may cause fires

**10.6 Hazardous Decomposition or By-products**

Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas – silicon tetrafluoride.

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**SECTION XI – TOXICOLOGICAL INFORMATION**

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**11.1 Exposure Routes:** Skin contact, skin adsorption, eye contact, inhalation, or ingestion.

**11.2 Symptoms related to physical/chemical/toxicological characteristics:**

**Inhalation:** May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated exposure. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.

**Skin contact:** Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact. Product becomes extremely alkaline when exposed to moisture, and can cause alkali burns and affect the mucous membranes.

**Eye Contact:** Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

**Ingestion:** Harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

**11.3 Delayed, immediate and chronic effects of short-term and long-term exposure****Short Term**

**Skin Corrosion/Irritation:** Causes severe skin burns.

**Serious Eye Damage/Irritation:** Causes severe eye damage.

**Respiratory Sensitization:** Not available

**Skin Sensitization:** May cause an allergic skin reaction.

**Specific Target Organ Toxicity-Single Exposure:** (Category 3) may cause respiratory irritation.

**Aspiration Hazard:** Not available

**Long Term**

**Carcinogenicity:** May cause cancer through chronic inhalation.

**Germ Cell Mutagenicity:** Not available

**Reproductive Toxicity:** Not available

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Specific Target Organ Toxicity- Repeated Exposure: (Category 1) Causes damage to lungs through prolonged/repeated exposure  
Synergistic/Antagonistic Effects: Not available.

---

**SECTION XII – ECOLOGICAL INFORMATION**

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**12.1 Ecotoxicity**

May cause long-term adverse effects to the aquatic environment. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or un-neutralized

**12.2 Persistence and degradability**

No further relevant information available.

**12.3 Bioaccumulative potential:**

No further relevant information available.

**12.4 Mobility in soil**

No further relevant information available.

**12.5 Other Adverse Effects**

No further relevant information available.

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**SECTION XIII – DISPOSAL CONSIDERATIONS**

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**13.1 Waste Disposal Method**

The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under the authority of the RCRA (40CFR 261) or CERCLA (40CFR 117&302). Disposal must be made in accordance with local, state and federal regulations.

**13.2 Other disposal considerations****Uncleaned packaging**

**Recommendation:** Disposal must be made in accordance with local, state and federal regulations.

**Recommended cleansing agent:** Water, if necessary with cleansing agents.

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**SECTION XIV – TRANSPORT INFORMATION**

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	<b>DOT (U.S.)</b>	<b>TDG (Canada)</b>
<b>UN-Number</b>	Not Regulated	Not Regulated
<b>UN proper shipping name</b>	Not Regulated	Not Regulated
<b>Transport Hazard Class(es)</b>	Not Regulated	Not Regulated
<b>Packing Group (if applicable)</b>	Not Regulated	Not Regulated

**14.1 Environmental hazards:**

Not Available

**14.2 Transport in bulk according to Annex II of Marpol 73/78 and the IBC Code**

Not available

**14.3 Special precautions for user**

Do not handle until all safety precautions have been read and understood.

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**SECTION XV – OTHER REGULATORY INFORMATION**

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**15.1 Safety, Health and Environmental Regulations/Legislations specific for the chemical****Canada**

**WHMIS Classification:** Considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations and subject to the requirements of Health Canada's Workplace Hazardous Material Information (WHMIS). This document complies with the WHMIS requirements of the Hazardous Products Act (HPA) and the CPR.

**15.2 US Federal Information****SARA 302/311/312/313 Components**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302, 311, 312 or 313.

**RCRA:** Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

**CERCLA:** Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.

**Emergency Planning and Community Right to Know Act (SARA Title III):** Crystalline silica (quartz) is not an extremely hazardous substance under Section 302 and is not a toxic chemical subject to the requirements of Section 313.

**FDA:** Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3)(xxvi).

**NTP:** Respirable crystalline silica, primarily quartz dusts occurring in industrial and occupational settings, is classified as Known to be a Human Carcinogen.

**OSHA Carcinogen:** Crystalline silica (quartz) is not listed.

**15.3 State Right to Know Laws**

**CEMENT & CONCRETE PRODUCTS™**

**California Prop. 65 Components**

**WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

**California Inhalation Reference Exposure Level (REL):** California established a chronic REL of 3 µg for silica (crystalline, respirable). A chronic REL is an airborne level of a substance at or below which no adverse health effects are anticipated in individuals indefinitely exposed to the substance at that level.

**Massachusetts Toxic Use Reduction Act:** Silica, crystalline (respirable size, <10 microns) is "toxic" for purposes of the Massachusetts Toxic Use Reduction Act.

**15.4 Global Inventories**

**DSL** All components of this product are on the Canadian DSL list.

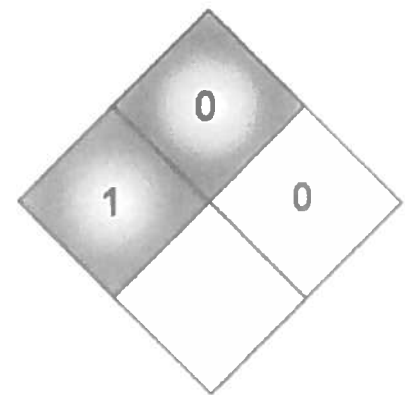
**TSCA No.:** Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7. All constituents are listed in the TSCA inventory.

**15.5 NFPA Ratings**

### NFPA Rating Explanation Guide

<p><b>HEALTH HAZARD</b></p> <p>4 = Can be lethal              3 = Can cause serious or permanent injury              2 = Can cause temporary incapacitation or residual injury              1 = Can cause significant irritation              0 = No hazard</p>	<p><b>FLAMMABILITY HAZARD</b></p> <p>4 = Will vaporize and readily burn at normal temperatures              3 = Can be ignited under almost all ambient temperatures              2 = Must be heated or high ambient temperature to burn              1 = Must be preheated before ignition can occur              0 = Will not burn</p>
<p>ALK = Alkaline              ACC = Acidic              COR = Corrosive              OX = Oxidizing              R = Radioactive              W = Reacts violently or explosively with water              WOX = Reacts violently or explosively with water and oxidizing</p> <p><b>SPECIAL HAZARD</b></p>	<p>4 = May explode at normal temperatures and pressures              3 = May explode at high temperature or shock              2 = Violent chemical change at high temperature or pressures              1 = Normally stable. High temperatures make unstable              0 = Stable</p> <p><b>INSTABILITY HAZARD</b></p>

This chart for reference only. For complete specifications consult the NFPA 704 Standard



**SECTION XVI – OTHER INFORMATION**

Last Updated: January 4, 2016



**NOTE:** The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products.

Prepared by

The QUIKRETE® Companies  
Phone (800) 282-5828  
[www.QUIKRETE.com](http://www.QUIKRETE.com)

**End of SDS**

Duct Tape

By

3M



## Article Information Sheet

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This Article Information Sheet is provided as a courtesy in response to a customer request. A Safety Data Sheet (SDS) has not been prepared for these product(s) because they are articles. Articles are not subject to the Occupational Safety and Health Administration's Hazard Communication Standard (29 CFR 1910.1200(b)(6)(v)). As defined in this standard: "Article" means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical or health risk to employees.

<b>Document Group:</b>	26-2650-5	<b>Version Number:</b>	2.00
<b>Issue Date:</b>	12/11/14	<b>Supersedes Date:</b>	Initial Issue

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Tapes: 3900, 3939, 6969, 2929, 5959, 8979, 8979N, and 390

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Bundling, Reinforcing, & Sealing, Industrial use

#### 1.3. Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	Industrial Adhesives and Tapes Division
<b>ADDRESS:</b>	3M Center, St. Paul, MN 55144-1000, USA
<b>Telephone:</b>	1-888-3M HELPS (1-888-364-3577)

#### 1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

3M™ Multi-Purpose Duct Tape 3900  
3M™ Heavy Duty Duct Tape 3939  
3M™ Extra Heavy Duty Duct Tape 6969  
3M™ General Use Duct Tape 2929  
3M™ Outdoor Masking and Stucco Tape 5959  
3M™ Performance Plus Duct Tape 8979 & 8979N  
Scotch® Polyethylene Coated Cloth Tape 390

### SECTION 2: Hazard identification

This product is exempt from hazard classification according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Polyethylene Film over Cloth Scrim Backing	None	51 - 99
Rubber Adhesive	Trade Secret*	1 - 49

\*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

**Inhalation:**

No need for first aid is anticipated.

**Skin Contact:**

No need for first aid is anticipated.

**Eye Contact:**

No need for first aid is anticipated.

**If Swallowed:**

No need for first aid is anticipated.

### SECTION 5: Fire-fighting measures

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Not applicable.

#### 6.2. Environmental precautions

Not applicable.

#### 6.3. Methods and material for containment and cleaning up

Not applicable.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions.

#### 7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

### SECTION 8: Exposure controls/personal protection

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical

under normal use conditions. No engineering controls or personal protective equipment (PPE) are necessary.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

General Physical Form:	Solid
Odor, Color, Grade:	various colored duct tape
Odor threshold	<i>Not Applicable</i>
pH	<i>Not Applicable</i>
Melting point	<i>Not Applicable</i>
Boiling Point	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Evaporation rate	<i>Not Applicable</i>
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Vapor Density	<i>Not Applicable</i>
Density	<i>Not Applicable</i>
Specific Gravity	<i>Not Applicable</i>
Solubility in Water	Nil
Solubility- non-water	<i>Not Applicable</i>
Partition coefficient: n-octanol/ water	<i>Not Applicable</i>
Autoignition temperature	<i>Not Applicable</i>
Decomposition temperature	<i>Not Applicable</i>
Viscosity	<i>Not Applicable</i>
Volatile Organic Compounds	<i>Not Applicable</i>
Percent volatile	<i>Not Applicable</i>
VOC Less H2O & Exempt Solvents	<i>Not Applicable</i>

## SECTION 10: Stability and reactivity

This material is considered to be non reactive under normal use conditions.

## SECTION 11: Toxicological information

### Inhalation:

No health effects are expected

### Skin Contact:

No health effects are expected

### Eye Contact:

No health effects are expected

### Ingestion:

No health effects are expected

### Additional Information:

This product, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.

## SECTION 12: Ecological information

This article is expected to present a low environmental risk either because use and disposal are unlikely to result in a significant release of components to the environment or because those components that may be released are expected to have insignificant environmental impact.

## SECTION 13: Disposal considerations

Dispose of contents/container in accordance with the local/regional/national/international regulations.

## SECTION 14: Transport Information

Not regulated per U.S. DOT, IATA or IMO.

*These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M transportation classifications are based on product formulation, packaging, 3M policies and 3M understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling, or marking requirements. The original 3M package is certified for U.S. ground shipment only. If you are shipping by air or ocean, the package may not meet applicable regulatory requirements.*

## SECTION 15: Regulatory information

### Chemical Inventories

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory requirements.

For additional regulatory information on this product, refer to [www.3M.com/regs](http://www.3M.com/regs).

## SECTION 16: Other information

### NFPA Hazard Classification

Health: 0 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Document Group:	26-2650-5	Version Number:	2.00
Issue Date:	12/11/14	Supersedes Date:	Initial Issue

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○ Thermoset Polyester (SMC)

By

Haysite Reinforced Plastics, LLC





# Haysite Reinforced Plastics, LLC

A Dunes Point Capital Company

5599 New Perry Highway

Erie, Pennsylvania 16509

Phone: (814) 868-3691

Fax: (814) 864-7803



## Safety Data Sheet

Section 1 - Identification			
Product Identifier	Telephone Number for Information & Preparer's Number		
Glass Reinforced Thermoset Polyester	814-868-3691 x236		
Sheet Molding Compound (SMC)	Emergency Telephone Number		
Manufacturer's Name	814-868-3691 x236		
Haysite Reinforced Plastics, LLC			
Address (Number, Street, City, State & Zip Code)	Date Prepared	Revision Date	
	5599 New Perry Highway	4/22/2015	
Erie, PA 16509			
Recommended Use	Restrictions on use		
Raw material*	Not established.		
<small>*The "Recommended Use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied.</small>			

Section 2 - Hazard(s) Identification
<b>Classification:</b> No need for classification according to GHS criteria for this product.
<b>Label elements:</b> This product does not require a hazard warning label in accordance with GHS criteria.
<b>Hazards not otherwise classified:</b> No specific dangers known if the storage and handling procedures are followed.
<b>Emergency overview:</b> No particular hazards know.

Section 3 - Composition / Information on Ingredients					
Hazardous Components - Specific Chemical Identity - Common Name(s)	CAS Number	% Composition	OSHA PEL	ACGIH TLV	Other Limits Recommended
Styrene	100-42-5	< 15	100 ppm	20 ppm	200 ppm ceiling; 600 ppm 5-minute maximum peak
Vinyl Toluene	25013-15-4	< 15	100 ppm	50 ppm	100 ppm STEL
Organic Peroxide		< 2	Not available	Not available	Not applicable

Section 4 - First-Aid Measures	
Skin	If there is skin irritation, wash skin with soap and water.
Eyes	Vapors may cause itching, irritation or redness. If compound gets into eyes, flush eye(s) with running water or saline for 15 minutes. Ensure adequate flushing by separating eyelids with fingers. If irritation persists or adverse symptoms develop, seek medical attention.
Ingestion	Ingestion is highly unlikely. If large is swallowed, seek medical attention.
Inhalation	Remove to fresh air. If coughing, breathing becomes labored, irritation develops or other symptoms develop, seek medical attention.

Section 5 - Fire-Fighting Measures	
Extinguishing Media	Water, Carbon Dioxide, Dry Chemical, Chemical Foam.
Special Fire Fighting Procedures	Fire-fighters should wear proper PPE. Use self-contained breathing apparatus in confined spaces.
Unusual Fire and Explosion Hazards	None.
Further Information	Contaminated extinguishing water should be disposed of in accordance with official regulations.

Section 6 - Accidental Release Measures	
Steps to be taken in event of a spill or release	Sweep up and place in disposal container. Wear appropriate PPE.

Section 7 - Handling and Storage	
Handling	Wear appropriate PPE. Avoid contact with eyes and skin. Avoid breathing vapors. Take precautionary measures to prevent static discharges.
Storage	Store between 0 - 30 °C. These compounds are packaged in special wrap, impermeable to styrene. Do not puncture bag. Close bag tightly after partial use.
Other precautions	Do not allow to come into contact with open flame. Do not allow to come in contact with surface water or ground water.

Section 8 - Exposure Controls / Personal Protection				
		OSHA PEL	ACGIH TLV	Other Recommended Limits
Exposure Controls	Styrene	TWA: 100 ppm Ceiling: 200 ppm	TWA: 20 ppm	IDLH: 700 ppm
	Vinyl Toluene	TWA: 100 ppm	TWA: 50 ppm	IDLH: 400 ppm
Engineering Controls	Engineering controls are not usually necessary if good hygiene practices are followed. Follow guidelines set forth in Section 7 - Handling and Storage.			
General Safety and Hygiene	No eating, drinking, smoking or tobacco use while using compound. Handle in accordance with good industrial hygiene and safety practices.			
Personal Protective Equipment:				
Respiratory Protection	Wear respirator in case of vapor/aerosol release.			
Eye Protection	Safety glasses with side-shields.			
Skin Protection	Skin protection must be chosen depending on activity and possible exposure. E.g. apron, long sleeves, gloves, closed-toe leather boots, chemical-protectant suit.			

Section 9 - Physical and Chemical Properties			
Appearance and Odor	A fibrous, slightly tacky solid of various colors. Characteristic odor of styrene. Possible slight sweet odor.		
Odor Threshold	Not established.	Vapor Pressure (mm HG)	Not established.
pH	Not established.	Vapor Density (AIR = 1)	Not established.
Melting Point / Freezing Point	Not established.	Specific Gravity (H <sub>2</sub> O = 1)	1.8
Initial Boiling Point and Range	Not established.	Solubility in Water	Not soluble.
Flash Point	Not established.	Partition Coefficient: n-octanol/water	Not established.
Evaporation Rate	Not established.	Auto-ignition Temperature	Not established.
Flammability (solid)	Not established.	Decomposition Temperature	Not established.
Upper/Lower Explosive Limits	Not established.	Viscosity	Not applicable.

Section 10 - Stability and Reactivity	
Reactivity	No reactivity if stored and handled as prescribed/indicated.
Chemical Stability	This product is stable if stored and handled as prescribed/indicated.
Possibility of Hazardous Reactions	No hazardous reactions when stored and handled as prescribed/indicated. The product is chemically stable.
Conditions to avoid	Material as supplied is not explosive. Ground all equipment to avoid static discharge. See Section 7.
Incompatible Materials	Not established.
Hazardous Decomposition Products	None when stored and handled as instructed and used as intended.

Section 11 - Toxicological Information	
Exposure Routes	Routes of entry for solids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.
Acute Toxicity	Virtually non-toxic after single ingestion. Oral: Type of value: LD50; Species: Rat; Value: > 5,000 mg/kg Dermal: Type of value: LD50; Value: > 5,000 mg/kg Inhalation: Type of value: LD50; Species: Rat; Value: 11.8 mg/L; Exposure time: 4 hrs, vapor May cause skin irritation. May cause eye irritation. Does not cause skin sensitization.
Chronic Toxicity	Genetic toxicity: Assessment of mutagenicity: No data available concerning mutagenetic effects. Carcinogenicity: Assessment of carcinogenicity: No data available concerning carcinogenic effects. Reproductive toxicity: Assessment of reproductive toxicity: No data available concerning damage to reproductive organs.
Note: Based on the available information, there is no specific target organ toxicity to be expected after a single exposure. The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.	



Hand Cleaner

By

Go Jo

# SAFETY DATA SHEET



## GOJO® ORIGINAL FORMULA™ Hand Cleaner

Version 1.0      Revision Date: 02/12/2015      MSDS Number: 57113-00001      Date of last issue: -  
Date of first issue: 02/12/2015

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### SECTION 1. IDENTIFICATION

Product name : GOJO® ORIGINAL FORMULA™ Hand Cleaner

#### Manufacturer or supplier's details

Company name of supplier : GOJO Industries, Inc.

Address : One GOJO Plaza, Suite 500  
Akron OH 44311

Telephone : 1 (330) 255-6000

Emergency telephone : 1-800-424-9300 CHEMTREC

#### Recommended use of the chemical and restrictions on use

Recommended use : Skin-care

Restrictions on use : This is a personal care or cosmetic product that is safe for consumers and other users under normal and reasonably foreseeable use. Cosmetics and consumer products, specifically defined by regulations around the world, are exempt from the requirement of an SDS for the consumer. While this material is not considered hazardous, this SDS contains valuable information critical to the safe handling and proper use of the product for industrial workplace conditions as well as unusual and unintended exposures such as large spills. This SDS should be retained and available for employees and other users of this product. For specific intended-use guidance, please refer to the information provided on the package or instruction sheet.


---

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS Classification

Serious eye damage : Category 1

#### GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H318 Causes serious eye damage.

Precautionary Statements : **Prevention:**  
P280 Wear eye protection/ face protection.  
**Response:**

## SAFETY DATA SHEET



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P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

**Other hazards**

Repeated exposure may cause skin dryness or cracking.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Mixture

**Hazardous ingredients**

Chemical Name	CAS-No.	Concentration (%)
Distillates (petroleum), hydrotreated light	64742-47-8	>= 30 - < 50
White mineral oil (petroleum)	8042-47-5	>= 10 - < 20
Ethoxylated branched C11-14, C13-rich alcohols	78330-21-9	>= 1 - < 5
Propylene glycol	57-55-6	>= 1 - < 5
Petrolatum	8009-03-8	>= 1 - < 5
Sodium Hydroxymethylglycinate	70161-44-3	>= 0.1 - < 1

**SECTION 4. FIRST AID MEASURES**

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.  
Get medical attention if symptoms occur.
- In case of skin contact : Wash with water and soap as a precaution.  
Get medical attention if symptoms occur.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.  
If easy to do, remove contact lens, if worn.  
Get medical attention immediately.
- If swallowed : If swallowed, DO NOT induce vomiting.  
Get medical attention if symptoms occur.  
Rinse mouth thoroughly with water.
- Most important symptoms and effects, both acute and delayed : Prolonged or repeated contact may dry skin and cause irritation.  
Causes serious eye damage.
- Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.
- Notes to physician : Treat symptomatically and supportively.

SAFETY DATA SHEET



**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

Version 1.0      Revision Date: 02/12/2015      MSDS Number: 57113-00001      Date of last issue: -  
Date of first issue: 02/12/2015

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**SECTION 5. FIRE-FIGHTING MEASURES**

- Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Dry chemical  
Carbon dioxide (CO2)
  - Unsuitable extinguishing media : None known.
  - Specific hazards during fire fighting : Exposure to combustion products may be a hazard to health.
  - Hazardous combustion products : Carbon oxides
  - Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.
  - Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.
- 

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.  
Follow safe handling advice and personal protective equipment recommendations.
  - Environmental precautions : Discharge into the environment must be avoided.  
Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g. by containment or oil barriers).  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.
  - Methods and materials for containment and cleaning up : Soak up with inert absorbent material.  
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.  
Clean up remaining materials from spill with suitable absorbent.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding
-

## SAFETY DATA SHEET



## GOJO® ORIGINAL FORMULA™ Hand Cleaner

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certain local or national requirements.

## SECTION 7. HANDLING AND STORAGE

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Local/Total ventilation : Use only with adequate ventilation.
- Advice on safe handling : Do not get on skin or clothing.  
Avoid inhalation of vapor or mist.  
Do not swallow.  
Do not get in eyes.  
Handle in accordance with good industrial hygiene and safety practice.  
Keep container tightly closed.  
Take care to prevent spills, waste and minimize release to the environment.
- Conditions for safe storage : Keep in properly labeled containers.  
Keep tightly closed.  
Store in accordance with the particular national regulations.
- Materials to avoid : Do not store with the following product types:  
Strong oxidizing agents

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Distillates (petroleum), hydrotreated light	64742-47-8	TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Mist)	5 mg/m3	NIOSH REL
		ST (Mist)	10 mg/m3	NIOSH REL
White mineral oil (petroleum)	8042-47-5	TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m3	ACGIH
		TWA (Mist)	5 mg/m3	NIOSH REL
Propylene glycol	57-55-6	ST (Mist)	10 mg/m3	NIOSH REL
		TWA	10 mg/m3	US WEEL
Petrolatum	8009-03-8	TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m3	ACGIH
		TWA (Mist)	5 mg/m3	NIOSH REL
		ST (Mist)	10 mg/m3	NIOSH REL

## Hazardous components without workplace control parameters

Ingredients	CAS-No.



## SAFETY DATA SHEET



## GOJO® ORIGINAL FORMULA™ Hand Cleaner

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Ethoxylated branched C11-14, C13-rich alcohols	78330-21-9
Sodium Hydroxymethylglycinate	70161-44-3

**Engineering measures** : Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.

**Personal protective equipment**

**Respiratory protection** : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

**Hand protection**  
**Material** : Impervious gloves

**Remarks** : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

**Eye protection** : Wear the following personal protective equipment:  
Chemical resistant goggles must be worn.  
If splashes are likely to occur, wear:  
Face-shield

**Skin and body protection** : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.  
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

**Hygiene measures** : Ensure that eye flushing systems and safety showers are located close to the working place.  
When using do not eat, drink or smoke.  
Wash contaminated clothing before re-use.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance** : liquid

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Color : opaque, white, yellow

Odor : solvent

Odor Threshold : No data available

pH : 9.0

Melting point/freezing point : No data available

Solidification / Setting point : No data available

Initial boiling point and boiling range : No data available

Flash point : > 100 °C

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Density : 1 g/cm<sup>3</sup>

Solubility(ies)  
Water solubility : soluble

Partition coefficient: n-octanol/water : Not applicable

Autoignition temperature : No data available

Decomposition temperature : The substance or mixture is not classified self-reactive.

Viscosity  
Viscosity, kinematic : 10,000 - 45,000 mm<sup>2</sup>/s (20 °C)

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

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### SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

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Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Can react with strong oxidizing agents.

Conditions to avoid : None known.

Incompatible materials : Oxidizing agents

Hazardous decomposition products : No hazardous decomposition products are known.

---

**SECTION 11. TOXICOLOGICAL INFORMATION**

**Information on likely routes of exposure**

Inhalation  
Skin contact  
Ingestion  
Eye contact

**Acute toxicity**

Not classified based on available information.

**Product:**

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method

**Ingredients:**

**Distillates (petroleum), hydrotreated light:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.3 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 3,160 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

**White mineral oil (petroleum):**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

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**Ethoxylated branched C11-14, C13-rich alcohols:**

Acute oral toxicity : Acute toxicity estimate: 500 mg/kg  
Method: Expert judgment

**Propylene glycol:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rabbit): > 159 mg/l, > 51091 ppm  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

**Petrolatum:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity  
Remarks: Based on data from similar materials

**Sodium Hydroxymethylglycinate:**

Acute oral toxicity : LD50 (Rat): 1,050 mg/kg

**Skin corrosion/irritation**

Not classified based on available information.

**Product:**

Result: No skin irritation

**Ingredients:**

**Distillates (petroleum), hydrotreated light:**

Assessment: Repeated exposure may cause skin dryness or cracking.

**White mineral oil (petroleum):**

Species: Rabbit

Result: No skin irritation

**Ethoxylated branched C11-14, C13-rich alcohols:**

Species: Rabbit

Result: No skin irritation

Remarks: Based on data from similar materials

**Propylene glycol:**

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

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**Petrolatum:**

Species: Rabbit  
Method: OECD Test Guideline 404  
Result: No skin irritation  
Remarks: Based on data from similar materials

**Sodium Hydroxymethylglycinate:**

Species: Rabbit  
Result: Skin irritation

**Serious eye damage/eye irritation**

Causes serious eye damage.

**Ingredients:**

**Distillates (petroleum), hydrotreated light:**

Species: Rabbit  
Result: No eye irritation

**White mineral oil (petroleum):**

Species: Rabbit  
Result: No eye irritation

**Ethoxylated branched C11-14, C13-rich alcohols:**

Result: Irreversible effects on the eye  
Remarks: Based on data from similar materials

**Propylene glycol:**

Species: Rabbit  
Result: No eye irritation  
Method: OECD Test Guideline 405

**Petrolatum:**

Species: Rabbit  
Result: No eye irritation  
Method: OECD Test Guideline 405  
Remarks: Based on data from similar materials

**Sodium Hydroxymethylglycinate:**

Species: Rabbit  
Result: Irritation to eyes, reversing within 21 days

**Respiratory or skin sensitization**

Skin sensitization: Not classified based on available information.  
Respiratory sensitization: Not classified based on available information.

**Product:**

Assessment: Does not cause skin sensitization.

**Ingredients:**

**Distillates (petroleum), hydrotreated light:**

Test Type: Maximization Test (GPMT)  
Routes of exposure: Skin contact

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Species: Guinea pig  
Result: negative  
Remarks: Based on data from similar materials

**White mineral oil (petroleum):**  
Test Type: Buehler Test  
Routes of exposure: Skin contact  
Species: Guinea pig  
Result: negative

**Ethoxylated branched C11-14, C13-rich alcohols:**  
Test Type: Human repeat insult patch test (HRIPT)  
Routes of exposure: Skin contact  
Result: negative  
Remarks: Based on data from similar materials

**Propylene glycol:**  
Test Type: Maximization Test (GPMT)  
Routes of exposure: Skin contact  
Species: Guinea pig  
Result: negative

**Petrolatum:**  
Test Type: Buehler Test  
Routes of exposure: Skin contact  
Species: Guinea pig  
Result: negative  
Remarks: Based on data from similar materials

**Sodium Hydroxymethylglycinate:**  
Test Type: Maximization Test (GPMT)  
Routes of exposure: Skin contact  
Species: Guinea pig  
Result: positive

Assessment: Probability or evidence of skin sensitization in humans

**Germ cell mutagenicity**  
Not classified based on available information.

**Ingredients:**

**Distillates (petroleum), hydrotreated light:**

Genotoxicity in vitro      : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Genotoxicity in vivo      : Test Type: Chromosomal aberration  
Species: Rat  
Application Route: Intraperitoneal injection  
Result: negative  
Remarks: Based on data from similar materials

**White mineral oil (petroleum):**  
Genotoxicity in vitro      : Test Type: In vitro mammalian cell gene mutation test  
Result: negative

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Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: Based on data from similar materials

**Propylene glycol:**  
Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test  
Species: Mouse  
Application Route: Intraperitoneal injection  
Result: negative

**Petrolatum:**  
Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
Result: negative  
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: Based on data from similar materials

**Sodium Hydroxymethylglycinate:**  
Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Genotoxicity in vivo : Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo  
Species: Rat  
Result: negative

**Carcinogenicity**

Not classified based on available information.

**Ingredients:****White mineral oil (petroleum):**

Species: Rat  
Application Route: Ingestion  
Exposure time: 24 Months  
Result: negative

**Propylene glycol:**

Species: Rat  
Application Route: Ingestion  
Exposure time: 2 Years  
Result: negative

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**Petrolatum:**

Species: Rat  
Application Route: Ingestion  
Exposure time: 2 Years  
Result: negative

**IARC**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**NTP**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

Not classified based on available information.

**Ingredients:**

**Distillates (petroleum), hydrotreated light:**

Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Ingestion  
Result: negative

**White mineral oil (petroleum):**

Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Rat  
Application Route: Skin contact  
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Ingestion  
Result: negative

**Propylene glycol:**

Effects on fertility : Species: Mouse  
Application Route: Ingestion  
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Mouse  
Application Route: Ingestion  
Result: negative



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**Petrolatum:**

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test  
Species: Rat  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Skin contact  
Result: negative  
Remarks: Based on data from similar materials

**Sodium Hydroxymethylglycinate:**

Effects on fetal development : Species: Rat  
Application Route: Ingestion  
Result: negative

**STOT-single exposure**

Not classified based on available information.

**STOT-repeated exposure**

Not classified based on available information.

**Repeated dose toxicity**

**Ingredients:**

**Distillates (petroleum), hydrotreated light:**

Species: Rat  
NOAEL: > 10.4 mg/l  
Application Route: inhalation (vapor)  
Exposure time: 90 d  
Remarks: Based on data from similar materials

**White mineral oil (petroleum):**

Species: Rat  
LOAEL: 160 mg/kg  
Application Route: Ingestion  
Exposure time: 90 d

Species: Rat  
LOAEL: >= 1 mg/l  
Application Route: inhalation (dust/mist/fume)  
Exposure time: 4 w  
Method: OECD Test Guideline 412

**Propylene glycol:**

Species: Rat  
NOAEL: 1,700 mg/kg  
Application Route: Ingestion  
Exposure time: 2 y

**Petrolatum:**

Species: Rat

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NOAEL: 5,000 mg/kg  
Application Route: Ingestion  
Exposure time: 2 y

### Aspiration toxicity

Not classified based on available information.

### Product:

No aspiration toxicity classification

### Ingredients:

#### **Distillates (petroleum), hydrotreated light:**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

#### **White mineral oil (petroleum):**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

---

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Ingredients:

#### **Distillates (petroleum), hydrotreated light:**

- Toxicity to fish : LL50 (Danio rerio (zebra fish)): > 250 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EL50 (Acartia tonsa): > 3,193 mg/l  
Exposure time: 48 h  
Test substance: Water Accommodated Fraction
- Toxicity to algae : EL50 (Skeletonema costatum (marine diatom)): > 3,200 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction
- NOELR (Skeletonema costatum (marine diatom)): 993 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR (Ceriodaphnia dubia (water flea)): > 70 mg/l  
Exposure time: 8 d  
Test substance: Water Accommodated Fraction
- Toxicity to bacteria : EC50: > 100 mg/l  
Exposure time: 3 h
- #### **White mineral oil (petroleum):**
- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l  
Exposure time: 96 h
-

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Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae : NOEC (Pseudokirchneriella subcapitata (green algae)): 100 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 1,000 mg/l  
Exposure time: 28 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1,000 mg/l  
Exposure time: 21 d

**Ethoxylated branched C11-14, C13-rich alcohols:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 5.6 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l  
Exposure time: 48 h  
Remarks: Based on data from similar materials

Toxicity to algae : EC50: > 1 - 10 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials

Toxicity to fish (Chronic toxicity) : NOEC (Lepomis macrochirus (Bluegill sunfish)): > 0.33 mg/l  
Exposure time: 30 d  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.77 mg/l  
Exposure time: 21 d  
Remarks: Based on data from similar materials

**Propylene glycol:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 40,613 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Ceriodaphnia dubia (water flea)): 18,340 mg/l  
Exposure time: 48 h

Toxicity to algae : EC50 (Skeletonema costatum (marine diatom)): 19,000 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : Chronic Toxicity Value: 2,500 mg/l  
Exposure time: 30 d

Toxicity to daphnia and other aquatic invertebrates : NOEC (Ceriodaphnia dubia (water flea)): 29,000 mg/l  
Exposure time: 7 d

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### (Chronic toxicity)

Toxicity to bacteria : NOEC (*Pseudomonas putida*): > 20,000 mg/l  
Exposure time: 18 h

### **Petrolatum:**

Toxicity to fish : LL50 (*Pimephales promelas* (fathead minnow)): > 100 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 10,000 mg/l  
Exposure time: 48 h  
Test substance: Water Accommodated Fraction  
Remarks: Based on data from similar materials

Toxicity to algae : NOEL (*Pseudokirchneriella subcapitata* (green algae)): >= 100 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (*Daphnia magna* (Water flea)): 10 mg/l  
Exposure time: 21 d  
Test substance: Water Accommodated Fraction  
Remarks: Based on data from similar materials

### **Sodium Hydroxymethylglycinate:**

Toxicity to fish : LC50: > 10 - 100 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia pulex* (Water flea)): > 10 - 100 mg/l  
Exposure time: 48 h

Toxicity to algae : ErC50 (*Desmodesmus subspicatus* (*Scenedesmus subspicatus*)): > 10 - 100 mg/l  
Exposure time: 72 h

Toxicity to bacteria : EC50: > 100 mg/l  
Exposure time: 120 h

### **Persistence and degradability**

#### Ingredients:

#### **Distillates (petroleum), hydrotreated light:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 82 %  
Exposure time: 24 d  
Method: OECD Test Guideline 301F

#### **White mineral oil (petroleum):**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 31 %

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Exposure time: 28 d

### Ethoxylated branched C11-14, C13-rich alcohols:

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 95 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
Remarks: Based on data from similar materials

### Propylene glycol:

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 98.3 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

### Petrolatum:

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 31 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
Remarks: Based on data from similar materials

### Sodium Hydroxymethylglycinate:

Biodegradability : Result: Readily biodegradable.

### Bioaccumulative potential

#### Ingredients:

##### Propylene glycol:

Partition coefficient: n-octanol/water : log Pow: -1.07

##### Sodium Hydroxymethylglycinate:

Partition coefficient: n-octanol/water : log Pow: < 3

### Mobility in soil

No data available

### Other adverse effects

No data available

---

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging :

Dispose of as unused product.  
Empty containers should be taken to an approved waste handling site for recycling or disposal.

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## SECTION 14. TRANSPORT INFORMATION

## International Regulation

## UNRTDG

Not regulated as a dangerous good

## IATA-DGR

Not regulated as a dangerous good

## IMDG-Code

Not regulated as a dangerous good

## Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

## Domestic regulation

## 49 CFR

Not regulated as a dangerous good

## SECTION 15. REGULATORY INFORMATION

## EPCRA - Emergency Planning and Community Right-to-Know

## CERCLA Reportable Quantity

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sodium hydroxide	1310-73-2	1000	*

\*: Calculated RQ exceeds reasonably attainable upper limit.

## SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

## US State Regulations

## Pennsylvania Right To Know

Distillates (petroleum), hydrotreated light	64742-47-8	30 - 50 %
Water	7732-18-5	30 - 50 %
White mineral oil (petroleum)	8042-47-5	10 - 20 %
Oleic acid	112-80-1	5 - 10 %
Ethoxylated branched C11-14, C13-rich alcohols	78330-21-9	1 - 5 %
Propylene glycol	57-55-6	1 - 5 %

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Petrolatum	8009-03-8	1 - 5 %
Sodium hydroxide	1310-73-2	0.1 - 1 %
<b>New Jersey Right To Know</b>		
Distillates (petroleum), hydrotreated light	64742-47-8	30 - 50 %
Water	7732-18-5	30 - 50 %
White mineral oil (petroleum)	8042-47-5	10 - 20 %
Oleic acid	112-80-1	5 - 10 %
Ethoxylated branched C11-14, C13-rich alcohols	78330-21-9	1 - 5 %
Propylene glycol	57-55-6	1 - 5 %

**California Prop 65**      This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

**The ingredients of this product are reported in the following inventories:**

AICS      : All ingredients listed or exempt.

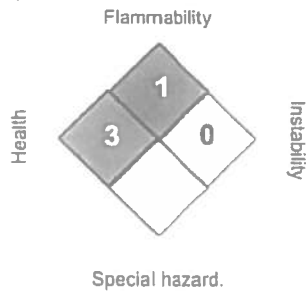
**Inventories**

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), NECSI (Taiwan), TSCA (USA)

**SECTION 16. OTHER INFORMATION**

**Further information**

**NFPA:**



**HMIS III:**

<b>HEALTH</b>	<b>3</b>
<b>FLAMMABILITY</b>	<b>1</b>
<b>PHYSICAL HAZARD</b>	<b>0</b>

0 = not significant, 1 = Slight,  
 2 = Moderate, 3 = High  
 4 = Extreme, \* = Chronic

**Full text of other abbreviations**

- ACGIH      : USA. ACGIH Threshold Limit Values (TLV)
- NIOSH REL      : USA. NIOSH Recommended Exposure Limits
- OSHA Z-1      : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
- US WEEL      : USA. Workplace Environmental Exposure Levels (WEEL)
- ACGIH / TWA      : 8-hour, time-weighted average

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NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA Z-1 / TWA	:	8-hour time weighted average
US WEEL / TWA	:	8-hr TWA

Sources of key data used to compile the Material Safety Data Sheet	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <a href="http://echa.europa.eu/">http://echa.europa.eu/</a>
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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

US / Z8



Fuels

On Road Diesel

By

Exxon Mobile

Product Name: NO. 2 DIESEL FUEL  
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## SAFETY DATA SHEET

### SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT

**Product Name:** NO. 2 DIESEL FUEL  
**Product Description:** Hydrocarbons and Additives  
**Product Code:** 123455-22, 123455-29, 152017-00  
**Intended Use:** Diesel engine fuel, Heating Oil

#### COMPANY IDENTIFICATION

**Supplier:** EXXON MOBIL CORPORATION  
22777 Springwoods Village Parkway  
Spring, TX. 77253 USA

**24 Hour Health Emergency:** 609-737-4411  
**Transportation Emergency Phone:** 800-424-9300 or 703-527-3887 CHEMTREC  
**Product Technical Information:** 800-662-4525  
**MSDS Internet Address:** <http://www.exxon.com>, <http://www.mobil.com>

### SECTION 2 HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

#### CLASSIFICATION:

Flammable liquid: Category 3.  
Acute inhalation toxicant: Category 4. Skin irritation: Category 2. Carcinogen: Category 2. Specific target organ toxicant (repeated exposure): Category 2. Aspiration toxicant: Category 1.

#### LABEL:

##### Pictogram:



**Signal Word:** Danger

#### Hazard Statements:

H226: Flammable liquid and vapor. H304: May be fatal if swallowed and enters airways. H315: Causes skin irritation. H332: Harmful if inhaled. H351: Suspected of causing cancer. H373: May cause damage to organs

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through prolonged or repeated exposure. Liver, Bone marrow, Thymus

### Precautionary Statements:

P101: If medical advice is needed, have product container or label at hand. P102: Keep out of reach of children. P103: Read label before use. P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P210: Keep away from heat/sparks/open flames/hot surfaces. -- No smoking. P233: Keep container tightly closed. P240: Ground / bond container and receiving equipment. P241: Use explosion-proof electrical, ventilating, and lighting equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P260: Do not breathe mist / vapours. P264: Wash skin thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P308 + P313: IF exposed or concerned: Get medical advice/ attention. P312: Call a POISON CENTER or doctor/physician if you feel unwell. P331: Do NOT induce vomiting. P332 + P313: If skin irritation occurs: Get medical advice/ attention. P362 + P364: Take off contaminated clothing and wash it before reuse. P370 + P378: In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish. P391: Collect spillage. P403 + P235: Store in a well-ventilated place. Keep cool. P405: Store locked up. P501: Dispose of contents and container in accordance with local regulations.

**Contains:** DIESEL OIL..C9-20

### Other hazard information:

**HAZARD NOT OTHERWISE CLASSIFIED (HNOC):** None as defined under 29 CFR 1910.1200.

### PHYSICAL / CHEMICAL HAZARDS

Material can accumulate static charges which may cause an ignition. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited.

### HEALTH HAZARDS

May cause central nervous system depression. High-pressure injection under skin may cause serious damage. Under conditions of poor personal hygiene and prolonged repeated contact, some polycyclic aromatic compounds (PACs) have been suspected as a cause of skin cancer in humans. May be irritating to the eyes, nose, throat, and lungs.

### ENVIRONMENTAL HAZARDS

Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

<b>NFPA Hazard ID:</b>	Health: 2	Flammability: 2	Reactivity: 0
<b>HMIS Hazard ID:</b>	Health: 2*	Flammability: 2	Reactivity: 0

**NOTE:** This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

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### Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
DIESEL OIL..C9-20	68334-30-5	80 - > 99%	H226, H304, H332, H351, H315, H373, H401, H411

### Hazardous Constituent(s) Contained in Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
ETHYL BENZENE	100-41-4	0.1 - 1%	H225, H332, H373, H401, H412
NAPHTHALENE	91-20-3	0.1 - 1%	H302, H351, H400(M factor 1), H410(M factor 1)

\* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

NOTE: Composition may contain up to 0.5% performance additives and / or dyes.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

## SECTION 4 FIRST AID MEASURES

### INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

### SKIN CONTACT

Remove contaminated clothing. Dry wipe exposed skin and cleanse with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further skin contact to yourself or others. Wear impervious gloves. Launder contaminated clothing separately before reuse. Discard contaminated articles that cannot be laundered. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

### EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

### INGESTION

Seek immediate medical attention. Do not induce vomiting.

### NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

### PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE

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Contains hydrocarbon solvent/petroleum hydrocarbons; skin contact may aggravate an existing dermatitis.

## SECTION 5 FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

**Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight Streams of Water

### FIRE FIGHTING

**Fire Fighting Instructions:** Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

**Unusual Fire Hazards:** Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

**Hazardous Combustion Products:** Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

### FLAMMABILITY PROPERTIES

**Flash Point [Method]:** >38°C (100°F) [ASTM D-93]

**Flammable Limits (Approximate volume % in air):** LEL: 0.6 UEL: 7.0

**Autoignition Temperature:** >200°C (392°F)

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

### PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H<sub>2</sub>S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

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## SPILL MANAGEMENT

**Land Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

**Water Spill:** Stop leak if you can do it without risk. Eliminate sources of ignition. Warn other shipping. If the Flash Point exceeds the Ambient Temperature by 10 degrees C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point does not exceed the Ambient Air Temperature by at least 10C, use booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

## ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

## SECTION 7

## HANDLING AND STORAGE

### HANDLING

Avoid all personal contact. Do not siphon by mouth. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only. It is dangerous and/or unlawful to put fuel into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapors and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) in or around any fueling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

**Static Accumulator:** This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m ( $100 \times 10^{-12}$  Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

### STORAGE

The container choice, for example storage vessel, may effect static accumulation and dissipation. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be grounded and bonded. Fixed storage

containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge. Keep away from incompatible materials.

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
DIESEL OIL..C9-20	Stable Aerosol.	TWA	5 mg/m3		N/A	ExxonMobil
DIESEL OIL..C9-20	Vapor.	TWA	200 mg/m3		N/A	ExxonMobil
DIESEL OIL..C9-20 [total hydrocarb, vapor&aerosol]	Inhalable fraction and vapor	TWA	100 mg/m3		Skin	ACGIH
ETHYL BENZENE		TWA	435 mg/m3	100 ppm	N/A	OSHA Z1
ETHYL BENZENE		TWA	20 ppm		N/A	ACGIH
NAPHTHALENE		TWA	50 mg/m3	10 ppm	N/A	OSHA Z1
NAPHTHALENE		TWA	10 ppm		Skin	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

### Biological limits

Substance	Specimen	Sampling Time	Limit	Determinant	Source
ETHYL BENZENE	Creatinine in urine	End of shift	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	ACGIH BELs (BEIs)
NAPHTHALENE	No Biological Specimen provided	End of shift	Not Assigned	1-Naphthol, with hydrolysis + 2-Naphthol, with hydrolysis	ACGIH BELs (BEIs)

### ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

### PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:** If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Half-face filter respirator



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For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

**Hand Protection:** Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves.

**Eye Protection:** If contact with material is likely, chemical goggles are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

Chemical/oil resistant clothing is recommended.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

## ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

## SECTION 9

## PHYSICAL AND CHEMICAL PROPERTIES

**Note:** Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

### GENERAL INFORMATION

**Physical State:** Liquid  
**Color:** Clear (May Be Dyed)  
**Odor:** Petroleum/Solvent  
**Odor Threshold:** N/D

### IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Relative Density (at 15 °C):** 0.81 - 0.87  
**Density (at 15 °C):** 810 kg/m<sup>3</sup> (6.76 lbs/gal, 0.81 kg/dm<sup>3</sup>) - 876 kg/m<sup>3</sup> (7.31 lbs/gal, 0.88 kg/dm<sup>3</sup>)  
**Flammability (Solid, Gas):** N/A  
**Flash Point [Method]:** >38°C (100°F) [ASTM D-93]  
**Flammable Limits (Approximate volume % in air):** LEL: 0.6 UEL: 7.0  
**Autoignition Temperature:** >200°C (392°F)  
**Boiling Point / Range:** 145°C (293°F) - 370°C (698°F)  
**Decomposition Temperature:** N/D  
**Vapor Density (Air = 1):** > 2 at 101 kPa  
**Vapor Pressure:** 0.067 kPa (0.5 mm Hg) at 20 °C  
**Evaporation Rate (n-butyl acetate = 1):** N/D

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**pH:** N/A  
**Log Pow (n-Octanol/Water Partition Coefficient):** > 3.5  
**Solubility in Water:** Negligible  
**Viscosity:** 1.7 cSt (1.7 mm<sup>2</sup>/sec) at 40 °C - 4.1 cSt (4.1 mm<sup>2</sup>/sec) at 40 °C  
**Oxidizing Properties:** See Hazards Identification Section.

## OTHER INFORMATION

**Freezing Point:** N/D  
**Melting Point:** N/A  
**Pour Point:** < -6°C (21°F)

<b>SECTION 10</b>	<b>STABILITY AND REACTIVITY</b>
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**REACTIVITY:** See sub-sections below.

**STABILITY:** Material is stable under normal conditions.

**CONDITIONS TO AVOID:** Open flames and high energy ignition sources.

**MATERIALS TO AVOID:** Halogens, Strong Acids, Strong Bases, Strong oxidizers

**HAZARDOUS DECOMPOSITION PRODUCTS:** Material does not decompose at ambient temperatures.

**POSSIBILITY OF HAZARDOUS REACTIONS:** Hazardous polymerization will not occur.

<b>SECTION 11</b>	<b>TOXICOLOGICAL INFORMATION</b>
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### INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
<b>Inhalation</b>	
Acute Toxicity: (Rat) 4 hour(s) LC50 4100 mg/m <sup>3</sup> (Vapor and aerosol)	Moderately toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 403
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.
<b>Ingestion</b>	
Acute Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 401
<b>Skin</b>	
Acute Toxicity (Rabbit): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 434
Skin Corrosion/Irritation (Rabbit): Data available.	Irritating to the skin. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 404
<b>Eye</b>	
Serious Eye Damage/Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405
<b>Sensitization</b>	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: Data available.	Not expected to be a skin sensitizer. Based on test data for

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	structurally similar materials. Test(s) equivalent or similar to OECD Guideline 406
<b>Aspiration:</b> Data available.	May be fatal if swallowed and enters airways. Based on physico-chemical properties of the material.
<b>Germ Cell Mutagenicity:</b> Data available.	Not expected to be a germ cell mutagen. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 471 475
<b>Carcinogenicity:</b> Data available.	Caused cancer in laboratory animals, but the relevance to humans is uncertain. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 451
<b>Reproductive Toxicity:</b> Data available.	Not expected to be a reproductive toxicant. Test(s) equivalent or similar to OECD Guideline 414
<b>Lactation:</b> No end point data for material.	Not expected to cause harm to breast-fed children.
<b>Specific Target Organ Toxicity (STOT)</b>	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: Data available.	Concentrated, prolonged or deliberate exposure may cause organ damage. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 410 413

## TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
ETHYL BENZENE	Inhalation Lethality: 4 hour(s) LC50 17.8 mg/l (Vapor) (Rat); Oral Lethality: LD50 3.5 g/kg (Rat)
NAPHTHALENE	Inhalation Lethality: 4 hour(s) LC50 > 0.4 mg/l (Max attainable vapor conc.) (Rat); Oral Lethality: LD50 533 mg/kg (Mouse)

## OTHER INFORMATION

### For the product itself:

Target Organs Repeated Exposure: Liver, Bone marrow, Thymus

Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Diesel fuel: Caused cancer in animal tests. Caused mutations in vitro. Repeated dermal exposures to high concentrations in test animals resulted in reduced litter size and litter weight, and increased fetal resorptions at maternally toxic doses. Dermal exposure to high concentrations resulted in severe skin irritation with weight loss and some mortality. Inhalation exposure to high concentrations resulted in respiratory tract irritation, lung changes/infiltration/accumulation, and reduction in lung function.

Diesel exhaust fumes: Carcinogenic in animal tests. Inhalation exposures to exhaust for 2 years in test animals resulted in lung tumors and lymphoma. Extract of particulate produced skin tumors in test animals. Caused mutations in vitro.

### Contains:

**NAPHTHALENE:** Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain.

**ETHYLBENZENE:** Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
ETHYL BENZENE	100-41-4	5
NAPHTHALENE	91-20-3	2, 5

--REGULATORY LISTS SEARCHED--

- |              |             |               |
|--------------|-------------|---------------|
| 1 = NTP CARC | 3 = IARC 1  | 5 = IARC 2B   |
| 2 = NTP SUS  | 4 = IARC 2A | 6 = OSHA CARC |

SECTION 12	ECOLOGICAL INFORMATION
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The information given is based on data available for the material, the components of the material, and similar materials.

### ECOTOXICITY

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

### MOBILITY

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

High molecular wt. component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

### PERSISTENCE AND DEGRADABILITY

#### Biodegradation:

Material -- Expected to be inherently biodegradable

#### Atmospheric Oxidation:

More volatile component -- Expected to degrade rapidly in air

### ECOLOGICAL DATA

#### Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	96 hour(s)	Fish	LL50 1 - 100 mg/l: data for similar materials
Aquatic - Acute Toxicity	48 hour(s)	Daphnia magna	EL50 1 - 1000 mg/l: data for similar materials
Aquatic - Acute Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	EL50 1 - 100 mg/l: data for similar materials
Aquatic - Chronic Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	NOELR 1 - 10 mg/l: data for similar materials

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## Persistence, Degradability and Bioaccumulation Potential

Media	Test Type	Duration	Test Results
Water	Ready Biodegradability	28 day(s)	Percent Degraded < 60 : similar material

## SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

### DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

### REGULATORY DISPOSAL INFORMATION

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY.

**Empty Container Warning** Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

## SECTION 14 TRANSPORT INFORMATION

### LAND (DOT)

**Proper Shipping Name:** DIESEL FUEL  
**Hazard Class & Division:** COMBUSTIBLE LIQUID  
**ID Number:** NA1993  
**Packing Group:** III  
**Marine Pollutant:** Yes  
**ERG Number:** 128  
**Label(s):** NONE  
**Transport Document Name:** NA1993, DIESEL FUEL, COMBUSTIBLE LIQUID, PG III, MARINE POLLUTANT

Footnote: The flash point of this material is greater than 100 F. Regulatory classification of this material varies. DOT: Flammable liquid or combustible liquid. OSHA: Combustible liquid. IATA/IMO: Flammable liquid.

### LAND (TDG)

**Proper Shipping Name:** GAS OIL  
**Hazard Class & Division:** 3  
**UN Number:** 1202  
**Packing Group:** III

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**SEA (IMDG)**

Proper Shipping Name: GAS OIL  
 Hazard Class & Division: 3  
 EMS Number: F-E, S-E  
 UN Number: 1202  
 Packing Group: III  
 Marine Pollutant: Yes  
 Label(s): 3  
 Transport Document Name: UN1202, GAS OIL, 3, PG III, (55°C c.c.), MARINE POLLUTANT

**AIR (IATA)**

Proper Shipping Name: GAS OIL  
 Hazard Class & Division: 3  
 UN Number: 1202  
 Packing Group: III  
 Label(s) / Mark(s): 3  
 Transport Document Name: UN1202, GAS OIL, 3, PG III

<b>SECTION 15</b>	<b>REGULATORY INFORMATION</b>
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**OSHA HAZARD COMMUNICATION STANDARD:** This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

**Listed or exempt from listing/notification on the following chemical inventories:** AICS, DSL, IECSC, KECI, PICCS, TSCA

**SARA 302:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

**CERCLA:** This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

**SARA (311/312) REPORTABLE HAZARD CATEGORIES:** Fire. Immediate Health. Delayed Health.

**SARA (313) TOXIC RELEASE INVENTORY:**

Chemical Name	CAS Number	Typical Value
ETHYL BENZENE	100-41-4	0.1 - 1%
NAPHTHALENE	91-20-3	0.1 - 1%

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
DIESEL OIL..C9-20	68334-30-5	1, 18
ETHYL BENZENE	100-41-4	1, 4, 10, 17, 19

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NAPHTHALENE	91-20-3	1, 4, 10, 17, 19
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--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

<b>SECTION 16</b>	<b>OTHER INFORMATION</b>
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This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product.

N/D = Not determined, N/A = Not applicable

**KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):**

- H225: Highly flammable liquid and vapor; Flammable Liquid, Cat 2
- H226: Flammable liquid and vapor; Flammable Liquid, Cat 3
- H302: Harmful if swallowed; Acute Tox Oral, Cat 4
- H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
- H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
- H332: Harmful if inhaled; Acute Tox Inh, Cat 4
- H351: Suspected of causing cancer; GHS Carcinogenicity, Cat 2
- H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2
- H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
- H401: Toxic to aquatic life; Acute Env Tox, Cat 2
- H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1
- H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**

Revision Changes:

- Section 01: Company Mailing Address information was modified.
- Section 05: Hazardous Combustion Products information was modified.
- Section 15: SARA (313) TOXIC RELEASE INVENTORY - Table information was modified.
- Section 15: Community RTK - Header information was modified.
- Composition: Component Table information was modified.
- Section 08: Biological Exposure Limits (ACG BEL) - Limit Header information was added.
- Section 16: Revision Information - Implementation of GHS requirements phrase. information was deleted.
- Section 08: Biological Exposure Limits (South Africa) - Limit Header information was deleted.

**THIS MSDS COVERS THE FOLLOWING MATERIALS:** DIESEL NO. 2 | ESSO DIESEL FUEL | EXXON DIESEL FUEL | LOW SULFUR DIESEL | MARINE DIESEL FUEL | MOBIL DIESEL FUEL | ULTRA LOW SULFUR DIESEL | WINTERIZED DIESEL FUEL

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 The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate

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and reliable as of the date issued. You can contact ExxonMobil to insure that this document is the most current available from ExxonMobil. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, re-publication or retransmission of this document, in whole or in part, is not permitted. The term, "ExxonMobil" is used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates in which they directly or indirectly hold any interest.

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MHC: 1A, 0B, 2, 0, 4, 1

PPEC: C

DGN: 7079307XUS (1012398)

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Off Road Diesel

By

Exxon Mobile

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## SAFETY DATA SHEET

### SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT

**Product Name:** NO. 2 DIESEL FUEL  
**Product Description:** Hydrocarbons and Additives  
**Product Code:** 123455-22, 123455-29, 152017-00  
**Intended Use:** Diesel engine fuel, Heating Oil

#### COMPANY IDENTIFICATION

**Supplier:** EXXON MOBIL CORPORATION  
 22777 Springwoods Village Parkway  
 Spring, TX. 77253 USA

**24 Hour Health Emergency** 609-737-4411  
**Transportation Emergency Phone** 800-424-9300 or 703-527-3887 CHEMTREC  
**Product Technical Information** 800-662-4525  
**MSDS Internet Address** <http://www.exxon.com>, <http://www.mobil.com>

### SECTION 2 HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

#### CLASSIFICATION:

Flammable liquid: Category 3.  
 Acute inhalation toxicant: Category 4. Skin irritation: Category 2. Carcinogen: Category 2. Specific target organ toxicant (repeated exposure): Category 2. Aspiration toxicant: Category 1.

#### LABEL:

##### Pictogram:



**Signal Word:** Danger

#### Hazard Statements:

H226: Flammable liquid and vapor. H304: May be fatal if swallowed and enters airways. H315: Causes skin irritation. H332: Harmful if inhaled. H351: Suspected of causing cancer. H373: May cause damage to organs

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through prolonged or repeated exposure. Liver, Bone marrow, Thymus

### Precautionary Statements:

P101: If medical advice is needed, have product container or label at hand. P102: Keep out of reach of children. P103: Read label before use. P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P210: Keep away from heat/sparks/open flames/hot surfaces. -- No smoking. P233: Keep container tightly closed. P240: Ground / bond container and receiving equipment. P241: Use explosion-proof electrical, ventilating, and lighting equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P260: Do not breathe mist / vapours. P264: Wash skin thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P308 + P313: IF exposed or concerned: Get medical advice/ attention. P312: Call a POISON CENTER or doctor/physician if you feel unwell. P331: Do NOT induce vomiting. P332 + P313: If skin irritation occurs: Get medical advice/ attention. P362 + P364: Take off contaminated clothing and wash it before reuse. P370 + P378: In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish. P391: Collect spillage. P403 + P235: Store in a well-ventilated place. Keep cool. P405: Store locked up. P501: Dispose of contents and container in accordance with local regulations.

**Contains:** DIESEL OIL..C9-20

### Other hazard information:

**HAZARD NOT OTHERWISE CLASSIFIED (HNOC):** None as defined under 29 CFR 1910.1200.

### PHYSICAL / CHEMICAL HAZARDS

Material can accumulate static charges which may cause an ignition. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited.

### HEALTH HAZARDS

May cause central nervous system depression. High-pressure injection under skin may cause serious damage. Under conditions of poor personal hygiene and prolonged repeated contact, some polycyclic aromatic compounds (PACs) have been suspected as a cause of skin cancer in humans. May be irritating to the eyes, nose, throat, and lungs.

### ENVIRONMENTAL HAZARDS

Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

<b>NFPA Hazard ID:</b>	Health: 2	Flammability: 2	Reactivity: 0
<b>HMIS Hazard ID:</b>	Health: 2*	Flammability: 2	Reactivity: 0

**NOTE:** This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

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**Hazardous Substance(s) or Complex Substance(s) required for disclosure**

Name	CAS#	Concentration*	GHS Hazard Codes
DIESEL OIL..C9-20	68334-30-5	80 - > 99%	H226, H304, H332, H351, H315, H373, H401, H411

**Hazardous Constituent(s) Contained in Complex Substance(s) required for disclosure**

Name	CAS#	Concentration*	GHS Hazard Codes
ETHYL BENZENE	100-41-4	0.1 - 1%	H225, H332, H373, H401, H412
NAPHTHALENE	91-20-3	0.1 - 1%	H302, H351, H400(M factor 1), H410(M factor 1)

\* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

NOTE: Composition may contain up to 0.5% performance additives and / or dyes.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

**SECTION 4 FIRST AID MEASURES**

**INHALATION**

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

**SKIN CONTACT**

Remove contaminated clothing. Dry wipe exposed skin and cleanse with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further skin contact to yourself or others. Wear impervious gloves. Launder contaminated clothing separately before reuse. Discard contaminated articles that cannot be laundered. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

**EYE CONTACT**

Flush thoroughly with water. If irritation occurs, get medical assistance.

**INGESTION**

Seek immediate medical attention. Do not induce vomiting.

**NOTE TO PHYSICIAN**

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

**PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE**

Contains hydrocarbon solvent/petroleum hydrocarbons; skin contact may aggravate an existing dermatitis.

## SECTION 5 FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

**Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight Streams of Water

### FIRE FIGHTING

**Fire Fighting Instructions:** Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

**Unusual Fire Hazards:** Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

**Hazardous Combustion Products:** Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

### FLAMMABILITY PROPERTIES

**Flash Point [Method]:** >38°C (100°F) [ASTM D-93]

**Flammable Limits (Approximate volume % in air):** LEL: 0.6 UEL: 7.0

**Autoignition Temperature:** >200°C (392°F)

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

### PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H<sub>2</sub>S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

## SPILL MANAGEMENT

**Land Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

**Water Spill:** Stop leak if you can do it without risk. Eliminate sources of ignition. Warn other shipping. If the Flash Point exceeds the Ambient Temperature by 10 degrees C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point does not exceed the Ambient Air Temperature by at least 10C, use booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

## ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

## SECTION 7

## HANDLING AND STORAGE

### HANDLING

Avoid all personal contact. Do not siphon by mouth. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only. It is dangerous and/or unlawful to put fuel into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapors and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) in or around any fueling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

**Static Accumulator:** This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

### STORAGE

The container choice, for example storage vessel, may effect static accumulation and dissipation. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be grounded and bonded. Fixed storage

containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge. Keep away from incompatible materials.

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
DIESEL OIL..C9-20	Stable Aerosol.	TWA	5 mg/m3		N/A	ExxonMobil
DIESEL OIL..C9-20	Vapor.	TWA	200 mg/m3		N/A	ExxonMobil
DIESEL OIL..C9-20 (total hydrocarb, vapor&aerosol]	Inhalable fraction and vapor	TWA	100 mg/m3		Skin	ACGIH
ETHYL BENZENE		TWA	435 mg/m3	100 ppm	N/A	OSHA Z1
ETHYL BENZENE		TWA	20 ppm		N/A	ACGIH
NAPHTHALENE		TWA	50 mg/m3	10 ppm	N/A	OSHA Z1
NAPHTHALENE		TWA	10 ppm		Skin	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

### Biological limits

Substance	Specimen	Sampling Time	Limit	Determinant	Source
ETHYL BENZENE	Creatinine in urine	End of shift	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	ACGIH BELs (BEIs)
NAPHTHALENE	No Biological Specimen provided	End of shift	Not Assigned	1-Naphthol, with hydrolysis + 2-Naphthol, with hydrolysis	ACGIH BELs (BEIs)

### ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

### PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:** If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Half-face filter respirator

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For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

**Hand Protection:** Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves.

**Eye Protection:** If contact with material is likely, chemical goggles are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

Chemical/oil resistant clothing is recommended.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

## ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

## SECTION 9

## PHYSICAL AND CHEMICAL PROPERTIES

**Note:** Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

### GENERAL INFORMATION

**Physical State:** Liquid  
**Color:** Clear (May Be Dyed)  
**Odor:** Petroleum/Solvent  
**Odor Threshold:** N/D

### IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Relative Density (at 15 °C):** 0.81 - 0.87  
**Density (at 15 °C):** 810 kg/m<sup>3</sup> (6.76 lbs/gal, 0.81 kg/dm<sup>3</sup>) - 876 kg/m<sup>3</sup> (7.31 lbs/gal, 0.88 kg/dm<sup>3</sup>)  
**Flammability (Solid, Gas):** N/A  
**Flash Point [Method]:** >38°C (100°F) [ASTM D-93]  
**Flammable Limits (Approximate volume % in air):** LEL: 0.6 UEL: 7.0  
**Autoignition Temperature:** >200°C (392°F)  
**Boiling Point / Range:** 145°C (293°F) - 370°C (698°F)  
**Decomposition Temperature:** N/D  
**Vapor Density (Air = 1):** > 2 at 101 kPa  
**Vapor Pressure:** 0.067 kPa (0.5 mm Hg) at 20 °C  
**Evaporation Rate (n-butyl acetate = 1):** N/D



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**pH:** N/A  
**Log Pow (n-Octanol/Water Partition Coefficient):** > 3.5  
**Solubility in Water:** Negligible  
**Viscosity:** 1.7 cSt (1.7 mm<sup>2</sup>/sec) at 40 °C - 4.1 cSt (4.1 mm<sup>2</sup>/sec) at 40 °C  
**Oxidizing Properties:** See Hazards Identification Section.

## OTHER INFORMATION

**Freezing Point:** N/D  
**Melting Point:** N/A  
**Pour Point:** < -6°C (21°F)

## SECTION 10 STABILITY AND REACTIVITY

**REACTIVITY:** See sub-sections below.

**STABILITY:** Material is stable under normal conditions.

**CONDITIONS TO AVOID:** Open flames and high energy ignition sources.

**MATERIALS TO AVOID:** Halogens, Strong Acids, Strong Bases, Strong oxidizers

**HAZARDOUS DECOMPOSITION PRODUCTS:** Material does not decompose at ambient temperatures.

**POSSIBILITY OF HAZARDOUS REACTIONS:** Hazardous polymerization will not occur.

## SECTION 11 TOXICOLOGICAL INFORMATION

### INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
<b>Inhalation</b>	
Acute Toxicity: (Rat) 4 hour(s) LC50 4100 mg/m <sup>3</sup> (Vapor and aerosol)	Moderately toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 403
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.
<b>Ingestion</b>	
Acute Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 401
<b>Skin</b>	
Acute Toxicity (Rabbit): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 434
Skin Corrosion/Irritation (Rabbit): Data available.	Irritating to the skin. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 404
<b>Eye</b>	
Serious Eye Damage/Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405
<b>Sensitization</b>	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: Data available.	Not expected to be a skin sensitizer. Based on test data for

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	structurally similar materials. Test(s) equivalent or similar to OECD Guideline 406
<b>Aspiration:</b> Data available.	May be fatal if swallowed and enters airways. Based on physico-chemical properties of the material.
<b>Germ Cell Mutagenicity:</b> Data available.	Not expected to be a germ cell mutagen. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 471 475
<b>Carcinogenicity:</b> Data available.	Caused cancer in laboratory animals, but the relevance to humans is uncertain. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 451
<b>Reproductive Toxicity:</b> Data available.	Not expected to be a reproductive toxicant. Test(s) equivalent or similar to OECD Guideline 414
<b>Lactation:</b> No end point data for material.	Not expected to cause harm to breast-fed children.
<b>Specific Target Organ Toxicity (STOT)</b>	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: Data available.	Concentrated, prolonged or deliberate exposure may cause organ damage. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 410 413

## TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
ETHYL BENZENE	Inhalation Lethality: 4 hour(s) LC50 17.8 mg/l (Vapor) (Rat); Oral Lethality: LD50 3.5 g/kg (Rat)
NAPHTHALENE	Inhalation Lethality: 4 hour(s) LC50 > 0.4 mg/l (Max attainable vapor conc.) (Rat); Oral Lethality: LD50 533 mg/kg (Mouse)

## OTHER INFORMATION

### For the product itself:

Target Organs Repeated Exposure: Liver, Bone marrow, Thymus

Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Diesel fuel: Caused cancer in animal tests. Caused mutations in vitro. Repeated dermal exposures to high concentrations in test animals resulted in reduced litter size and litter weight, and increased fetal resorptions at maternally toxic doses. Dermal exposure to high concentrations resulted in severe skin irritation with weight loss and some mortality. Inhalation exposure to high concentrations resulted in respiratory tract irritation, lung changes/infiltration/accumulation, and reduction in lung function.

Diesel exhaust fumes: Carcinogenic in animal tests. Inhalation exposures to exhaust for 2 years in test animals resulted in lung tumors and lymphoma. Extract of particulate produced skin tumors in test animals. Caused mutations in vitro.

### Contains:

**NAPHTHALENE:** Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain.

**ETHYLBENZENE:** Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
ETHYL BENZENE	100-41-4	5
NAPHTHALENE	91-20-3	2, 5

--REGULATORY LISTS SEARCHED--

- |              |             |               |
|--------------|-------------|---------------|
| 1 = NTP CARC | 3 = IARC 1  | 5 = IARC 2B   |
| 2 = NTP SUS  | 4 = IARC 2A | 6 = OSHA CARC |

SECTION 12	ECOLOGICAL INFORMATION
------------	------------------------

The information given is based on data available for the material, the components of the material, and similar materials.

### ECOTOXICITY

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

### MOBILITY

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

High molecular wt. component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

### PERSISTENCE AND DEGRADABILITY

#### Biodegradation:

Material -- Expected to be inherently biodegradable

#### Atmospheric Oxidation:

More volatile component -- Expected to degrade rapidly in air

### ECOLOGICAL DATA

#### Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	96 hour(s)	Fish	LL50 1 - 100 mg/l: data for similar materials
Aquatic - Acute Toxicity	48 hour(s)	Daphnia magna	EL50 1 - 1000 mg/l: data for similar materials
Aquatic - Acute Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	EL50 1 - 100 mg/l: data for similar materials
Aquatic - Chronic Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	NOELR 1 - 10 mg/l: data for similar materials

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## Persistence, Degradability and Bioaccumulation Potential

Media	Test Type	Duration	Test Results
Water	Ready Biodegradability	28 day(s)	Percent Degraded < 60 : similar material

## SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

### DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

### REGULATORY DISPOSAL INFORMATION

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY.

**Empty Container Warning** Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. **DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.**

## SECTION 14 TRANSPORT INFORMATION

### LAND (DOT)

**Proper Shipping Name:** DIESEL FUEL  
**Hazard Class & Division:** COMBUSTIBLE LIQUID  
**ID Number:** NA1993  
**Packing Group:** III  
**Marine Pollutant:** Yes  
**ERG Number:** 128  
**Label(s):** NONE  
**Transport Document Name:** NA1993, DIESEL FUEL, COMBUSTIBLE LIQUID, PG III, MARINE POLLUTANT

Footnote: The flash point of this material is greater than 100 F. Regulatory classification of this material varies. DOT: Flammable liquid or combustible liquid. OSHA: Combustible liquid. IATA/IMO: Flammable liquid.

### LAND (TDG)

**Proper Shipping Name:** GAS OIL  
**Hazard Class & Division:** 3  
**UN Number:** 1202  
**Packing Group:** III

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**SEA (IMDG)**

Proper Shipping Name: GAS OIL  
 Hazard Class & Division: 3  
 EMS Number: F-E, S-E  
 UN Number: 1202  
 Packing Group: III  
 Marine Pollutant: Yes  
 Label(s): 3  
 Transport Document Name: UN1202, GAS OIL, 3, PG III, (55°C c.c.), MARINE POLLUTANT

**AIR (IATA)**

Proper Shipping Name: GAS OIL  
 Hazard Class & Division: 3  
 UN Number: 1202  
 Packing Group: III  
 Label(s) / Mark(s): 3  
 Transport Document Name: UN1202, GAS OIL, 3, PG III

<b>SECTION 15</b>	<b>REGULATORY INFORMATION</b>
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**OSHA HAZARD COMMUNICATION STANDARD:** This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

**Listed or exempt from listing/notification on the following chemical inventories:** AICS, DSL, IECSC, KECI, PICCS, TSCA

**SARA 302:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

**CERCLA:** This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

**SARA (311/312) REPORTABLE HAZARD CATEGORIES:** Fire. Immediate Health. Delayed Health.

**SARA (313) TOXIC RELEASE INVENTORY:**

Chemical Name	CAS Number	Typical Value
ETHYL BENZENE	100-41-4	0.1 - 1%
NAPHTHALENE	91-20-3	0.1 - 1%

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
DIESEL OIL..C9-20	68334-30-5	1, 18
ETHYL BENZENE	100-41-4	1, 4, 10, 17, 19

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NAPHTHALENE	91-20-3	1, 4, 10, 17, 19
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--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

<b>SECTION 16</b>	<b>OTHER INFORMATION</b>
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This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product.

N/D = Not determined, N/A = Not applicable

**KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):**

- H225: Highly flammable liquid and vapor; Flammable Liquid, Cat 2
- H226: Flammable liquid and vapor; Flammable Liquid, Cat 3
- H302: Harmful if swallowed; Acute Tox Oral, Cat 4
- H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
- H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
- H332: Harmful if inhaled; Acute Tox Inh, Cat 4
- H351: Suspected of causing cancer; GHS Carcinogenicity, Cat 2
- H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2
- H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
- H401: Toxic to aquatic life; Acute Env Tox, Cat 2
- H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1
- H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**

Revision Changes:

- Section 01: Company Mailing Address information was modified.
- Section 05: Hazardous Combustion Products information was modified.
- Section 15: SARA (313) TOXIC RELEASE INVENTORY - Table information was modified.
- Section 15: Community RTK - Header information was modified.
- Composition: Component Table information was modified.
- Section 08: Biological Exposure Limits (ACG BEL) - Limit Header information was added.
- Section 16: Revision Information - Implementation of GHS requirements phrase. information was deleted.
- Section 08: Biological Exposure Limits (South Africa) - Limit Header information was deleted.

**THIS MSDS COVERS THE FOLLOWING MATERIALS:** DIESEL NO. 2 | ESSO DIESEL FUEL | EXXON DIESEL FUEL | LOW SULFUR DIESEL | MARINE DIESEL FUEL | MOBIL DIESEL FUEL | ULTRA LOW SULFUR DIESEL | WINTERIZED DIESEL FUEL

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 The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate

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and reliable as of the date issued. You can contact ExxonMobil to insure that this document is the most current available from ExxonMobil. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, re-publication or retransmission of this document, in whole or in part, is not permitted. The term, "ExxonMobil" is used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates in which they directly or indirectly hold any interest.

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Internal Use Only

MHC: 1A, 0B, 2, 0, 4, 1

PPEC: C

DGN: 7079307XUS (1012398)

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Gasoline  
By  
Exxon Mobile



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## SAFETY DATA SHEET

### SECTION 1

### PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT

**Product Name:** GASOLINE, UNLEADED AUTOMOTIVE

**Product Description:** Hydrocarbons and Additives

**Product Code:** 123455-20

**Intended Use:** Fuel, Gasoline

#### COMPANY IDENTIFICATION

**Supplier:**

**EXXON MOBIL CORPORATION**  
22777 Springwoods Village Parkway  
Spring, TX. 77253 USA

**24 Hour Health Emergency**

609-737-4411

**Transportation Emergency Phone**

800-424-9300 or 703-527-3887 CHEMTREC

**Product Technical Information**

800-662-4525

**MSDS Internet Address**

<http://www.exxon.com>, <http://www.mobil.com>

### SECTION 2

### HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

#### CLASSIFICATION:

Flammable liquid: Category 1.

Skin irritation: Category 2. Germ Cell Mutagen: Category 1B. Carcinogen: Category 1B. Specific target organ toxicant (central nervous system): Category 3. Aspiration toxicant: Category 1.

#### LABEL:

**Pictogram:**

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**Signal Word:** Danger

**Hazard Statements:**

H224: Extremely flammable liquid and vapor. H304: May be fatal if swallowed and enters airways. H315: Causes skin irritation. H336: May cause drowsiness or dizziness. H340: May cause genetic defects. H350: May cause cancer.

**Precautionary Statements:**

P101: If medical advice is needed, have product container or label at hand. P102: Keep out of reach of children. P103: Read label before use. P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P210: Keep away from heat/sparks/open flames/hot surfaces. -- No smoking. P233: Keep container tightly closed. P240: Ground / bond container and receiving equipment. P241: Use explosion-proof electrical, ventilating, and lighting equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P261: Avoid breathing mist / vapours. P264: Wash skin thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P308 + P313: IF exposed or concerned: Get medical advice/ attention. P312: Call a POISON CENTER or doctor/physician if you feel unwell. P331: Do NOT induce vomiting. P332 + P313: If skin irritation occurs: Get medical advice/ attention. P362 + P364: Take off contaminated clothing and wash it before reuse. P370 + P378: In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish. P391: Collect spillage. P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P403 + P235: Store in a well-ventilated place. Keep cool. P405: Store locked up. P501: Dispose of contents and container in accordance with local regulations.

**Contains:** GASOLINE

**Other hazard information:**

**HAZARD NOT OTHERWISE CLASSIFIED (HNOC):** None as defined under 29 CFR 1910.1200.

**PHYSICAL / CHEMICAL HAZARDS**

Material can accumulate static charges which may cause an ignition. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited.

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## HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. May be irritating to the eyes, nose, throat, and lungs. Exposure to benzene is associated with cancer (acute myeloid leukemia and myelodysplastic syndrome), damage to the blood-producing system, and serious blood disorders (see Section 11).

## ENVIRONMENTAL HAZARDS

Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

**NFPA Hazard ID:** Health: 1 Flammability: 3 Reactivity: 0  
**HMIS Hazard ID:** Health: 1\* Flammability: 3 Reactivity: 0

**NOTE:** This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

<b>SECTION 3</b>	<b>COMPOSITION / INFORMATION ON INGREDIENTS</b>
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This material is defined as a mixture.

### Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
ETHYL ALCOHOL	64-17-5	< 11%	H225, H319(2A)
GASOLINE	86290-81-5	89 - 100%	H224, H304, H336, H340(1B), H350(1B), H315, H401, H411

### Hazardous Constituent(s) Contained in Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
BENZENE	71-43-2	<= 1.65%	H225, H303, H304, H340(1B), H350(1A), H315, H319(2A), H372, H401
ETHYL BENZENE	100-41-4	1 - 5%	H225, H332, H373, H401, H412
N-HEXANE	110-54-3	1 - 5%	H225, H304, H336, H361(F), H315, H373, H401, H411
NAPHTHALENE	91-20-3	<1%	H302, H351, H400(M factor 1), H410(M factor 1)
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)	95-63-6	1 - 5%	H226, H332, H335, H315, H319(2A), H401, H411
TOLUENE	108-88-3	5 - 10%	H225, H304, H336,

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			H315, H373, H401, H412
TRIMETHYL BENZENE	25551-13-7	1 - 5%	H226, H315
XYLENES	1330-20-7	5 - 10%	H226, H304, H312, H332, H335, H315, H320(2B), H373, H401

\* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

NOTE: The concentration of the components shown above may vary substantially. In certain countries, benzene content may be limited to lower levels. Oxygenates such as tertiary-amyl-methyl ether, ethanol, di-isopropyl ether, and ethyl-tertiary-butyl ether may be present. Because of volatility considerations, gasoline vapor may have concentrations of components very different from those of liquid gasoline. The major components of gasoline vapor are: butane, isobutane, pentane, and isopentane. The reportable component percentages, shown in the composition/information on ingredients section, are based on API's evaluation of a typical gasoline mixture. Oxygenates may be present up to the maximum permitted by European Standard EN228. Motor gasoline is considered a mixture by EPA under the Toxic Substances Control Act (TSCA). The refinery streams used to blend motor gasoline are all on the TSCA Chemical Substances Inventory.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

## SECTION 4 FIRST AID MEASURES

### INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

### SKIN CONTACT

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

### EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

### INGESTION

Seek immediate medical attention. Do not induce vomiting.

### NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

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This light hydrocarbon material, or a component, may be associated with cardiac sensitization following very high exposures (well above occupational exposure limits) or with concurrent exposure to high stress levels or heart-stimulating substances like epinephrine. Administration of such substances should be avoided.

## SECTION 5 FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

**Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight Streams of Water

### FIRE FIGHTING

**Fire Fighting Instructions:** Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

**Unusual Fire Hazards:** Extremely Flammable. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

**Hazardous Combustion Products:** Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

### FLAMMABILITY PROPERTIES

**Flash Point [Method]:** <-40°C (-40°F) [ASTM D-56]

**Flammable Limits (Approximate volume % in air):** LEL: 1.4 UEL: 7.6

**Autoignition Temperature:** >250°C (482°F)

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

### PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on

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the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H<sub>2</sub>S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

## SPILL MANAGEMENT

**Land Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

**Water Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Do not confine in area of spill. Advise occupants and shipping in downwind areas of fire and explosion hazard and warn them to stay clear. Allow liquid to evaporate from the surface. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

## ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

## SECTION 7

## HANDLING AND STORAGE

### HANDLING

Avoid all personal contact. Prevent exposure to ignition sources, for example use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Do not siphon by mouth. Use only with adequate ventilation. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only. It is dangerous and/or unlawful to put fuel into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapors and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) in or around any fueling operation or storage area unless the devices are certified

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intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

**Static Accumulator:** This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

## STORAGE

Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. The type of container used to store the material may affect static accumulation and dissipation. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Outside or detached storage preferred. Keep away from incompatible materials. Storage containers should be grounded and bonded. Fixed storage containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge.

<b>SECTION 8</b>	<b>EXPOSURE CONTROLS / PERSONAL PROTECTION</b>
------------------	--

## EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard		NOTE	Source
BENZENE		OSHA Action level	0.5 ppm		OSHA Sp.Reg.
BENZENE		STEL	5 ppm		OSHA Sp.Reg.
BENZENE		TWA	1 ppm		OSHA Sp.Reg.
BENZENE		STEL	1 ppm		ExxonMobil
BENZENE		TWA	0.5 ppm		ExxonMobil
BENZENE		STEL	2.5 ppm	Skin	ACGIH
BENZENE		TWA	0.5 ppm	Skin	ACGIH
ETHYL ALCOHOL		TWA	1900 mg/m3	1000 ppm	N/A
ETHYL ALCOHOL		STEL	1000 ppm		N/A
ETHYL BENZENE		TWA	435 mg/m3	100 ppm	N/A
					OSHA Z1

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ETHYL BENZENE		TWA	20 ppm		N/A	ACGIH
GASOLINE		STEL	200 ppm		N/A	ExxonMobil
GASOLINE		TWA	100 ppm		N/A	ExxonMobil
GASOLINE		STEL	500 ppm		N/A	ACGIH
GASOLINE		TWA	300 ppm		N/A	ACGIH
N-HEXANE		TWA	1800 mg/m <sup>3</sup>	500 ppm	N/A	OSHA Z1
N-HEXANE		TWA	50 ppm		Skin	ACGIH
NAPHTHALENE		TWA	50 mg/m <sup>3</sup>	10 ppm	N/A	OSHA Z1
NAPHTHALENE		TWA	10 ppm		Skin	ACGIH
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)		TWA	25 ppm		N/A	ACGIH
TOLUENE		Ceiling	300 ppm		N/A	OSHA Z2
TOLUENE		Maximum concentration	500 ppm		N/A	OSHA Z2
TOLUENE		TWA	200 ppm		N/A	OSHA Z2
TOLUENE		TWA	20 ppm		N/A	ACGIH
TRIMETHYL BENZENE		TWA	25 ppm		N/A	ACGIH
XYLENES		TWA	435 mg/m <sup>3</sup>	100 ppm	N/A	OSHA Z1
XYLENES		STEL	150 ppm		N/A	ACGIH
XYLENES		TWA	100 ppm		N/A	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

### Biological limits

Substance	Specimen	Sampling Time	Limit	Determinant	Source
BENZENE	Creatinine in urine	End of shift	500 ug/g	t,t-Muconic acid	ACGIH BELs (BEIs)
BENZENE	Creatinine in urine	End of shift	25 ug/g	S-Phenylmercapturic acid	ACGIH BELs (BEIs)
ETHYL BENZENE	Creatinine in urine	End of shift	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	ACGIH BELs (BEIs)
N-HEXANE	Urine	End of shift at end of work wk	0.4 mg/l	2,5-Hexanedion, without hydrolysis	ACGIH BELs (BEIs)
NAPHTHALENE	No Biological Specimen provided	End of shift	Not Assigned	1-Naphthol, with hydrolysis + 2-Naphthol, with hydrolysis	ACGIH BELs (BEIs)
TOLUENE	Blood	Prior to last shift of work wk	0.02 mg/l	Toluene	ACGIH BELs (BEIs)
TOLUENE	Creatinine in urine	End of shift	0.3 mg/g	o-Cresol, with hydrolysis	ACGIH BELs (BEIs)



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TOLUENE	Urine	End of shift	0.03 mg/l	Toluene	ACGIH BELs (BEIs)
XYLENES	Creatinine in urine	End of shift	1.5 g/g	Methylhippuric acids	ACGIH BELs (BEIs)

## ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

## PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:** If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Half-face filter respirator

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

**Hand Protection:** Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended.

**Eye Protection:** If contact is likely, safety glasses with side shields are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

Chemical/oil resistant clothing is recommended.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

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## ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**Note:** Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

### GENERAL INFORMATION

**Physical State:** Liquid  
**Color:** Clear (May Be Dyed)  
**Odor:** Petroleum/Solvent  
**Odor Threshold:** N/D

### IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Relative Density (at 15 °C):** 0.74  
**Density (at 15 °C):** 720 kg/m<sup>3</sup> (6.01 lbs/gal, 0.72 kg/dm<sup>3</sup>) - 758 kg/m<sup>3</sup> (6.33 lbs/gal, 0.76 kg/dm<sup>3</sup>)  
**Flammability (Solid, Gas):** N/A  
**Flash Point [Method]:** <-40°C (-40°F) [ASTM D-56]  
**Flammable Limits (Approximate volume % in air):** LEL: 1.4 UEL: 7.6  
**Autoignition Temperature:** >250°C (482°F)  
**Boiling Point / Range:** > 20°C (68°F)  
**Decomposition Temperature:** N/D  
**Vapor Density (Air = 1):** 3 at 101 kPa  
**Vapor Pressure:** > 26.6 kPa (200 mm Hg) at 20 °C  
**Evaporation Rate (n-butyl acetate = 1):** > 10  
**pH:** N/A  
**Log Pow (n-Octanol/Water Partition Coefficient):** > 3  
**Solubility in Water:** Negligible  
**Viscosity:** <1 cSt (1 mm<sup>2</sup>/sec) at 40 °C  
**Oxidizing Properties:** See Hazards Identification Section.

### OTHER INFORMATION

**Freezing Point:** N/D  
**Melting Point:** N/A

## SECTION 10 STABILITY AND REACTIVITY

**REACTIVITY:** See sub-sections below.

**STABILITY:** Material is stable under normal conditions.

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**CONDITIONS TO AVOID:** None

**MATERIALS TO AVOID:** Alkalies, Halogens, Strong Acids, Strong oxidizers

**HAZARDOUS DECOMPOSITION PRODUCTS:** Material does not decompose at ambient temperatures.

**POSSIBILITY OF HAZARDOUS REACTIONS:** Hazardous polymerization will not occur.

<b>SECTION 11</b>	<b>TOXICOLOGICAL INFORMATION</b>
-------------------	----------------------------------

**INFORMATION ON TOXICOLOGICAL EFFECTS**

<b>Hazard Class</b>	<b>Conclusion / Remarks</b>
<b>Inhalation</b>	
Acute Toxicity: (Rat) 4 hour(s) LC50 > 5000 mg/m3 (Vapor)	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 403
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.
<b>Ingestion</b>	
Acute Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 401
<b>Skin</b>	
Acute Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 402
Skin Corrosion/Irritation (Rabbit): Data available.	Irritating to the skin. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 404
<b>Eye</b>	
Serious Eye Damage/Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405
<b>Sensitization</b>	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: Data available.	Not expected to be a skin sensitizer. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 406
<b>Aspiration:</b> Data available.	May be fatal if swallowed and enters airways. Based on physico-chemical properties of the material.
<b>Germ Cell Mutagenicity:</b> Data available.	Caused genetic effects in laboratory animals, but the relevance to humans is uncertain. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 471 475 476
<b>Carcinogenicity:</b> Data available.	Caused cancer in laboratory animals. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 451
<b>Reproductive Toxicity:</b> Data available.	Not expected to be a reproductive toxicant. Based on test data for

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	structurally similar materials. Test(s) equivalent or similar to OECD Guideline 416 421
<b>Lactation:</b> No end point data for material.	Not expected to cause harm to breast-fed children.
<b>Specific Target Organ Toxicity (STOT)</b>	
Single Exposure: No end point data for material.	May cause drowsiness or dizziness.
Repeated Exposure: Data available.	Not expected to cause organ damage from prolonged or repeated exposure. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 410 412 453

## TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
ETHYL BENZENE	Inhalation Lethality: 4 hour(s) LC50 17.8 mg/l (Vapor) (Rat); Oral Lethality: LD50 3.5 g/kg (Rat)
NAPHTHALENE	Inhalation Lethality: 4 hour(s) LC50 > 0.4 mg/l (Max attainable vapor conc.) (Rat); Oral Lethality: LD50 533 mg/kg (Mouse)

## OTHER INFORMATION

### For the product itself:

Laboratory animal studies have shown that prolonged and repeated inhalation exposure to light hydrocarbon vapors in the same boiling range as this product can produce adverse kidney effects in male rats. However, these effects were not observed in similar studies with female rats, male and female mice, or in limited studies with other animal species. Additionally, in a number of human studies, there was no clinical evidence of such effects at normal occupational levels. In 1991, The U.S. EPA determined that the male rat kidney is not useful for assessing human risk.

Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects.

Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema. Very high exposure (confined spaces / abuse) to light hydrocarbons may result in abnormal heart rhythm (arrhythmias). Concurrent high stress levels and/or co-exposure to high levels of hydrocarbons (above occupational exposure limits), and to heart-stimulating substances like epinephrine, nasal decongestants, asthma drugs, or cardiovascular drugs may initiate arrhythmias.

Gasoline unleaded: Caused cancer in animal tests. Chronic inhalation studies resulted in liver tumors in female mice and kidney tumors in male rats. Neither result considered significant for human health risk assessment by the United States EPA and others. Did not cause mutations In Vitro or In Vivo. Negative in inhalation developmental studies and reproductive tox studies. Inhalation of high concentrations in animals resulted in reversible central nervous system depression, but no persistent toxic effect on the nervous system. Non-sensitizing in test animals. Caused nerve damage in humans from abusive use (sniffing).

### Contains:

**BENZENE:** Caused cancer (acute myeloid leukemia and myelodysplastic syndrome), damage to the blood-producing system, and serious blood disorders in human studies. Caused genetic effects and effects on the immune system in laboratory animal and some human studies. Caused toxicity to the fetus and cancer in laboratory animal studies.

**ETHANOL:** Prolonged or repeated exposure to high concentrations of ethanol vapor or overexposure by ingestion may produce adverse effects to brain, kidney, liver, and reproductive organs, birth defects in offspring, and developmental toxicity in offspring.

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**NAPHTHALENE:** Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain.

**N-HEXANE:** Prolonged and/or repeated exposures to n-Hexane can cause progressive and potentially irreversible damage to the peripheral nervous system (e.g. fingers, feet, arms, legs, etc.). Simultaneous exposure to Methyl Ethyl Ketone (MEK) or Methyl Isobutyl Ketone (MIBK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system. n-Hexane has been shown to cause testicular damage at high doses in male rats. The relevance of this effect for humans is unknown.

**TOLUENE :** Concentrated, prolonged or deliberate inhalation may cause brain and nervous system damage. Prolonged and repeated exposure of pregnant animals (> 1500 ppm) have been reported to cause adverse fetal developmental effects.

**TRIMETHYLBENZENE:** Long-term inhalation exposure of trimethylbenzene caused effects to the blood in laboratory animals.

**ETHYLBENZENE:** Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
BENZENE	71-43-2	1, 3, 6
ETHYL BENZENE	100-41-4	5
GASOLINE	86290-81-5	5
NAPHTHALENE	91-20-3	2, 5

--REGULATORY LISTS SEARCHED--

1 = NTP CARC  
2 = NTP SUS

3 = IARC 1  
4 = IARC 2A

5 = IARC 2B  
6 = OSHA CARC

## SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

### ECOTOXICITY

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

### MOBILITY

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

Less volatile component -- Low solubility and floats and is expected to migrate from water to the land. Expected

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to partition to sediment and wastewater solids.

## PERSISTENCE AND DEGRADABILITY

### Biodegradation:

Majority of components -- Expected to be inherently biodegradable

### Atmospheric Oxidation:

More volatile component -- Expected to degrade rapidly in air

## BIOACCUMULATION POTENTIAL

Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

## SECTION 13

## DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

### DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

### REGULATORY DISPOSAL INFORMATION

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY, TCLP (BENZENE)

**Empty Container Warning** Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. **DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.**

## SECTION 14

## TRANSPORT INFORMATION

### LAND (DOT)

Proper Shipping Name: GASOLINE

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**Hazard Class & Division:** 3  
**ID Number:** 1203  
**Packing Group:** II  
**Marine Pollutant:** Yes  
**ERG Number:** 128  
**Label(s):** 3  
**Transport Document Name:** UN1203, GASOLINE, 3, PG II, MARINE POLLUTANT

#### LAND (TDG)

**Proper Shipping Name:** GASOLINE  
**Hazard Class & Division:** 3  
**UN Number:** 1203  
**Packing Group:** II  
**Special Provisions:** 17

#### SEA (IMDG)

**Proper Shipping Name:** MOTOR SPIRIT or GASOLINE or PETROL  
**Hazard Class & Division:** 3  
**EMS Number:** F-E, S-E  
**UN Number:** 1203  
**Packing Group:** II  
**Marine Pollutant:** Yes  
**Label(s):** 3  
**Transport Document Name:** UN1203, MOTOR SPIRIT or GASOLINE or PETROL, 3, PG II, (-40°C c.c.), MARINE POLLUTANT

#### AIR (IATA)

**Proper Shipping Name:** MOTOR SPIRIT or GASOLINE or PETROL  
**Hazard Class & Division:** 3  
**UN Number:** 1203  
**Packing Group:** II  
**Label(s) / Mark(s):** 3  
**Transport Document Name:** UN1203, GASOLINE, 3, PG II

### SECTION 15

### REGULATORY INFORMATION

**OSHA HAZARD COMMUNICATION STANDARD:** This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

**Listed or exempt from listing/notification on the following chemical inventories:** AICS, DSL, ENCS, KECI, PICCS, TSCA

**SARA 302:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

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**CERCLA:** This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

**SARA (311/312) REPORTABLE HAZARD CATEGORIES:** Fire. Immediate Health. Delayed Health.

**SARA (313) TOXIC RELEASE INVENTORY:**

Chemical Name	CAS Number	Typical Value
BENZENE	71-43-2	<= 1.65%
ETHYL BENZENE	100-41-4	1 - 5%
N-HEXANE	110-54-3	1 - 5%
NAPHTHALENE	91-20-3	<1%
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)	95-63-6	1 - 5%
TOLUENE	108-88-3	5 - 10%
XYLENES	1330-20-7	5 - 10%

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
BENZENE	71-43-2	1, 2, 4, 10, 11, 13, 15, 16, 17, 18, 19
ETHYL ALCOHOL	64-17-5	1, 4, 13, 16, 17, 18
ETHYL BENZENE	100-41-4	1, 4, 10, 13, 16, 17, 18, 19
GASOLINE	86290-81-5	1, 18
N-HEXANE	110-54-3	1, 4, 13, 16, 17, 18, 19
NAPHTHALENE	91-20-3	1, 4, 10, 17, 19
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)	95-63-6	1, 13, 16, 17, 18, 19
TOLUENE	108-88-3	1, 4, 11, 13, 15, 16, 17, 18, 19
TRIMETHYL BENZENE	25551-13-7	1, 13, 16, 17, 18
XYLENES	1330-20-7	1, 4, 13, 15, 16, 17, 18, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive



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## SECTION 16

## OTHER INFORMATION

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product.

N/D = Not determined, N/A = Not applicable

### KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):

H224: Extremely flammable liquid and vapor; Flammable Liquid, Cat 1  
H225: Highly flammable liquid and vapor; Flammable Liquid, Cat 2  
H226: Flammable liquid and vapor; Flammable Liquid, Cat 3  
H302: Harmful if swallowed; Acute Tox Oral, Cat 4  
H303: May be harmful if swallowed; Acute Tox Oral, Cat 5  
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1  
H312: Harmful in contact with skin; Acute Tox Dermal, Cat 4  
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2  
H319(2A): Causes serious eye irritation; Serious Eye Damage/Irr, Cat 2A  
H320(2B): Causes eye irritation; Serious Eye Damage/Irr, Cat 2B  
H332: Harmful if inhaled; Acute Tox Inh, Cat 4  
H335: May cause respiratory irritation; Target Organ Single, Resp Irr  
H336: May cause drowsiness or dizziness; Target Organ Single, Narcotic  
H340(1B): May cause genetic defects; Germ Cell Mutagenicity, Cat 1B  
H350(1A): May cause cancer; Carcinogenicity, Cat 1A  
H350(1B): May cause cancer; Carcinogenicity, Cat 1B  
H351: Suspected of causing cancer; GHS Carcinogenicity, Cat 2  
H361(D): Suspected of damaging the unborn child; Repro Tox, Cat 2 (Develop)  
H361(F): Suspected of damaging fertility; Repro Tox, Cat 2 (Fertility)  
H372: Causes damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 1  
H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2  
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1  
H401: Toxic to aquatic life; Acute Env Tox, Cat 2  
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1  
H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2  
H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3

### THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Section 06: Accidental Release - Spill Management - Water information was modified.  
Section 06: Protective Measures information was modified.  
Section 07: Handling and Storage - Handling information was modified.  
Section 07: Handling and Storage - Storage Phrases information was modified.  
Section 08: Biological Exposure Limits (ACG BEL) Table information was modified.  
Section 10: Materials to Avoid information was modified.

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Section 11: Chronic Tox - Component information was modified.

Section 11: Other Health Effects information was modified.

**THIS MSDS COVERS THE FOLLOWING MATERIALS:** ESSO EXTRA MIDGRADE UNLEADED | ESSO MIDGRADE UNLEADED | ESSO PREMIUM UNLEADED | ESSO REGULAR UNLEADED | ESSO SUPER PREMIUM UNLEADED | EXXON MIDGRADE UNLEADED | EXXON PREMIUM UNLEADED | EXXON REGULAR UNLEADED | GASOLINE | INDOLINE GASOLINE | MIDGRADE UNLEADED | MOBIL EXTRA UNLEADED | MOBIL REGULAR UNLEADED | MOBIL SPECIAL UNLEADED | MOBIL SUPER UNLEADED | PREMIUM UNLEADED | REGULAR UNLEADED | UNLEADED GASOLINE

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MHC: 1A, 0B, 0, 0, 4, 1

PPEC: CF

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Coah

Scotchkote Coating 323i (A)

By

3M



## Safety Data Sheet

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<b>Document Group:</b>	17-9058-3	<b>Version Number:</b>	8.02
<b>Issue Date:</b>	10/24/15	<b>Supersedes Date:</b>	11/05/14

### Product identifier

3M™ Scotchmate™ Liquid Epoxy Coating 323i, Patch Compound, Brush Grade and Spray Grade

### ID Number(s):

80-6116-1464-7, 80-6300-0085-1, 80-6300-0086-9, 80-6300-0107-3, 80-6300-0180-0

### Recommended use

Coating, Coating for metal

### Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	Electrical Markets Division
<b>ADDRESS:</b>	3M Center, St. Paul, MN 55144-1000, USA
<b>Telephone:</b>	1-888-3M HELPS (1-888-364-3577)

### Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

**This product is a kit or a multipart product which consists of multiple, independently packaged components. A Safety Data Sheet (SDS), Article Information Sheet (AIS), or Article Information Letter (AIL) for each of these components is included. Please do not separate the component documents from this cover page. The document numbers for components of this product are:**

17-9028-6, 17-9020-3

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○ Scotchkote Coating 323i (B)

By

3M



## Safety Data Sheet

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<b>Document Group:</b>	17-9020-3	<b>Version Number:</b>	8.01
<b>Issue Date:</b>	10/24/15	<b>Supersedes Date:</b>	04/21/14

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotchkote™ Liquid Epoxy Coating 323i, Patch Compound, Brush Grade and Spray Grade (Part A)

#### Product Identification Numbers

80-6300-0099-2, 80-6300-0101-6

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Coating, Part A of a 2 Part Epoxy Coating System

#### 1.3. Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	Electrical Markets Division
<b>ADDRESS:</b>	3M Center, St. Paul, MN 55144-1000, USA
<b>Telephone:</b>	1-888-3M HELPS (1-888-364-3577)

#### 1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

### SECTION 2: Hazard identification

#### 2.1. Hazard classification

Serious Eye Damage/Irritation: Category 2B.

Skin Sensitizer: Category 1.

Carcinogenicity: Category 2.

Specific Target Organ Toxicity (repeated exposure): Category 1.

#### 2.2. Label elements

##### Signal word

Danger

##### Symbols

Exclamation mark | Health Hazard |

##### Pictograms





**Hazard Statements**

Causes eye irritation  
 May cause an allergic skin reaction.  
 Suspected of causing cancer.

Causes damage to organs through prolonged or repeated exposure:  
 respiratory system |

**Precautionary Statements**

**Prevention:**

Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Do not breathe dust/fume/gas/mist/vapors/spray.  
 Wear protective gloves.  
 Do not eat, drink or smoke when using this product.  
 Wash thoroughly after handling.  
 Contaminated work clothing must not be allowed out of the workplace.

**Response:**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
 Continue rinsing.  
 If eye irritation persists: Get medical advice/attention.  
 IF ON SKIN: Wash with plenty of soap and water.  
 If skin irritation or rash occurs: Get medical advice/attention.  
 Wash contaminated clothing before reuse.  
 IF exposed or concerned: Get medical advice/attention.

**Storage:**

Store locked up.

**Disposal:**

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

**2.3. Hazards not otherwise classified**

None.

**SECTION 3: Composition/information on ingredients**

Ingredient	C.A.S. No.	% by Wt
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	25068-38-6	60 - 70 Trade Secret *
HYDROUS MAGNESIUM SILICATE	14807-96-6	20 - 30 Trade Secret *
TITANIUM DIOXIDE	13463-67-7	1 - 5 Trade Secret *
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-95-6	< 1 Trade Secret *

\*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

#### Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

#### Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

#### If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

### 4.3. Indication of any immediate medical attention and special treatment required

Not applicable

## SECTION 5: Fire-fighting measures

### 5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

### 5.2. Special hazards arising from the substance or mixture

Closed containers exposed to heat from fire may build pressure and explode.

### Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Aldehydes	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion
Oxides of Nitrogen	During Combustion

### 5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

### 6.2. Environmental precautions

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

**6.3. Methods and material for containment and cleaning up**

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

Avoid eye contact. Avoid breathing of vapors created during cure cycle. Avoid skin contact with hot material. Avoid breathing of dust created by cutting, sanding, grinding or machining. For industrial or professional use only. Do not use in a confined area with minimal air exchange. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

**7.2. Conditions for safe storage including any incompatibilities**

Store away from acids. Store away from oxidizing agents.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
TITANIUM DIOXIDE	13463-67-7	CMRG	TWA(as respirable dust):5 mg/m3	
TITANIUM DIOXIDE	13463-67-7	OSHA	TWA(as total dust):15 mg/m3	
TITANIUM DIOXIDE	13463-67-7	ACGIH	TWA:10 mg/m3	A4: Not class. as human carcin
HYDROUS MAGNESIUM SILICATE	14807-96-6	OSHA	TWA concentration(as total dust):0.3 mg/m3;TWA concentration(respirable):0.1 mg/m3(2.4 millions of particles/cu. ft.);TWA:20 millions of particles/cu. ft.	
HYDROUS MAGNESIUM SILICATE	14807-96-6	CMRG	TWA(as respirable dust):0.5 mg/m3	
HYDROUS MAGNESIUM SILICATE	14807-96-6	ACGIH	TWA(respirable fraction):2 mg/m3	A4: Not class. as human carcin
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-95-6	CMRG	TWA:50 ppm(245 mg/m3)	

ACGIH : American Conference of Governmental Industrial Hygienists  
 AIHA : American Industrial Hygiene Association  
 CMRG : Chemical Manufacturer's Recommended Guidelines  
 OSHA : United States Department of Labor - Occupational Safety and Health Administration  
 TWA : Time-Weighted-Average  
 STEL : Short Term Exposure Limit

CEIL: Ceiling

## 8.2. Exposure controls

### 8.2.1. Engineering controls

Provide ventilated enclosure for heat curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

### 8.2.2. Personal protective equipment (PPE)

#### Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Full Face Shield  
Indirect Vented Goggles

#### Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Polymer laminate

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

#### Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

#### Thermal hazards

Wear heat insulating gloves when handling hot material to prevent thermal burns.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Specific Physical Form:	Viscous
Odor, Color, Grade:	White Viscous Liquid
Odor threshold	No Data Available
pH	No Data Available
Melting point	Not Applicable
Boiling Point	> 200 °F [Test Method: Estimated]
Flash Point	> 200 °F [Test Method: Tagliabue Closed Cup]
Evaporation rate	< 1 [Ref Std: BUOAC=1]
Flammability (solid, gas)	Not Applicable

Flammable Limits(LEL)	1 %
Flammable Limits(UEL)	7 %
Vapor Pressure	No Data Available
Vapor Density	> 1 [Ref Std: AIR=1]
Density	No Data Available
Specific Gravity	1.43 [Test Method: Tested per ASTM protocol] [Ref Std: WATER=1]
Solubility in Water	Negligible
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	No Data Available
Autoignition temperature	No Data Available
Decomposition temperature	No Data Available
Viscosity	No Data Available
Hazardous Air Pollutants	No Data Available
Volatile Organic Compounds	11 g/l [Test Method: tested per EPA method 24] [Details: Results for mixture of Parts A and B as reacted.]

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

This material is considered to be non reactive under normal use conditions.

### 10.2. Chemical stability

Stable.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Sparks and/or flames

### 10.5. Incompatible materials

Strong oxidizing agents  
Reducing agents  
Strong acids

### 10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

## SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

### 11.1. Information on Toxicological effects

#### Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

**Inhalation:**

Vapors from heated material may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Vapors released during curing may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

**Skin Contact:**

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

**Eye Contact:**

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

**Ingestion:**

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

**Additional Health Effects:**

**Prolonged or repeated exposure may cause target organ effects:**

Pneumoconiosis: Sign/symptoms may include persistent cough, breathlessness, chest pain, increased amounts of sputum, and changes in lung function tests.

**Carcinogenicity:**

Contains a chemical or chemicals which can cause cancer.

Ingredient	CAS No.	Class Description	Regulation
TITANIUM DIOXIDE	13463-67-7	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

**Toxicological Data**

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

**Acute Toxicity**

Name	Route	Species	Value
Overall product	Ingestion		No data available, calculated ATE > 5,000 mg/kg
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Ingestion	Rat	LD50 > 1,000 mg/kg
HYDROUS MAGNESIUM SILICATE	Dermal		LD50 estimated to be > 5,000 mg/kg
HYDROUS MAGNESIUM SILICATE	Ingestion		LD50 estimated to be > 5,000 mg/kg
TITANIUM DIOXIDE	Dermal	Rabbit	LD50 > 10,000 mg/kg
TITANIUM DIOXIDE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
TITANIUM DIOXIDE	Ingestion	Rat	LD50 > 10,000 mg/kg
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Dermal	Rabbit	LD50 > 2,000 mg/kg
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation-Vapor (4 hours)	Rat	LC50 > 5.2 mg/l
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Rabbit	Mild irritant
HYDROUS MAGNESIUM SILICATE	Rabbit	No significant irritation
TITANIUM DIOXIDE	Rabbit	No significant irritation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Rabbit	Irritant

**Serious Eye Damage/Irritation**

Name	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Rabbit	Moderate irritant
HYDROUS MAGNESIUM SILICATE	Rabbit	No significant irritation
TITANIUM DIOXIDE	Rabbit	No significant irritation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Rabbit	Mild irritant

**Skin Sensitization**

Name	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Human and animal	Sensitizing
TITANIUM DIOXIDE	Human and animal	Not sensitizing
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Guinea pig	Not sensitizing

**Respiratory Sensitization**

Name	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Human	Some positive data exist, but the data are not sufficient for classification
HYDROUS MAGNESIUM SILICATE	Human	Not sensitizing

**Germ Cell Mutagenicity**

Name	Route	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	In vivo	Not mutagenic
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	In Vitro	Some positive data exist, but the data are not sufficient for classification
HYDROUS MAGNESIUM SILICATE	In Vitro	Not mutagenic
HYDROUS MAGNESIUM SILICATE	In vivo	Not mutagenic
TITANIUM DIOXIDE	In Vitro	Not mutagenic
TITANIUM DIOXIDE	In vivo	Not mutagenic

**Carcinogenicity**

Name	Route	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
HYDROUS MAGNESIUM SILICATE	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
TITANIUM DIOXIDE	Ingestion	Multiple animal species	Not carcinogenic
TITANIUM DIOXIDE	Inhalation	Rat	Carcinogenic
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification

**Reproductive Toxicity****Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROXYDRIN POLYMER	Ingestion	Not toxic to female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROXYDRIN POLYMER	Ingestion	Not toxic to male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROXYDRIN POLYMER	Dermal	Not toxic to development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROXYDRIN POLYMER	Ingestion	Not toxic to development	Rat	NOAEL 750 mg/kg/day	2 generation
HYDROUS MAGNESIUM SILICATE	Ingestion	Not toxic to development	Rat	NOAEL 1,600 mg/kg	during organogenesis
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Not toxic to female reproduction	Rat	NOAEL 1,500 ppm	2 generation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Not toxic to male reproduction	Rat	NOAEL 1,500 ppm	2 generation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 500 ppm	2 generation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Professional judgement	NOAEL Not available	
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROXYDRIN POLYMER	Dermal	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	2 years
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROXYDRIN POLYMER	Dermal	nervous system	All data are negative	Rat	NOAEL 1,000 mg/kg/day	13 weeks
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROXYDRIN POLYMER	Ingestion	auditory system   heart   endocrine system   hematopoietic system   liver   eyes   kidney and/or bladder	All data are negative	Rat	NOAEL 1,000 mg/kg/day	28 days
HYDROUS MAGNESIUM SILICATE	Inhalation	pneumoconiosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
HYDROUS MAGNESIUM SILICATE	Inhalation	pulmonary fibrosis   respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 18 mg/m3	113 weeks
TITANIUM DIOXIDE	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for	Rat	LOAEL 0.01 mg/l	2 years



			classification			
TITANIUM DIOXIDE	Inhalation	pulmonary fibrosis	All data are negative	Human	NOAEL Not available	occupational exposure

**Aspiration Hazard**

Name	Value
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

**SECTION 12: Ecological information**

**Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

**Chemical fate information**

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

**SECTION 13: Disposal considerations**

**13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

**SECTION 14: Transport Information**

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

**SECTION 15: Regulatory information**

**15.1. US Federal Regulations**

Contact 3M for more information.

**311/312 Hazard Categories:**

Fire Hazard - No    Pressure Hazard - No    Reactivity Hazard - No    Immediate Hazard - Yes    Delayed Hazard - Yes

**15.2. State Regulations**

Contact 3M for more information.

### 15.3. Chemical Inventories

The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

### 15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

## SECTION 16: Other information

### NFPA Hazard Classification

Health: 2 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

### HMIS Hazard Classification

Health: \*2 Flammability: 1 Physical Hazard: 0 Personal Protection: X - See PPE section.

Hazardous Material Identification System (HMIS® IV) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® IV ratings are to be used with a fully implemented HMIS® IV program. HMIS® is a registered mark of the American Coatings Association (ACA).

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<b>Issue Date:</b>	10/24/15	<b>Supersedes Date:</b>	01/13/15

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotchkote™ Liquid Epoxy Coating 323i, Patch Compound, Brush Grade and Spray Grade (Part B)

#### Product Identification Numbers

80-6300-0100-8, 80-6300-0102-4

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Coating, Part B of a 2 Part Epoxy Coating System

#### 1.3. Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	Electrical Markets Division
<b>ADDRESS:</b>	3M Center, St. Paul, MN 55144-1000, USA
<b>Telephone:</b>	1-888-3M HELPS (1-888-364-3577)

#### 1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

### SECTION 2: Hazard identification

#### 2.1. Hazard classification

Acute Toxicity (oral): Category 4.  
Acute Toxicity (inhalation): Category 4.  
Serious Eye Damage/Irritation: Category 1.  
Skin Corrosion/Irritation: Category 1B.  
Skin Sensitizer: Category 1.  
Reproductive Toxicity: Category 2.  
Specific Target Organ Toxicity (respiratory irritation): Category 3.  
Specific Target Organ Toxicity (repeated exposure): Category 1.

#### 2.2. Label elements

##### Signal word

Danger

##### Symbols

Scotchkote Coating 323 (A)

By

3M

Corrosion | Exclamation mark | Health Hazard |

**Pictograms**



**Hazard Statements**

Harmful if swallowed.  
Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.  
Harmful if inhaled.  
May cause respiratory irritation.  
Suspected of damaging fertility or the unborn child.

Causes damage to organs through prolonged or repeated exposure:  
respiratory system |

**Precautionary Statements**

**Prevention:**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe dust/fume/gas/mist/vapors/spray.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves, protective clothing, and eye/face protection.  
Do not eat, drink or smoke when using this product.  
Wash thoroughly after handling.  
Contaminated work clothing must not be allowed out of the workplace.

**Response:**

IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
Immediately call a POISON CENTER or doctor/physician.  
If skin irritation or rash occurs: Get medical advice/attention.  
Wash contaminated clothing before reuse.  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

**Storage:**

Store in a well-ventilated place. Keep container tightly closed.  
Store locked up.

**Disposal:**

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

**2.3. Hazards not otherwise classified**

May cause chemical gastrointestinal burns.

1% of the mixture consists of ingredients of unknown acute oral toxicity.  
1% of the mixture consists of ingredients of unknown acute dermal toxicity.  
1% of the mixture consists of ingredients of unknown acute inhalation toxicity.

**SECTION 3: Composition/information on ingredients**

Ingredient	C.A.S. No.	% by Wt
P-TERT-BUTYLPHENOL	98-54-4	25 - 35 Trade Secret *
HYDROUS MAGNESIUM SILICATE	14807-96-6	20 - 30 Trade Secret *
M-XYLENE-ALPHA,ALPHA'-DIAMINE	1477-55-0	10 - 20 Trade Secret *
TRIMETHYLHEXAMETHYLENEDIAMINE	25620-58-0	10 - 20 Trade Secret *
PHENOL, 4-NONYL-, branched	84852-15-3	1 - 10 Trade Secret *
PHTHALO GREEN	1328-53-6	1 - 3 Trade Secret *
POLYAMIDE	Unknown	< 1.5 Trade Secret *
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-95-6	< 1 Trade Secret *

\*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

**SECTION 4: First aid measures****4.1. Description of first aid measures****Inhalation:**

Remove person to fresh air. If you feel unwell, get medical attention.

**Skin Contact:**

Immediately flush with large amounts of water for at least 15 minutes. Remove contaminated clothing. Get immediate medical attention. Wash clothing before reuse.

**Eye Contact:**

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

**If Swallowed:**

Rinse mouth. Do not induce vomiting. Get immediate medical attention.

**4.2. Most important symptoms and effects, both acute and delayed**

See Section 11.1. Information on toxicological effects.

**4.3. Indication of any immediate medical attention and special treatment required**

Not applicable

**SECTION 5: Fire-fighting measures****5.1. Suitable extinguishing media**

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

**5.2. Special hazards arising from the substance or mixture**

Closed containers exposed to heat from fire may build pressure and explode.

**Hazardous Decomposition or By-Products**

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Oxides of Nitrogen	During Combustion

**5.3. Special protective actions for fire-fighters**

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

**6.2. Environmental precautions**

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

**6.3. Methods and material for containment and cleaning up**

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

For industrial or professional use only. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

**7.2. Conditions for safe storage including any incompatibilities**

Store in a well-ventilated place. Keep container tightly closed. Store away from acids. Store away from oxidizing agents.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
COPPER COMPOUNDS	1328-53-6	ACGIH	TWA(as Cu dust or mist):1 mg/m <sup>3</sup> ;TWA(as Cu, fume):0.2 mg/m <sup>3</sup>	
M-XYLENE-ALPHA,ALPHA'-DIAMINE	1477-55-0	ACGIH	CEIL:0.1 mg/m <sup>3</sup>	Skin Notation
HYDROUS MAGNESIUM SILICATE	14807-96-6	ACGIH	TWA(respirable fraction):2 mg/m <sup>3</sup>	A4: Not class. as human carcin
HYDROUS MAGNESIUM SILICATE	14807-96-6	OSHA	TWA concentration(as total dust):0.3 mg/m <sup>3</sup> ;TWA	

			concentration(respirable):0.1 mg/m <sup>3</sup> (2.4 millions of particles/cu. ft.);TWA:20 millions of particles/cu. ft.
HYDROUS MAGNESIUM SILICATE	14807-96-6	CMRG	TWA(as respirable dust):0.5 mg/m <sup>3</sup>
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-95-6	CMRG	TWA:50 ppm(245 mg/m <sup>3</sup> )

ACGIH : American Conference of Governmental Industrial Hygienists  
 AIHA : American Industrial Hygiene Association  
 CMRG : Chemical Manufacturer's Recommended Guidelines  
 OSHA : United States Department of Labor - Occupational Safety and Health Administration  
 TWA : Time-Weighted-Average  
 STEL: Short Term Exposure Limit  
 CEIL: Ceiling

## 8.2. Exposure controls

### 8.2.1. Engineering controls

Provide ventilated enclosure for heat curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

### 8.2.2. Personal protective equipment (PPE)

#### Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Full Face Shield  
 Indirect Vented Goggles

#### Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Butyl Rubber

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron – Butyl rubber

#### Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties



General Physical Form:	Liquid
Specific Physical Form:	Viscous
Odor, Color, Grade:	Viscous Green Liquid
Odor threshold	<i>No Data Available</i>
pH	<i>No Data Available</i>
Melting point	<i>Not Applicable</i>
Boiling Point	446 °F
Flash Point	> 200 °F [ <i>Test Method:</i> Tagliabue Closed Cup]
Evaporation rate	<=1 [ <i>Ref Std:</i> BUOAC=1]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	1 %
Flammable Limits(UEL)	7 %
Vapor Pressure	<i>No Data Available</i>
Vapor Density	> 1 [ <i>Ref Std:</i> AIR=1]
Density	1.2 g/ml
Specific Gravity	1.2 [ <i>Ref Std:</i> WATER=1]
Solubility in Water	Negligible
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>No Data Available</i>
Viscosity	<i>No Data Available</i>
Volatile Organic Compounds	11 g/l [ <i>Test Method:</i> tested per EPA method 24] [ <i>Details:</i> Results for mixture of Parts A and B as reacted.]

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

This material is considered to be non reactive under normal use conditions.

### 10.2. Chemical stability

Stable.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

None known.

### 10.5. Incompatible materials

Strong oxidizing agents  
Reducing agents  
Strong acids

### 10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

## SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient

classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

**11.1. Information on Toxicological effects**

**Signs and Symptoms of Exposure**

Based on test data and/or information on the components, this material may produce the following health effects:

**Inhalation:**

Harmful if inhaled. Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

**Skin Contact:**

May be harmful in contact with skin.

Corrosive (Skin Burns): Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

May cause additional health effects (see below).

**Eye Contact:**

Corrosive (Eye Burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

**Ingestion:**

Harmful if swallowed. Gastrointestinal Corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain; nausea; vomiting; and diarrhea; blood in the feces and/or vomitus may also be seen.

May cause additional health effects (see below).

**Additional Health Effects:**

**Single exposure may cause target organ effects:**

Dermal Effects: Signs/symptoms may include changes in skin pigmentation and/or coloration.

**Prolonged or repeated exposure may cause target organ effects:**

Prolonged or repeated exposure by ingestion may cause:

Pneumoconiosis: Sign/symptoms may include persistent cough, breathlessness, chest pain, increased amounts of sputum, and changes in lung function tests.

**Reproductive/Developmental Toxicity:**

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

**Toxicological Data**

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

**Acute Toxicity**

Name	Route	Species	Value
Overall product	Dermal		No data available, calculated ATE 2,000 - 5,000

			mg/kg
Overall product	Inhalation-Dust/Mist(4 hr)		No data available; calculated ATE 1 - 5 mg/l
Overall product	Ingestion		No data available; calculated ATE 300 - 2,000 mg/kg
P-TERT-BUTYLPHENOL	Dermal	Rabbit	LD50 2,318 mg/kg
P-TERT-BUTYLPHENOL	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.6 mg/l
P-TERT-BUTYLPHENOL	Ingestion	Rat	LD50 4,000 mg/kg
HYDROUS MAGNESIUM SILICATE	Dermal		LD50 estimated to be > 5,000 mg/kg
HYDROUS MAGNESIUM SILICATE	Ingestion		LD50 estimated to be > 5,000 mg/kg
M-XYLENE-ALPHA,ALPHA'-DIAMINE	Dermal	Rabbit	LD50 > 2,000 mg/kg
M-XYLENE-ALPHA,ALPHA'-DIAMINE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 1.2 mg/l
M-XYLENE-ALPHA,ALPHA'-DIAMINE	Ingestion	Rat	LD50 980 mg/kg
TRIMETHYLHEXAMETHYLENEDIAMINE	Ingestion	Rat	LD50 910 mg/kg
PHENOL, 4-NONYL-, branched	Dermal	Rabbit	LD50 > 2,000 mg/kg
PHENOL, 4-NONYL-, branched	Ingestion	Rat	LD50 1,531 mg/kg
PHTHALO GREEN	Ingestion	Rat	LD50 > 5,000 mg/kg
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Dermal	Rabbit	LD50 > 2,000 mg/kg
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation-Vapor (4 hours)	Rat	LC50 > 5.2 mg/l
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

#### Skin Corrosion/Irritation

Name	Species	Value
P-TERT-BUTYLPHENOL	Rabbit	Irritant
HYDROUS MAGNESIUM SILICATE	Rabbit	No significant irritation
M-XYLENE-ALPHA,ALPHA'-DIAMINE	Rat	Corrosive
TRIMETHYLHEXAMETHYLENEDIAMINE	Not available	Corrosive
PHENOL, 4-NONYL-, branched	Rabbit	Corrosive
PHTHALO GREEN	Rabbit	No significant irritation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Rabbit	Irritant

#### Serious Eye Damage/Irritation

Name	Species	Value
P-TERT-BUTYLPHENOL	Rabbit	Corrosive
HYDROUS MAGNESIUM SILICATE	Rabbit	No significant irritation
M-XYLENE-ALPHA,ALPHA'-DIAMINE	Rabbit	Corrosive
TRIMETHYLHEXAMETHYLENEDIAMINE	Rabbit	Corrosive
PHENOL, 4-NONYL-, branched	Rabbit	Corrosive
PHTHALO GREEN	Rabbit	No significant irritation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Rabbit	Mild irritant

#### Skin Sensitization

Name	Species	Value
P-TERT-BUTYLPHENOL	Human and animal	Some positive data exist, but the data are not sufficient for classification
M-XYLENE-ALPHA,ALPHA'-DIAMINE	Guinea pig	Sensitizing
TRIMETHYLHEXAMETHYLENEDIAMINE	Guinea pig	Sensitizing
PHENOL, 4-NONYL-, branched	Guinea pig	Not sensitizing
PHTHALO GREEN	Guinea	Not sensitizing

LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	pig	Not sensitizing
	Guinea pig	

**Respiratory Sensitization**

Name	Species	Value
HYDROUS MAGNESIUM SILICATE	Human	Not sensitizing

**Germ Cell Mutagenicity**

Name	Route	Value
P-TERT-BUTYLPHENOL	In Vitro	Not mutagenic
HYDROUS MAGNESIUM SILICATE	In Vitro	Not mutagenic
HYDROUS MAGNESIUM SILICATE	In vivo	Not mutagenic
M-XYLENE-ALPHA,ALPHA'-DIAMINE	In Vitro	Not mutagenic
M-XYLENE-ALPHA,ALPHA'-DIAMINE	In vivo	Not mutagenic
TRIMETHYLHEXAMETHYLENEDIAMINE	In vivo	Not mutagenic
PHENOL, 4-NONYL-, branched	In Vitro	Not mutagenic
PHENOL, 4-NONYL-, branched	In vivo	Not mutagenic
PHTHALO GREEN	In Vitro	Some positive data exist, but the data are not sufficient for classification

**Carcinogenicity**

Name	Route	Species	Value
P-TERT-BUTYLPHENOL	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
HYDROUS MAGNESIUM SILICATE	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification

**Reproductive Toxicity**

**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
P-TERT-BUTYLPHENOL	Ingestion	Not toxic to male reproduction	Rat	NOAEL 600 mg/kg/day	2 generation
P-TERT-BUTYLPHENOL	Ingestion	Some positive female reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 600 mg/kg/day	2 generation
P-TERT-BUTYLPHENOL	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 70 mg/kg/day	2 generation
HYDROUS MAGNESIUM SILICATE	Ingestion	Not toxic to development	Rat	NOAEL 1,600 mg/kg	during organogenesis
M-XYLENE-ALPHA,ALPHA'-DIAMINE	Ingestion	Not toxic to female reproduction	Rat	NOAEL 450 mg/kg/day	1 generation
M-XYLENE-ALPHA,ALPHA'-DIAMINE	Ingestion	Not toxic to male reproduction	Rat	NOAEL 450 mg/kg	1 generation
M-XYLENE-ALPHA,ALPHA'-DIAMINE	Ingestion	Not toxic to development	Rat	NOAEL 450 mg/kg/day	1 generation
TRIMETHYLHEXAMETHYLENEDIAMINE	Ingestion	Not toxic to male reproduction	Rat	NOAEL 120 mg/kg/day	2 generation
TRIMETHYLHEXAMETHYLENEDIAMINE	Ingestion	Not toxic to development	Rat	NOAEL 120 mg/kg/day	2 generation
TRIMETHYLHEXAMETHYLENEDIAMINE	Ingestion	Some positive female reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 10 mg/kg/day	2 generation
PHENOL, 4-NONYL-, branched	Ingestion	Some positive male reproductive data exist, but the data are not sufficient for	Rat	NOAEL 400 mg/kg/day	28 days

		classification			
PHENOL, 4-NONYL-, branched	Ingestion	Toxic to female reproduction	official classification	NOAEL Not available	
PHENOL, 4-NONYL-, branched	Ingestion	Toxic to development	official classification	NOAEL Not available	
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Not toxic to female reproduction	Rat	NOAEL 1,500 ppm	2 generation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Not toxic to male reproduction	Rat	NOAEL 1,500 ppm	2 generation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 500 ppm	2 generation

**Lactation**

Name	Route	Species	Value
PHENOL, 4-NONYL-, branched	Ingestion	Rat	Does not cause effects on or via lactation

**Target Organ(s)**

**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
P-TERT-BUTYLPHENOL	Inhalation	respiratory irritation	May cause respiratory irritation	Rat	LOAEL 5.6 mg/l	4 hours
M-XYLENE-ALPHA,ALPHA'-DIAMINE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Not available	NOAEL Not available	
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Professional judgement	NOAEL Not available	
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
P-TERT-BUTYLPHENOL	Ingestion	endocrine system   liver   kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 600 mg/kg/day	2 generation
P-TERT-BUTYLPHENOL	Ingestion	blood	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 200 mg/kg	6 weeks
HYDROUS MAGNESIUM SILICATE	Inhalation	pneumoconiosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
HYDROUS MAGNESIUM SILICATE	Inhalation	pulmonary fibrosis   respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 18 mg/m3	113 weeks
M-XYLENE-ALPHA,ALPHA'-DIAMINE	Ingestion	endocrine system   blood   bone marrow	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 600 mg/kg/day	28 days
TRIMETHYLHEXAMETHYLENEDIAMINE	Ingestion	hematopoietic system   liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 180 mg/kg/day	13 weeks
PHENOL, 4-NONYL-, branched	Ingestion	endocrine system   hematopoietic system   liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 400 mg/kg/day	28 days

PHENOL, 4-NONYL-, branched	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 150 mg/kg/day	90 days
PHENOL, 4-NONYL-, branched	Ingestion	heart   bone, teeth, nails, and/or hair   immune system   muscles   nervous system   respiratory system	All data are negative	Rat	NOAEL 150 mg/kg/day	90 days

**Aspiration Hazard**

Name	Value
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

**SECTION 12: Ecological information**

**Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

**Chemical fate information**

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

**SECTION 13: Disposal considerations**

**13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

**SECTION 14: Transport Information**

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

**SECTION 15: Regulatory information**

**15.1. US Federal Regulations**

Contact 3M for more information.

**311/312 Hazard Categories:**

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

This material contains a chemical which requires export notification under TSCA Section 12[b]:

<u>Ingredient (Category if applicable)</u>	<u>C.A.S. No</u>	<u>Regulation</u>	<u>Status</u>
PHENOL, 4-NONYL-, branched (Phenol, 4-nonyl-, branched)	84852-15-3	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Proposed
PHENOL, 4-NONYL-, branched	84852-15-3	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Proposed

This material contains a chemical subject to a proposed EPA Significant New Use Rule (TSCA Section 5)

<u>Ingredient (Category if applicable)</u>	<u>C.A.S. No</u>	<u>Reference</u>
PHENOL, 4-NONYL-, branched	84852-15-3	79 FR 59186

### 15.2. State Regulations

Contact 3M for more information.

### 15.3. Chemical Inventories

The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

### 15.4. International Regulations

Contact 3M for more information.

**This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.**

## **SECTION 16: Other information**

#### NFPA Hazard Classification

**Health: 3 Flammability: 1 Instability: 0 Special Hazards: None**  
**Corrosive: Yes**

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

#### HMIS Hazard Classification

**Health: \*3 Flammability: 1 Physical Hazard: 0 Personal Protection: X - See PPE section.**

Hazardous Material Identification System (HMIS® IV) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® IV ratings are to be used with a fully implemented HMIS® IV program. HMIS® is a registered mark of the American Coatings Association (ACA).

<b>Document Group:</b>	17-9028-6	<b>Version Number:</b>	12.01
<b>Issue Date:</b>	10/24/15	<b>Supersedes Date:</b>	01/13/15

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○ Scotchkote Coating 323 (B)

By

3M



## Safety Data Sheet

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<b>Document Group:</b>	16-0158-2	<b>Version Number:</b>	15.00
<b>Issue Date:</b>	02/20/16	<b>Supersedes Date:</b>	02/16/16

### Product identifier

3M™ Scotchkote™ Liquid Epoxy Coating 323

### ID Number(s):

80-6300-0057-0, 80-6300-0058-8, 80-6300-0066-1, 80-6300-0164-4, 80-6300-0369-9

### Recommended use

Coating, Two part epoxy coating system

### Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	Electrical Markets Division
<b>ADDRESS:</b>	3M Center, St. Paul, MN 55144-1000, USA
<b>Telephone:</b>	1-888-3M HELPS (1-888-364-3577)

### Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

**This product is a kit or a multipart product which consists of multiple, independently packaged components. A Safety Data Sheet (SDS), Article Information Sheet (AIS), or Article Information Letter (AIL) for each of these components is included. Please do not separate the component documents from this cover page. The document numbers for components of this product are:**

16-0684-7, 16-0702-7

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## Safety Data Sheet

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<b>Document Group:</b>	16-0684-7	<b>Version Number:</b>	18.00
<b>Issue Date:</b>	02/20/16	<b>Supersedes Date:</b>	05/02/14

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotchkote™ Liquid Epoxy Coating 323 Part A

#### Product Identification Numbers

80-6116-1152-8, 80-6116-1509-9, 80-6300-0059-6, 80-6300-0061-2, 80-6300-0247-7

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Coating, Part A of 2 Part Liquid Epoxy Coating System

#### 1.3. Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	Electrical Markets Division
<b>ADDRESS:</b>	3M Center, St. Paul, MN 55144-1000, USA
<b>Telephone:</b>	1-888-3M HELPS (1-888-364-3577)

#### 1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

### SECTION 2: Hazard identification

#### 2.1. Hazard classification

Serious Eye Damage/Irritation: Category 2B.

Skin Sensitizer: Category 1.

Carcinogenicity: Category 2.

Specific Target Organ Toxicity (repeated exposure): Category 1.

#### 2.2. Label elements

Signal word

Danger

#### Symbols

Exclamation mark | Health Hazard |

#### Pictograms



**Hazard Statements**

Causes eye irritation  
 May cause an allergic skin reaction.  
 Suspected of causing cancer.

Causes damage to organs through prolonged or repeated exposure:  
 respiratory system |

**Precautionary Statements**

**Prevention:**

Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Do not breathe dust/fume/gas/mist/vapors/spray.  
 Wear protective gloves.  
 Do not eat, drink or smoke when using this product.  
 Wash thoroughly after handling.  
 Contaminated work clothing must not be allowed out of the workplace.

**Response:**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 If eye irritation persists: Get medical advice/attention.  
 IF ON SKIN: Wash with plenty of soap and water.  
 If skin irritation or rash occurs: Get medical advice/attention.  
 Wash contaminated clothing before reuse.  
 IF exposed or concerned: Get medical advice/attention.

**Storage:**

Store locked up.

**Disposal:**

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

**2.3. Hazards not otherwise classified**

None.

**SECTION 3: Composition/information on ingredients**

Ingredient	C.A.S. No.	% by Wt
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	25068-38-6	60 - 70 Trade Secret *
HYDROUS MAGNESIUM SILICATE	14807-96-6	20 - 30 Trade Secret *
TITANIUM DIOXIDE	13463-67-7	1 - 5 Trade Secret *
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-95-6	< 1 Trade Secret *

\*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

#### Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

#### Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

#### If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

### 4.3. Indication of any immediate medical attention and special treatment required

Not applicable

## SECTION 5: Fire-fighting measures

### 5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

### 5.2. Special hazards arising from the substance or mixture

Closed containers exposed to heat from fire may build pressure and explode.

### Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Aldehydes	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion
Irritant Vapors or Gases	During Combustion
Ammonia	During Combustion
Oxides of Nitrogen	During Combustion

### 5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

**6.2. Environmental precautions**

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

**6.3. Methods and material for containment and cleaning up**

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible.

**SECTION 7: Handling and storage****7.1. Precautions for safe handling**

Avoid breathing of vapors created during cure cycle. Avoid skin contact with hot material. For industrial or professional use only. Do not use in a confined area with minimal air exchange. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Use personal protective equipment (gloves, respirators, etc.) as required.

**7.2. Conditions for safe storage including any incompatibilities**

Keep container tightly closed. Store away from heat. Store away from acids. Store away from oxidizing agents.

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
TITANIUM DIOXIDE	13463-67-7	ACGIH	TWA:10 mg/m3	A4: Not class. as human carcin
TITANIUM DIOXIDE	13463-67-7	CMRG	TWA(as respirable dust):5 mg/m3	
TITANIUM DIOXIDE	13463-67-7	OSHA	TWA(as total dust):15 mg/m3	
HYDROUS MAGNESIUM SILICATE	14807-96-6	ACGIH	TWA(respirable fraction):2 mg/m3	A4: Not class. as human carcin
HYDROUS MAGNESIUM SILICATE	14807-96-6	CMRG	TWA(as respirable dust):0.5 mg/m3	
HYDROUS MAGNESIUM SILICATE	14807-96-6	OSHA	TWA concentration(as total dust):0.3 mg/m3;TWA concentration(respirable):0.1 mg/m3(2.4 millions of particles/cu. ft.);TWA:20 millions of particles/cu. ft.	
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-95-6	CMRG	TWA:50 ppm(245 mg/m3)	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average  
 STEL: Short Term Exposure Limit  
 CEIL: Ceiling

## 8.2. Exposure controls

### 8.2.1. Engineering controls

Provide ventilated enclosure for heat curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment. Provide appropriate local exhaust ventilation for cutting, grinding, sanding or machining. Provide local exhaust ventilation at transfer points.

### 8.2.2. Personal protective equipment (PPE)

#### Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

#### Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

Gloves made from the following material(s) are recommended: Polymer laminate

#### Respiratory protection

Wear respiratory protection if ventilation is inadequate to prevent overexposure. An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program.

Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure: Full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

#### Thermal hazards

Wear heat insulating gloves when handling hot material to prevent thermal burns.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Specific Physical Form:	Viscous
Odor, Color, Grade:	Viscous, White
Odor threshold	No Data Available
pH	Not Applicable
Melting point	No Data Available
Boiling Point	> 200 °F
Flash Point	> 200 °F [Test Method: Tagliabue Closed Cup]
Evaporation rate	< 1 [Ref Std: BUOAC=1]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	No Data Available
Flammable Limits(UEL)	No Data Available



Vapor Pressure	0.01 mmHg [ <i>Test Method: Calculated</i> ] [ <i>Details: at 25C, Raoult's Law</i> ]
Vapor Density	> 1 [ <i>Ref Std: AIR=1</i> ]
Density	1.425 g/cm3
Specific Gravity	1.425 [ <i>Ref Std: WATER=1</i> ]
Solubility In Water	<i>No Data Available</i>
Solubility- non-water	Nil
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>No Data Available</i>
Viscosity	120,000 - 280,000 centipoise [ <i>@ 72 °F</i> ] [ <i>Test Method: Brookfield</i> ]
Volatile Organic Compounds	12 g/l [ <i>Details: For coating mixture of Parts A and B</i> ]

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

This material is considered to be non reactive under normal use conditions.

### 10.2. Chemical stability

Stable.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

None known.

### 10.5. Incompatible materials

None known.

### 10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

## SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

### 11.1. Information on Toxicological effects

#### Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

#### Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose

and throat pain.

May cause additional health effects (see below).

**Skin Contact:**

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

**Eye Contact:**

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Vapors released during curing may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

**Ingestion:**

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

**Additional Health Effects:**

**Prolonged or repeated exposure may cause target organ effects:**

Pneumoconiosis: Sign/symptoms may include persistent cough, breathlessness, chest pain, increased amounts of sputum, and changes in lung function tests.

**Carcinogenicity:**

Contains a chemical or chemicals which can cause cancer.

Ingredient	CAS No.	Class Description	Regulation
TITANIUM DIOXIDE	13463-67-7	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

**Toxicological Data**

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

**Acute Toxicity**

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Ingestion	Rat	LD50 > 1,000 mg/kg
HYDROUS MAGNESIUM SILICATE	Dermal		LD50 estimated to be > 5,000 mg/kg
HYDROUS MAGNESIUM SILICATE	Ingestion		LD50 estimated to be > 5,000 mg/kg
TITANIUM DIOXIDE	Dermal	Rabbit	LD50 > 10,000 mg/kg
TITANIUM DIOXIDE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
TITANIUM DIOXIDE	Ingestion	Rat	LD50 > 10,000 mg/kg
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Dermal	Rabbit	LD50 > 2,000 mg/kg
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation-Vapor (4 hours)	Rat	LC50 > 5.2 mg/l
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Rabbit	Mild irritant
HYDROUS MAGNESIUM SILICATE	Rabbit	No significant irritation

TITANIUM DIOXIDE	Rabbit	No significant irritation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Rabbit	Irritant

**Serious Eye Damage/Irritation**

Name	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Rabbit	Moderate irritant
HYDROUS MAGNESIUM SILICATE	Rabbit	No significant irritation
TITANIUM DIOXIDE	Rabbit	No significant irritation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Rabbit	Mild irritant

**Skin Sensitization**

Name	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Human and animal	Sensitizing
TITANIUM DIOXIDE	Human and animal	Not sensitizing
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Guinea pig	Not sensitizing

**Respiratory Sensitization**

Name	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Human	Some positive data exist, but the data are not sufficient for classification
HYDROUS MAGNESIUM SILICATE	Human	Not sensitizing

**Germ Cell Mutagenicity**

Name	Route	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	In vivo	Not mutagenic
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	In Vitro	Some positive data exist, but the data are not sufficient for classification
HYDROUS MAGNESIUM SILICATE	In Vitro	Not mutagenic
HYDROUS MAGNESIUM SILICATE	In vivo	Not mutagenic
TITANIUM DIOXIDE	In Vitro	Not mutagenic
TITANIUM DIOXIDE	In vivo	Not mutagenic

**Carcinogenicity**

Name	Route	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
HYDROUS MAGNESIUM SILICATE	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
TITANIUM DIOXIDE	Ingestion	Multiple animal species	Not carcinogenic
TITANIUM DIOXIDE	Inhalation	Rat	Carcinogenic
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification

**Reproductive Toxicity****Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Ingestion	Not toxic to female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Ingestion	Not toxic to male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-ISOPROPYLIDENEDIPHENOL-	Dermal	Not toxic to development	Rabbit	NOAEL 300	during

EPICHLOROHYDRIN POLYMER				mg/kg/day	organogenesis
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Ingestion	Not toxic to development	Rat	NOAEL 750 mg/kg/day	2 generation
HYDROUS MAGNESIUM SILICATE	Ingestion	Not toxic to development	Rat	NOAEL 1,600 mg/kg	during organogenesis
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Not toxic to female reproduction	Rat	NOAEL 1,500 ppm	2 generation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Not toxic to male reproduction	Rat	NOAEL 1,500 ppm	2 generation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 500 ppm	2 generation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Professional judgement	NOAEL Not available	
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Dermal	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	2 years
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Dermal	nervous system	All data are negative	Rat	NOAEL 1,000 mg/kg/day	13 weeks
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Ingestion	auditory system   heart   endocrine system   hematopoietic system   liver   eyes   kidney and/or bladder	All data are negative	Rat	NOAEL 1,000 mg/kg/day	28 days
HYDROUS MAGNESIUM SILICATE	Inhalation	pneumoconiosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
HYDROUS MAGNESIUM SILICATE	Inhalation	pulmonary fibrosis   respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 18 mg/m3	113 weeks
TITANIUM DIOXIDE	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.01 mg/l	2 years
TITANIUM DIOXIDE	Inhalation	pulmonary fibrosis	All data are negative	Human	NOAEL Not available	occupational exposure

Aspiration Hazard

Name	Value

LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)

Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

## SECTION 12: Ecological information

### Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

### Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

## SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

## SECTION 15: Regulatory information

### 15.1. US Federal Regulations

Contact 3M for more information.

#### 311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

### 15.2. State Regulations

Contact 3M for more information.

### 15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

### 15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

## SECTION 16: Other information

### NFPA Hazard Classification

Health: 2 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

### HMIS Hazard Classification

Health: \*2 Flammability: 1 Physical Hazard: 0 Personal Protection: X - See PPE section.

Hazardous Material Identification System (HMIS® IV) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® IV ratings are to be used with a fully implemented HMIS® IV program. HMIS® is a registered mark of the American Coatings Association (ACA).

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### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotchkote™ Liquid Epoxy Coating 323 Part B

#### Product Identification Numbers

80-6116-1153-6, 80-6116-1517-2, 80-6300-0060-4, 80-6300-0062-0, 80-6300-0248-5

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Coating, Part B of 2 Part Liquid Epoxy Coating System

#### 1.3. Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	Electrical Markets Division
<b>ADDRESS:</b>	3M Center, St. Paul, MN 55144-1000, USA
<b>Telephone:</b>	1-888-3M HELPS (1-888-364-3577)

#### 1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

### SECTION 2: Hazard identification

#### 2.1. Hazard classification

Serious Eye Damage/Irritation: Category 1.

Skin Corrosion/Irritation: Category 1B.

Skin Sensitizer: Category 1.

Reproductive Toxicity: Category 2.

Specific Target Organ Toxicity (respiratory irritation): Category 3.

Specific Target Organ Toxicity (repeated exposure): Category 1.

#### 2.2. Label elements

##### Signal word

Danger

##### Symbols

Corrosion | Exclamation mark | Health Hazard |

**Pictograms**



**Hazard Statements**

Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.  
May cause respiratory irritation.  
Suspected of damaging fertility or the unborn child.

Causes damage to organs through prolonged or repeated exposure:  
respiratory system |

**Precautionary Statements**

**Prevention:**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe dust/fume/gas/mist/vapors/spray.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves, protective clothing, and eye/face protection.  
Do not eat, drink or smoke when using this product.  
Wash thoroughly after handling.  
Contaminated work clothing must not be allowed out of the workplace.

**Response:**

IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
Immediately call a POISON CENTER or doctor/physician.  
If skin irritation or rash occurs: Get medical advice/attention.  
Wash contaminated clothing before reuse.  
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

**Storage:**

Store in a well-ventilated place. Keep container tightly closed.  
Store locked up.

**Disposal:**

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

**2.3. Hazards not otherwise classified**

May cause chemical gastrointestinal burns. Persons previously sensitized to amines may develop a cross-sensitization reaction to certain other amines.

8% of the mixture consists of ingredients of unknown acute oral toxicity.  
8% of the mixture consists of ingredients of unknown acute dermal toxicity.  
8% of the mixture consists of ingredients of unknown acute inhalation toxicity.

**SECTION 3: Composition/information on ingredients**



Ingredient	C.A.S. No.	% by Wt
P-TERT-BUTYLPHENOL	98-54-4	20 - 30 Trade Secret *
HYDROUS MAGNESIUM SILICATE	14807-96-6	20 - 30 Trade Secret *
PHENOL FORMALDEHYDE AMINE POLYMER	104242-08-2	5 - 10 Trade Secret *
M-XYLENE-. ALPHA.ALPHA.'-DIAMINE	1477-55-0	5 - 15 Trade Secret *
4-NONYL PHENOL, branched	84852-15-3	5 - 15 Trade Secret *
TRIMETHYLHEXAMETHYLENEDIAMINE	25620-58-0	5 - 15 Trade Secret *
C.I. PIGMENT GREEN 7	1328-53-6	1 - 3 Trade Secret *
POLYAMIDE	Unknown	1 - 3 Trade Secret *
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-95-6	< 1 Trade Secret *
PHENOL, 2-ISONONYL-	27938-31-4	< 0.5 Trade Secret *

\*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

#### Skin Contact:

Immediately flush with large amounts of water for at least 15 minutes. Remove contaminated clothing. Get immediate medical attention. Wash clothing before reuse.

#### Eye Contact:

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

#### If Swallowed:

Rinse mouth. Do not induce vomiting. Get immediate medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

### 4.3. Indication of any immediate medical attention and special treatment required

Not applicable

## SECTION 5: Fire-fighting measures

### 5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

### 5.2. Special hazards arising from the substance or mixture

Closed containers exposed to heat from fire may build pressure and explode.

### Hazardous Decomposition or By-Products

#### Substance

Carbon monoxide  
Carbon dioxide  
Oxides of Nitrogen

#### Condition

During Combustion  
During Combustion  
During Combustion

**5.3. Special protective actions for fire-fighters**

Water may not effectively extinguish fire, however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

**6.2. Environmental precautions**

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

**6.3. Methods and material for containment and cleaning up**

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

For industrial or professional use only. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

**7.2. Conditions for safe storage including any incompatibilities**

Store in a well-ventilated place. Keep container tightly closed. Store away from acids. Store away from oxidizing agents.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
COPPER COMPOUNDS	1328-53-6	ACGIH	TWA(as Cu dust or mist):1 mg/m <sup>3</sup> ;TWA(as Cu, fume):0.2 mg/m <sup>3</sup>	
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	1477-55-0	ACGIH	CEIL:0.1 mg/m <sup>3</sup>	Skin Notation
HYDROUS MAGNESIUM SILICATE	14807-96-6	ACGIH	TWA(respirable fraction):2 mg/m <sup>3</sup>	A4: Not class. as human carcin
HYDROUS MAGNESIUM SILICATE	14807-96-6	CMR <sub>G</sub>	TWA(as respirable dust):0.5 mg/m <sup>3</sup>	
HYDROUS MAGNESIUM	14807-96-6	OSHA	TWA concentration(as total	

SILICATE			dust):0.3 mg/m3;TWA concentration(respirable):0.1 mg/m3(2.4 millions of particles/cu. ft.);TWA:20 millions of particles/cu. ft.
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-95-6	CMRG	TWA:50 ppm(245 mg/m3)

ACGIH : American Conference of Governmental Industrial Hygienists  
 AIHA : American Industrial Hygiene Association  
 CMRG : Chemical Manufacturer's Recommended Guidelines  
 OSHA : United States Department of Labor - Occupational Safety and Health Administration  
 TWA: Time-Weighted-Average  
 STEL: Short Term Exposure Limit  
 CEIL: Ceiling

**8.2. Exposure controls**

**8.2.1. Engineering controls**

Provide ventilated enclosure for heat curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

**8.2.2. Personal protective equipment (PPE)**

**Eye/face protection**

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

- Full Face Shield
- Indirect Vented Goggles

**Skin/hand protection**

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Butyl Rubber

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron – Butyl rubber

**Respiratory protection**

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

- Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

**Thermal hazards**

Wear heat insulating gloves when handling hot material to prevent thermal burns.

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

<b>General Physical Form:</b>	Liquid
<b>Odor, Color, Grade:</b>	Viscous, Green, Strong Amine Odor
<b>Odor threshold</b>	<i>No Data Available</i>
<b>pH</b>	<i>No Data Available</i>
<b>Melting point</b>	<i>No Data Available</i>
<b>Boiling Point</b>	> 200 °F
<b>Flash Point</b>	> 200 °F [ <i>Test Method:</i> Pensky-Martens Closed Cup]
<b>Evaporation rate</b>	< 1 [ <i>Ref Std:</i> BUOAC=1]
<b>Flammability (solid, gas)</b>	Not Applicable
<b>Flammable Limits(LEL)</b>	1 % volume
<b>Flammable Limits(UEL)</b>	7 % volume
<b>Vapor Pressure</b>	0.05 mmHg [ <i>Test Method:</i> Calculated] [ <i>Details:</i> at 25C, Raoult's Law]
<b>Vapor Density</b>	> 1 [ <i>Ref Std:</i> AIR=1]
<b>Density</b>	1.2 g/ml
<b>Specific Gravity</b>	1.2 [ <i>Ref Std:</i> WATER=1]
<b>Solubility in Water</b>	Slight (less than 10%)
<b>Solubility- non-water</b>	<i>No Data Available</i>
<b>Partition coefficient: n-octanol/ water</b>	<i>No Data Available</i>
<b>Autoignition temperature</b>	<i>No Data Available</i>
<b>Decomposition temperature</b>	<i>No Data Available</i>
<b>Viscosity</b>	13,000 - 20,000 centipoise [ <i>@ 72 °F</i> ] [ <i>Test Method:</i> Brookfield]
<b>Volatile Organic Compounds</b>	12 g/l [ <i>Details:</i> For coating mixture of Parts A and B]
<b>Percent volatile</b>	1.28 % volume
<b>VOC Less H2O &amp; Exempt Solvents</b>	<i>Not Applicable</i>

**SECTION 10: Stability and reactivity****10.1. Reactivity**

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

**10.2. Chemical stability**

Stable.

**10.3. Possibility of hazardous reactions**

Hazardous polymerization will not occur.

**10.4. Conditions to avoid**

None known.

**10.5. Incompatible materials**

Strong oxidizing agents

Reducing agents

**10.6. Hazardous decomposition products****Substance**

Ammonia

**Condition**

During Storage

Refer to section 5.2 for hazardous decomposition products during combustion.

**SECTION 11: Toxicological information**

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

#### 11.1. Information on Toxicological effects

##### Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

##### Inhalation:

May be harmful if inhaled. Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Vapors released during curing may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

##### Skin Contact:

May be harmful in contact with skin.

Corrosive (Skin Burns): Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

May cause additional health effects (see below).

##### Eye Contact:

Corrosive (Eye Burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Vapors released during curing may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

##### Ingestion:

May be harmful if swallowed.

Gastrointestinal Corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain; nausea; vomiting; and diarrhea; blood in the feces and/or vomitus may also be seen.

May cause additional health effects (see below).

##### Additional Health Effects:

##### Single exposure may cause target organ effects:

Dermal Effects: Signs/symptoms may include changes in skin pigmentation and/or coloration.

##### Prolonged or repeated exposure may cause target organ effects:

Pneumoconiosis: Sign/symptoms may include persistent cough, breathlessness, chest pain, increased amounts of sputum, and changes in lung function tests.

##### Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

**Additional Information:**

Persons previously sensitized to amines may develop a cross-sensitization reaction to certain other amines.

**Toxicological Data**

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

**Acute Toxicity**

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE 2,000 - 5,000 mg/kg
Overall product	Inhalation-Dust/Mist(4 hr)		No data available; calculated ATE 5 - 12.5 mg/l
Overall product	Ingestion		No data available; calculated ATE 2,000 - 5,000 mg/kg
P-TERT-BUTYLPHENOL	Dermal	Rabbit	LD50 2,318 mg/kg
P-TERT-BUTYLPHENOL	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.6 mg/l
P-TERT-BUTYLPHENOL	Ingestion	Rat	LD50 4,000 mg/kg
HYDROUS MAGNESIUM SILICATE	Dermal		LD50 estimated to be > 5,000 mg/kg
HYDROUS MAGNESIUM SILICATE	Ingestion		LD50 estimated to be > 5,000 mg/kg
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Dermal	Rabbit	LD50 > 2,000 mg/kg
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 1.2 mg/l
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Ingestion	Rat	LD50 980 mg/kg
4-NONYL PHENOL, branched	Dermal	Rabbit	LD50 > 2,000 mg/kg
4-NONYL PHENOL, branched	Ingestion	Rat	LD50 1,531 mg/kg
TRIMETHYLHEXAMETHYLENEDIAMINE	Ingestion	Rat	LD50 910 mg/kg
C.I. PIGMENT GREEN 7	Dermal		LD50 estimated to be > 5,000 mg/kg
C.I. PIGMENT GREEN 7	Ingestion	Rat	LD50 > 5,000 mg/kg
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Dermal	Rabbit	LD50 > 2,000 mg/kg
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation-Vapor (4 hours)	Rat	LC50 > 5.2 mg/l
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
P-TERT-BUTYLPHENOL	Rabbit	Irritant
HYDROUS MAGNESIUM SILICATE	Rabbit	No significant irritation
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Rat	Corrosive
4-NONYL PHENOL, branched	Rabbit	Corrosive
TRIMETHYLHEXAMETHYLENEDIAMINE	Not available	Corrosive
C.I. PIGMENT GREEN 7	Rabbit	No significant irritation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Rabbit	Irritant

**Serious Eye Damage/Irritation**

Name	Species	Value
P-TERT-BUTYLPHENOL	Rabbit	Corrosive
HYDROUS MAGNESIUM SILICATE	Rabbit	No significant irritation
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Rabbit	Corrosive
4-NONYL PHENOL, branched	Rabbit	Corrosive
TRIMETHYLHEXAMETHYLENEDIAMINE	Rabbit	Corrosive
C.I. PIGMENT GREEN 7	Rabbit	No significant irritation

LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Rabbit	Mild irritant
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**Skin Sensitization**

Name	Species	Value
P-TERT-BUTYLPHENOL	Human and animal	Some positive data exist, but the data are not sufficient for classification
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Guinea pig	Sensitizing
4-NONYL PHENOL, branched	Guinea pig	Not sensitizing
TRIMETHYLHEXAMETHYLENEDIAMINE	Guinea pig	Sensitizing
C.I. PIGMENT GREEN 7	Guinea pig	Not sensitizing
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Guinea pig	Not sensitizing

**Respiratory Sensitization**

Name	Species	Value
HYDROUS MAGNESIUM SILICATE	Human	Not sensitizing

**Germ Cell Mutagenicity**

Name	Route	Value
P-TERT-BUTYLPHENOL	In Vitro	Not mutagenic
HYDROUS MAGNESIUM SILICATE	In Vitro	Not mutagenic
HYDROUS MAGNESIUM SILICATE	In vivo	Not mutagenic
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	In Vitro	Not mutagenic
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	In vivo	Not mutagenic
4-NONYL PHENOL, branched	In Vitro	Not mutagenic
4-NONYL PHENOL, branched	In vivo	Not mutagenic
TRIMETHYLHEXAMETHYLENEDIAMINE	In vivo	Not mutagenic
C.I. PIGMENT GREEN 7	In Vitro	Some positive data exist, but the data are not sufficient for classification

**Carcinogenicity**

Name	Route	Species	Value
P-TERT-BUTYLPHENOL	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
HYDROUS MAGNESIUM SILICATE	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification

**Reproductive Toxicity****Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
P-TERT-BUTYLPHENOL	Ingestion	Not toxic to male reproduction	Rat	NOAEL 600 mg/kg/day	2 generation
P-TERT-BUTYLPHENOL	Ingestion	Some positive female reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 600 mg/kg/day	2 generation
P-TERT-BUTYLPHENOL	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 70 mg/kg/day	2 generation
HYDROUS MAGNESIUM SILICATE	Ingestion	Not toxic to development	Rat	NOAEL 1,600 mg/kg	during organogenesis
M-XYLENE-.ALPHA.ALPHA.'-	Ingestion	Not toxic to female reproduction	Rat	NOAEL 450	1 generation

				mg/kg/day	
DIAMINE					
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Ingestion	Not toxic to male reproduction	Rat	NOAEL 450 mg/kg	1 generation
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Ingestion	Not toxic to development	Rat	NOAEL 450 mg/kg/day	1 generation
4-NONYL PHENOL, branched	Ingestion	Some positive male reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 400 mg/kg/day	28 days
4-NONYL PHENOL, branched	Ingestion	Toxic to female reproduction	official classification	NOAEL Not available	
4-NONYL PHENOL, branched	Ingestion	Toxic to development	official classification	NOAEL Not available	
TRIMETHYLHEXAMETHYLENEDIAMINE	Ingestion	Not toxic to male reproduction	Rat	NOAEL 120 mg/kg/day	2 generation
TRIMETHYLHEXAMETHYLENEDIAMINE	Ingestion	Not toxic to development	Rat	NOAEL 120 mg/kg/day	2 generation
TRIMETHYLHEXAMETHYLENEDIAMINE	Ingestion	Some positive female reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 10 mg/kg/day	2 generation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Not toxic to female reproduction	Rat	NOAEL 1,500 ppm	2 generation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Not toxic to male reproduction	Rat	NOAEL 1,500 ppm	2 generation
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 500 ppm	2 generation

**Lactation**

Name	Route	Species	Value
4-NONYL PHENOL, branched	Ingestion	Rat	Does not cause effects on or via lactation

**Target Organ(s)**

**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
P-TERT-BUTYLPHENOL	Inhalation	respiratory irritation	May cause respiratory irritation	Rat	LOAEL 5.6 mg/l	4 hours
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Not available	NOAEL Not available	
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Professional judgement	NOAEL Not available	
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
P-TERT-BUTYLPHENOL	Ingestion	endocrine system liver   kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 600 mg/kg/day	2 generation
P-TERT-BUTYLPHENOL	Ingestion	blood	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 200 mg/kg	6 weeks



			classification			
HYDROUS MAGNESIUM SILICATE	Inhalation	pneumoconiosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
HYDROUS MAGNESIUM SILICATE	Inhalation	pulmonary fibrosis   respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 18 mg/m3	113 weeks
M-XYLENE-.ALPHA.ALPHA.'-DIAMINE	Ingestion	endocrine system   blood   bone marrow	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 600 mg/kg/day	28 days
4-NONYL PHENOL, branched	Ingestion	endocrine system   hematopoietic system   liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 400 mg/kg/day	28 days
4-NONYL PHENOL, branched	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 150 mg/kg/day	90 days
4-NONYL PHENOL, branched	Ingestion	heart   bone, teeth, nails, and/or hair   immune system   muscles   nervous system   respiratory system	All data are negative	Rat	NOAEL 150 mg/kg/day	90 days
TRIMETHYLHEXAMETHYLENEDIAMINE	Ingestion	hematopoietic system   liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 180 mg/kg/day	13 weeks

**Aspiration Hazard**

Name	Value
LIGHT AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

**SECTION 12: Ecological information**

**Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

**Chemical fate information**

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

**SECTION 13: Disposal considerations**

**13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

**SECTION 14: Transport Information**

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

## SECTION 15: Regulatory information

### 15.1. US Federal Regulations

Contact 3M for more information.

#### 311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

This material contains a chemical which requires export notification under TSCA Section 12(b):

<u>Ingredient (Category if applicable)</u>	<u>C.A.S. No</u>	<u>Regulation</u>	<u>Status</u>
PHENOL, 2-ISONONYL- (Phenol, nonyl-)	27938-31-4	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Proposed
4-NONYL PHENOL, branched (Phenol, nonyl-)	84852-15-3	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Proposed
4-NONYL PHENOL, branched (Phenol, 4-nonyl-, branched)	84852-15-3	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Proposed
4-NONYL PHENOL, branched	84852-15-3	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Proposed

This material contains a chemical subject to a proposed EPA Significant New Use Rule (TSCA Section 5)

<u>Ingredient (Category if applicable)</u>	<u>C.A.S. No</u>	<u>Reference</u>
4-NONYL PHENOL, branched	84852-15-3	79 FR 59186

### 15.2. State Regulations

Contact 3M for more information.

### 15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

### 15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

## SECTION 16: Other information

#### NFPA Hazard Classification

Health: 3 Flammability: 1 Instability: 0 Special Hazards: None  
Corrosive: Yes

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

#### HMIS Hazard Classification

Health: \*3 Flammability: 1 Physical Hazard: 0 Personal Protection: X - See PPE section.

Hazardous Material Identification System (HMIS® IV) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® IV ratings are to be used with a fully implemented HMIS® IV program. HMIS® is a registered mark of the American Coatings Association (ACA).

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Scotchkote 226P Patch  
Compound

By

3M



## Safety Data Sheet

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<b>Issue Date:</b>	10/16/14	<b>Supersedes Date:</b>	06/27/14

### SECTION 1: Identification

#### 1.1. Product identifier

SCOTCHKOTE Brand 226P Hot Melt Patch Compound

#### Product Identification Numbers

80-6107-4959-2

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Coating, Patch Stick color matched to Scotchkote 226N Pipe Coating

#### 1.3. Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	Electrical Markets Division
<b>ADDRESS:</b>	3M Center, St. Paul, MN 55144-1000, USA
<b>Telephone:</b>	1-888-3M HELPS (1-888-364-3577)

#### 1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

### SECTION 2: Hazard identification

#### 2.1. Hazard classification

Not classified as hazardous according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

#### 2.2. Label elements

**Signal word**  
Not applicable.

**Symbols**  
Not applicable.

**Pictograms**  
Not applicable.

#### 2.3. Hazards not otherwise classified

May cause thermal burns.

### SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
POLYAMIDE RESIN	68139-70-8	70 - 80
WOLLASTONITE	13983-17-0	20 - 30
TITANIUM DIOXIDE	13463-67-7	< 1
QUARTZ SILICA	14808-60-7	< 0.5

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

**Inhalation:**

No need for first aid is anticipated.

**Skin Contact:**

Immediately flush skin with large amounts of cold water for at least 15 minutes. DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Cover affected area with a clean dressing. Get immediate medical attention.

**Eye Contact:**

Immediately flush eyes with large amounts of water for at least 15 minutes. DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Get immediate medical attention.

**If Swallowed:**

Rinse mouth. If you feel unwell, get medical attention.

#### 4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

#### 4.3. Indication of any immediate medical attention and special treatment required

Not applicable

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

#### 5.2. Special hazards arising from the substance or mixture

None inherent in this product.

#### Hazardous Decomposition or By-Products

Substance

Carbon monoxide  
Carbon dioxide  
Oxides of Nitrogen

Condition

During Combustion  
During Combustion  
During Combustion

#### 5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Ventilate the area with fresh air. Observe precautions from other sections.

**6.2. Environmental precautions**

Avoid release to the environment.

**6.3. Methods and material for containment and cleaning up**

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Dispose of collected material as soon as possible.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

Avoid skin contact with hot material. For industrial or professional use only. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

**7.2. Conditions for safe storage including any incompatibilities**

No special storage requirements.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
TITANIUM DIOXIDE	13463-67-7	ACGIH	TWA:10 mg/m3	A4: Not class. as human carcin
TITANIUM DIOXIDE	13463-67-7	CMRG	TWA(as respirable dust):5 mg/m3	
TITANIUM DIOXIDE	13463-67-7	OSHA	TWA(as total dust):15 mg/m3	
QUARTZ SILICA	14808-60-7	ACGIH	TWA(respirable fraction):0.025 mg/m3	A2: Suspected human carcin.
QUARTZ SILICA	14808-60-7	OSHA	TWA concentration(as total dust):0.3 mg/m3;TWA concentration(respirable):0.1 mg/m3(2.4 millions of particles/cu. ft.)	

ACGIH : American Conference of Governmental Industrial Hygienists  
 AIHA : American Industrial Hygiene Association  
 CMRG : Chemical Manufacturer's Recommended Guidelines  
 OSHA : United States Department of Labor - Occupational Safety and Health Administration  
 TWA: Time-Weighted-Average  
 STEL: Short Term Exposure Limit  
 CEIL: Ceiling

**8.2. Exposure controls**

**8.2.1. Engineering controls**

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

**8.2.2. Personal protective equipment (PPE)**

**Eye/face protection**

None required.

**Skin/hand protection**

No chemical protective gloves are required.

**Respiratory protection**

None required.

**Thermal hazards**

Wear heat insulating gloves when handling hot material to prevent thermal burns.

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

<b>General Physical Form:</b>	Solid
<b>Specific Physical Form:</b>	Solid Material in Stick Form
<b>Odor, Color, Grade:</b>	Solid Material in Stick Form, Green
<b>Odor threshold</b>	<i>No Data Available</i>
<b>pH</b>	<i>Not Applicable</i>
<b>Melting point</b>	<i>No Data Available</i>
<b>Boiling Point</b>	<i>Not Applicable</i>
<b>Flash Point</b>	No flash point
<b>Evaporation rate</b>	<i>Not Applicable</i>
<b>Flammability (solid, gas)</b>	Not Classified
<b>Flammable Limits(LEL)</b>	<i>Not Applicable</i>
<b>Flammable Limits(UEL)</b>	<i>Not Applicable</i>
<b>Vapor Pressure</b>	<i>Not Applicable</i>
<b>Vapor Density</b>	<i>Not Applicable</i>
<b>Density</b>	1.15 g/cm <sup>3</sup>
<b>Specific Gravity</b>	1.15 [ <i>Ref Std: WATER=1</i> ]
<b>Solubility In Water</b>	<i>Not Applicable</i>
<b>Solubility- non-water</b>	<i>No Data Available</i>
<b>Partition coefficient: n-octanol/ water</b>	<i>No Data Available</i>
<b>Autoignition temperature</b>	<i>No Data Available</i>
<b>Decomposition temperature</b>	<i>No Data Available</i>
<b>Viscosity</b>	<i>Not Applicable</i>
<b>Volatile Organic Compounds</b>	0 %
<b>Flash Point as text</b>	No flash point

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

This material is considered to be non reactive under normal use conditions.

**10.2. Chemical stability**

Stable.

**10.3. Possibility of hazardous reactions**

Hazardous polymerization will not occur.

**10.4. Conditions to avoid**

None known.



**10.5. Incompatible materials**

None known.

**10.6. Hazardous decomposition products**

Substance

Condition

None known.

Refer to section 5.2 for hazardous decomposition products during combustion.

**SECTION 11: Toxicological information**

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

**11.1. Information on Toxicological effects**

**Signs and Symptoms of Exposure**

Based on test data and/or information on the components, this material may produce the following health effects:

**Inhalation:**

No health effects are expected.

**Skin Contact:**

During heating:

Thermal Burns: Signs/symptoms may include intense pain, redness and swelling, and tissue destruction.

**Eye Contact:**

During heating:

Thermal Burns: Signs/symptoms may include severe pain, redness and swelling, and tissue destruction.

**Ingestion:**

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

**Carcinogenicity:**

Ingredient	C.A.S. No.	Class Description	Regulation
SILICA, CRYSTAL	14808-60-7	Known human carcinogen	National Toxicology Program Carcinogens
QUARTZ SILICA	14808-60-7	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
TITANIUM DIOXIDE	13463-67-7	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

**Toxicological Data**

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

**Acute Toxicity**

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
WOLLASTONITE	Dermal		LD50 estimated to be > 5,000 mg/kg
WOLLASTONITE	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
TITANIUM DIOXIDE	Dermal	Rabbit	LD50 > 10,000 mg/kg
TITANIUM DIOXIDE	Inhalation-	Rat	LC50 > 6.82 mg/l

	Dust/Mist (4 hours)		
TITANIUM DIOXIDE	Ingestion	Rat	LD50 > 10,000 mg/kg
QUARTZ SILICA	Dermal		LD50 estimated to be > 5,000 mg/kg
QUARTZ SILICA	Ingestion		LD50 estimated to be > 5,000 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
TITANIUM DIOXIDE	Rabbit	No significant irritation
QUARTZ SILICA		No significant irritation

**Serious Eye Damage/Irritation**

Name	Species	Value
TITANIUM DIOXIDE	Rabbit	No significant irritation

**Skin Sensitization**

Name	Species	Value
TITANIUM DIOXIDE	Human and animal	Not sensitizing

**Respiratory Sensitization**

Name	Species	Value
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**Germ Cell Mutagenicity**

Name	Route	Value
WOLLASTONITE	In Vitro	Not mutagenic
TITANIUM DIOXIDE	In Vitro	Not mutagenic
TITANIUM DIOXIDE	In vivo	Not mutagenic
QUARTZ SILICA	In Vitro	Some positive data exist, but the data are not sufficient for classification
QUARTZ SILICA	In vivo	Some positive data exist, but the data are not sufficient for classification

**Carcinogenicity**

Name	Route	Species	Value
TITANIUM DIOXIDE	Ingestion	Multiple animal species	Not carcinogenic
TITANIUM DIOXIDE	Inhalation	Rat	Carcinogenic
QUARTZ SILICA	Inhalation	Human and animal	Carcinogenic

**Reproductive Toxicity**

**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
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**Target Organ(s)**

**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
------	-------	-----------------	-------	---------	-------------	-------------------

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
WOLLASTONITE	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for	Human	NOAEL Not available	occupational exposure

**SCOTCHKOTE Brand 226P Hot Melt Patch Compound 10/16/14**

			classification			
WOLLASTONITE	Inhalation	pulmonary fibrosis	All data are negative	Human and animal	NOAEL Not available	
TITANIUM DIOXIDE	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.010 mg/l	2 years
TITANIUM DIOXIDE	Inhalation	pulmonary fibrosis	All data are negative	Human	NOAEL Not available	occupational exposure
QUARTZ SILICA	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure

**Aspiration Hazard**

Name	Value
------	-------

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

**SECTION 12: Ecological information****Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

**Chemical fate information**

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

**SECTION 13: Disposal considerations****13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Prior to disposal, consult all applicable authorities and regulations to insure proper classification. Incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. As a disposal alternative, utilize an acceptable permitted waste disposal facility. If no other disposal options are available, waste product may be placed in a landfill properly designed for industrial waste.

EPA Hazardous Waste Number (RCRA): Not regulated

**SECTION 14: Transport Information**

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

**SECTION 15: Regulatory information****15.1. US Federal Regulations**

Contact 3M for more information.

**311/312 Hazard Categories:**

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - No Delayed Hazard - No

## 15.2. State Regulations

Contact 3M for more information.

## 15.3. Chemical Inventories

The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

## 15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

## SECTION 16: Other information

### NFPA Hazard Classification

Health: 0 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

### HMIS Hazard Classification

Health: 0 Flammability: 1 Physical Hazard: 0 Personal Protection: X - See PPE section.

Hazardous Material Identification System (HMIS® III) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® III ratings are to be used with a fully implemented HMIS® III program. HMIS® is a registered mark of the American Coatings Association (ACA).

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<b>Issue Date:</b>	11/17/14	<b>Supersedes Date:</b>	09/29/14

### SECTION 1: Identification

#### 1.1. Product identifier

SCOTCHKOTE 206N Fusion Bonded Epoxy Coating  
and Fluid Bed Versions)

(Standard, Long Gel, Extra Long Gel,

#### Product Identification Numbers

80-6107-8246-0, 80-6108-4006-0, 80-6108-4213-2, 80-6108-6729-5, 80-6300-0004-2, 80-6300-0067-9, 80-6300-0125-5, 80-6300-0168-5

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Coating, Corrosion Protection Coating for Metal

#### 1.3. Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	Electrical Markets Division
<b>ADDRESS:</b>	3M Center, St. Paul, MN 55144-1000, USA
<b>Telephone:</b>	1-888-3M HELPS (1-888-364-3577)

#### 1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

### SECTION 2: Hazard identification

#### 2.1. Hazard classification

Combustible Dust.

Serious Eye Damage/Irritation: Category 2B.

Carcinogenicity: Category 1A.

#### 2.2. Label elements

Signal word

Danger

##### Symbols

Health Hazard |

##### Pictograms



**Hazard Statements**

May form combustible dust concentrations in air.

Causes eye irritation.

May cause cancer.

**Precautionary Statements**

**Prevention:**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Wear protective gloves.

Wash thoroughly after handling.

**Response:**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF eye irritation persists: Get medical advice/attention.

IF exposed or concerned: Get medical advice/attention.

**Storage:**

Store locked up.

**Disposal:**

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

**2.3. Hazards not otherwise classified**

None.

3% of the mixture consists of ingredients of unknown acute oral toxicity.

97% of the mixture consists of ingredients of unknown acute inhalation toxicity.

**SECTION 3: Composition/information on ingredients**

Ingredient	C.A.S. No.	% by Wt
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	25068-38-6	60 - 70 Trade Secret *
CALCIUM SILICATE	13983-17-0	20 - 40 Trade Secret *
PROPRIETARY POLYMER/SOLIDS	Trade Secret*	1 - 5 Trade Secret *
CYANO GUANIDINE	461-58-5	1 - 5 Trade Secret *
TITANIUM DIOXIDE	13463-67-7	1 - 5 Trade Secret *
QUARTZ SILICA	14808-60-7	0.1 - 0.4 Trade Secret *

\*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

**Inhalation:**

Remove person to fresh air. If you feel unwell, get medical attention.

**Skin Contact:**

Wash with soap and water. If signs/symptoms develop, get medical attention.

**Eye Contact:**

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

**If Swallowed:**

Rinse mouth. If you feel unwell, get medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

### 4.3. Indication of any immediate medical attention and special treatment required

Not applicable

## SECTION 5: Fire-fighting measures

### 5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

### 5.2. Special hazards arising from the substance or mixture

Powdered material may form explosive dust-air mixture. Avoid fire fighting methods that would cause powders to become airborne.

### Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Aldehydes	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion
Ammonia	During Combustion
Oxides of Nitrogen	During Combustion
Oxides of Phosphorus	During Combustion

### 5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Eliminate all ignition sources if safe to do so. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection,

ventilation, and personal protective equipment.

**6.2. Environmental precautions**

Avoid release to the environment.

**6.3. Methods and material for containment and cleaning up**

For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Use wet sweeping compound or water to avoid dusting. Sweep up. Place in a closed container approved for transportation by appropriate authorities. Place in a metal container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

Avoid skin contact with hot material. For industrial or professional use only. Do not use in a confined area with minimal air exchange. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Use personal protective equipment (gloves, respirators, etc.) as required. Dust clouds of this material in sufficient concentration in combination with an ignition source may be explosive. Dust deposits should not be allowed to accumulate on surfaces because of the potential for secondary explosions. Routine housekeeping should be instituted to ensure that combustible dusts do not accumulate on surfaces. Solids can generate static electricity charges when transferred and in mixing operations sufficient to be an ignition source. Evaluate the need for precautions, such as grounding and bonding, low energy transfer of material (e.g. low speed, short distance), or inert atmospheres.

**7.2. Conditions for safe storage including any incompatibilities**

Keep container tightly closed. Keep cool. Store away from heat. Store in a dry place.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
TITANIUM DIOXIDE	13463-67-7	ACGIH	TWA:10 mg/m3	A4: Not class. as human carcin
TITANIUM DIOXIDE	13463-67-7	CMRG	TWA(as respirable dust):5 mg/m3	
TITANIUM DIOXIDE	13463-67-7	OSHA	TWA(as total dust):15 mg/m3	
QUARTZ SILICA	14808-60-7	ACGIH	TWA(respirable fraction):0.025 mg/m3	A2: Suspected human carcin.
QUARTZ SILICA	14808-60-7	OSHA	TWA concentration(as total dust):0.3 mg/m3;TWA concentration(respirable):0.1 mg/m3(2.4 millions of particles/cu. ft.)	

ACGIH : American Conference of Governmental Industrial Hygienists  
 AIHA : American Industrial Hygiene Association  
 CMRG: Chemical Manufacturer's Recommended Guidelines  
 OSHA : United States Department of Labor - Occupational Safety and Health Administration  
 TWA: Time-Weighted-Average  
 STEL: Short Term Exposure Limit



CEIL: Ceiling

## 8.2. Exposure controls

### 8.2.1. Engineering controls

Provide local exhaust ventilation at transfer points. Provide ventilated enclosure for heat curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. Provide appropriate local exhaust when product is heated. Provide ventilation adequate to maintain dust concentration below minimum explosive concentrations. Provide appropriate local exhaust ventilation for cutting, grinding, sanding or machining. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment. Provide local exhaust at process emission sources to control exposure near the source and to prevent the escape of dust into the work area. It is recommended that all dust control equipment (such as local exhaust ventilation), process equipment, and material transport systems involved in handling of this product be evaluated for the need for explosion-protection safeguards. Recognized safeguards include explosion relief vents, explosion suppression systems, and oxygen deficient process environments. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Evaluate the need for electrically classified equipment.

### 8.2.2. Personal protective equipment (PPE)

#### Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

#### Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Polymer laminate

#### Respiratory protection

In case of inadequate ventilation wear respiratory protection. An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

#### Thermal hazards

Wear heat insulating gloves when handling hot material to prevent thermal burns.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

General Physical Form:	Solid
Specific Physical Form:	Powder
Odor, Color, Grade:	Green Powder
Odor threshold	No Data Available
pH	Not Applicable
Melting point	No Data Available

Boiling Point	<i>Not Applicable</i>
Flash Point	No flash point
Evaporation rate	<i>Not Applicable</i>
Flammability (solid, gas)	Not Classified
Vapor Pressure	<i>Not Applicable</i>
Vapor Density	<i>Not Applicable</i>
Density	1.44 g/ml
Specific Gravity	1.44 [Ref Std: WATER=1]
Solubility in Water	Nil
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Decomposition temperature	<i>No Data Available</i>
Viscosity	<i>Not Applicable</i>
Volatile Organic Compounds	0 %
Percent volatile	0 %
VOC Less H2O & Exempt Solvents	0 %
*Dust deflagration index (Kst)	70 - 250 bar.m/s [Details: Typical Range]
*Min. explosible conc.(MEC)	35 - 55 g/m3 [Details: Typical Range]
*Min. ignition energy (MIE)	3 - 100 mJ [Details: Typical Range]
*Min. ign temp(MIT)-dust cloud	450 - 550 °C [Details: Typical Range]

\* The values noted with an asterisk (\*) in the above table are representative values based on testing of raw materials and selected products. Additionally, a material's characteristics may change depending upon the process and conditions of use at a facility, including further changes in particle size, or mixture with other materials. In order to obtain specific data for the material, we recommend the user conduct characterization testing based on the use factors at the specific facility.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

### 10.2. Chemical stability

Stable.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Sparks and/or flames

### 10.5. Incompatible materials

Combustibles

### 10.6. Hazardous decomposition products

**Substance**

None known.

**Condition**

Refer to section 5.2 for hazardous decomposition products during combustion.

## SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient

classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

### 11.1. Information on Toxicological effects

#### Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

##### Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Vapors released during curing may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Dust from cutting, grinding, sanding or machining may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

##### Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

##### Eye Contact:

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Vapors released during curing may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Dust created by cutting, grinding, sanding, or machining may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

##### Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

##### Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

Ingredient	CAS No.	Class Description	Regulation
QUARTZ SILICA	14808-60-7	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
TITANIUM DIOXIDE	13463-67-7	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

#### Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

#### Acute Toxicity

Name	Route	Species	Value
Overall product	Inhalation-Dust/Mist(4 hr)		No data available; calculated ATE > 12.5 mg/l
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROXYDRIN POLYMER	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROXYDRIN	Ingestion	Rat	LD50 > 1,000 mg/kg

POLYMER			
CALCIUM SILICATE	Dermal		LD50 estimated to be > 5,000 mg/kg
CALCIUM SILICATE	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
CYANOQUANIDINE	Dermal	Rabbit	LD50 > 10,000 mg/kg
CYANOQUANIDINE	Ingestion	Rat	LD50 > 30,000 mg/kg
TITANIUM DIOXIDE	Dermal	Rabbit	LD50 > 10,000 mg/kg
TITANIUM DIOXIDE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
TITANIUM DIOXIDE	Ingestion	Rat	LD50 > 10,000 mg/kg
QUARTZ SILICA	Dermal		LD50 estimated to be > 5,000 mg/kg
QUARTZ SILICA	Ingestion		LD50 estimated to be > 5,000 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Rabbit	Mild irritant
CYANOQUANIDINE	Human and animal	Minimal irritation
TITANIUM DIOXIDE	Rabbit	No significant irritation
QUARTZ SILICA		No significant irritation

**Serious Eye Damage/Irritation**

Name	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Rabbit	Moderate irritant
CYANOQUANIDINE	Professional judgement	Mild irritant
TITANIUM DIOXIDE	Rabbit	No significant irritation

**Skin Sensitization**

Name	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Human and animal	Sensitizing
CYANOQUANIDINE	Guinea pig	Some positive data exist, but the data are not sufficient for classification
TITANIUM DIOXIDE	Human and animal	Not sensitizing

**Respiratory Sensitization**

Name	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Human	Some positive data exist, but the data are not sufficient for classification

**Germ Cell Mutagenicity**

Name	Route	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	In vivo	Not mutagenic
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	In Vitro	Some positive data exist, but the data are not sufficient for classification
CALCIUM SILICATE	In Vitro	Not mutagenic
CYANOQUANIDINE	In Vitro	Not mutagenic
TITANIUM DIOXIDE	In Vitro	Not mutagenic
TITANIUM DIOXIDE	In vivo	Not mutagenic
QUARTZ SILICA	In Vitro	Some positive data exist, but the data are not sufficient for classification
QUARTZ SILICA	In vivo	Some positive data exist, but the data are not sufficient for classification

**Carcinogenicity**

Name	Route	Species	Value
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
CYANOQUANIDINE	Ingestion	Rat	Not carcinogenic
TITANIUM DIOXIDE	Ingestion	Multiple animal species	Not carcinogenic
TITANIUM DIOXIDE	Inhalation	Rat	Carcinogenic
QUARTZ SILICA	Inhalation	Human and animal	Carcinogenic

### Reproductive Toxicity

#### Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Ingestion	Not toxic to female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Ingestion	Not toxic to male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Dermal	Not toxic to development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Ingestion	Not toxic to development	Rat	NOAEL 750 mg/kg/day	2 generation
CYANOQUANIDINE	Ingestion	Not toxic to female reproduction	Rat	NOAEL 1,000 mg/kg/day	prematuring & during gestation
CYANOQUANIDINE	Ingestion	Not toxic to male reproduction	Rat	NOAEL 1,000 mg/kg/day	44 days
CYANOQUANIDINE	Ingestion	Not toxic to development	Rat	NOAEL 1,000 mg/kg/day	prematuring & during gestation

### Target Organ(s)

#### Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
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#### Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Dermal	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	2 years
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Dermal	nervous system	All data are negative	Rat	NOAEL 1,000 mg/kg/day	13 weeks
4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER	Ingestion	auditory system   heart   endocrine system   hematopoietic system   liver   eyes   kidney and/or bladder	All data are negative	Rat	NOAEL 1,000 mg/kg/day	28 days
CALCIUM SILICATE	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for	Human	NOAEL Not available	occupational exposure

			classification			
CALCIUM SILICATE	Inhalation	pulmonary fibrosis	All data are negative	Human and animal	NOAEL Not available	
CYANOGLUANIDINE	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 6,822 mg/kg/day	13 weeks
TITANIUM DIOXIDE	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.010 mg/l	2 years
TITANIUM DIOXIDE	Inhalation	pulmonary fibrosis	All data are negative	Human	NOAEL Not available	occupational exposure
QUARTZ SILICA	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure

**Aspiration Hazard**

Name	Value

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

**SECTION 12: Ecological information**

**Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

**Chemical fate information**

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

**SECTION 13: Disposal considerations**

**13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

**SECTION 14: Transport Information**

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

**SECTION 15: Regulatory information**

### 15.1. US Federal Regulations

Contact 3M for more information.

#### 311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

### 15.2. State Regulations

Contact 3M for more information.

### 15.3. Chemical Inventories

The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

### 15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

## SECTION 16: Other information

#### NFPA Hazard Classification

Health: 1 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

#### HMIS Hazard Classification

Health: \*2 Flammability: 1 Physical Hazard: 0 Personal Protection: X - See PPE section.

Hazardous Material Identification System (HMIS® III) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® III ratings are to be used with a fully implemented HMIS® III program. HMIS® is a registered mark of the American Coatings Association (ACA).

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Powercrete J

By

Power Lone Star

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 08/20/2014

Version 4

Reviewed on 08/20/2014

**1 Identification of the substance/mixture and of the company/undertaking**

**Product identifier** Powercrete J Part A

**Trade name:** Powercrete J Part A

**Relevant identified uses of the substance or mixture and uses advised against**

**Sector of Use**

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

**Application of the substance / the mixture** Epoxy resin

**Details of the supplier of the safety data sheet**

**Manufacturer/Supplier:** Seal For Life Industries - Powercrete™

**Contact details**

Seal For Life Industries LLC  
103 J.L. Farmer Road, Franklin KY, 42134 USA  
Tel. (+1) 508-918-1600, Fax. (+1) 508-918-1910, Email: franklin@sealforlife.com

Seal For Life India Private Ltd.  
Baroda, India  
Tel: +91 2667 264 721, Fax: +91 2667 264 724, Email: india@sealforlife.com

Seal For Life Industries BVBA  
Nijverheidsstraat 13, B-2260 Westerlo, Belgium  
Tel. +32 14 72 25 00, Fax. +32 14 72 25 70, belgium@sealforlife.com

Seal For Life Industries - Stopaq B.V.  
Gasselterstraat 20, 9503JB Stadskanaal, the Netherlands  
Tel +31 599 696 170, Fax +31 599 696 177, info@sealforlife.com

Seal For Life Industries Mexico S de R.L. de C.V.  
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Tel USA: +1 858 633 9797, Tel Mx: +52 664 647 4397  
Fax USA: +1 858 633 9740, Fax Mx: +52 664 607 9105  
mexico@sealforlife.com

**Information department:** Product safety department of manufacturer / supplier

**Emergency telephone number:**

For emergency assistance call CHEMTREC (24 hours):

Within USA/Canada 1-800-424-9300; Outside USA/Canada +1 703-527-3887 (collect calls accepted)

**2 Hazard(s) Identification**

**Classification of the substance or mixture**



GHS08 Health hazard

Carc. 1A

H350 May cause cancer. Route of exposure: Inhalative.

STOT RE 2

H373 May cause damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalative.



GHS09 Environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

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GHS07

Skin Irrit. 2      H315 Causes skin irritation.  
Eye Irrit. 2A    H319 Causes serious eye irritation.  
Skin Sens. 1    H317 May cause an allergic skin reaction.

**Label elements**

**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms**



GHS07

GHS08

GHS09

**Signal word** Danger

**Hazard-determining components of labeling:**

reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight  $\leq$  700)  
Quartz (SiO<sub>2</sub>)

Polypropylene glycol, (chloromethyl) oxirane polymer

Phenol, 4-(1,1-dimethylethyl)-, polymer with (chloromethyl)oxirane and 4,4'-(1-methylethylidene)bis[phenol]

**Hazard statements**

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

May cause cancer. Route of exposure: Inhalative.

May cause damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalative.

Toxic to aquatic life with long lasting effects.

**Precautionary statements**

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear protective gloves/protective clothing/eye protection/face protection.

Use personal protective equipment as required.

Avoid release to the environment.

Wash thoroughly after handling.

Contaminated work clothing should not be allowed out of the workplace.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Specific treatment (see on this label).

Take off contaminated clothing and wash before reuse.

Wash contaminated clothing before reuse.

IF exposed or concerned: Get medical advice/attention.

IF skin irritation occurs: Get medical advice/attention.

IF skin irritation or rash occurs: Get medical advice/attention.

IF eye irritation persists: Get medical advice/attention.

Get medical advice/attention if you feel unwell.

IF ON SKIN: Wash with plenty of water.

Collect spillage.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

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**Classification system:**

**NFPA ratings (scale 0 - 4)**



Health = 2  
Fire = 1  
Reactivity = 0

**HMIS-ratings (scale 0 - 4)**

HEALTH	2
FIRE	1
REACTIVITY	0

Health = 2  
Fire = 1  
Reactivity = 0

**Other hazards**

**Results of PBT and vPvB assessment**

**PBT:** Not available.

**vPvB:** Not available.

**3 Composition/information on ingredients**

**Chemical characterization: Mixtures**

**Description:** Mixture of the substances listed below with nonhazardous additions.

**Dangerous components:**

25068-38-6	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	25-50%
9072-62-2	Polypropylene glycol, (chloromethyl) oxirane polymer ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317	2.5-5.0%
67924-34-9	Phenol, 4-(1,1-dimethylethyl)-, polymer with (chloromethyl)oxirane and 4,4'-(1-methylethylidene)bis[phenol] ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; Aquatic Chronic 4, H413	2.5-5.0%
14808-60-7	Quartz (SiO <sub>2</sub> ) ⚠ Carc. 1A, H350; STOT RE 1, H372-H373; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332	1.0-2.5%

**4 First-aid measures**

**Description of first aid measures**

**After inhalation:**

Take affected persons into fresh air and keep quiet.  
Supply fresh air and to be sure call for a doctor.  
In case of unconsciousness place patient stably in side position for transportation.

**After skin contact:**

Immediately wash with water and soap and rinse thoroughly.  
If skin irritation continues, consult a doctor.

**After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

**After swallowing:**

Do not induce vomiting; immediately call for medical help.  
Rinse out mouth and then drink plenty of water.

**Most important symptoms and effects, both acute and delayed** No further relevant information available.

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

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### 5 Fire-fighting measures

#### Extinguishing media

##### Suitable extinguishing agents:

Water haze  
Foam  
Fire-extinguishing powder  
Carbon dioxide

#### Special hazards arising from the substance or mixture

During heating or in case of fire poisonous gases are produced.

In case of fire, the following can be released:

Hydrogen chloride (HCl)  
Carbon monoxide (CO)  
Carbon dioxide (CO<sub>2</sub>)

#### Advice for firefighters

##### Protective equipment:

Wear self-contained respiratory protective device.  
Wear fully protective suit.

##### Additional information

Collect contaminated fire fighting water separately. It must not enter the sewage system.

### 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Not required.

#### Environmental precautions:

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to penetrate the ground/soil.

In case of seepage into the ground inform responsible authorities.

Do not allow to enter sewers/ surface or ground water.

#### Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Ensure adequate ventilation.

#### Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

### 7 Handling and storage

#### Precautions for safe handling

Avoid ignition sources

Keep away from heat and direct sunlight.

Ensure appropriate ventilation/exhaust at the workplace.

Prevent formation of aerosols.

#### Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect from heat.

#### Conditions for safe storage, including any incompatibilities

##### Storage:

**Requirements to be met by storerooms and receptacles:** Provide floor trough without outlet.

**Information about storage in one common storage facility:**

Store away from oxidizing agents.

Do not store together with acids.

Do not store together with alkalis (caustic solutions).

**Further information about storage conditions:**

Store in dry conditions.

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Keep receptacle tightly sealed.  
**Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

**Additional Information about design of technical systems:** No further data; see item 7.

**Control parameters**

<b>Components with limit values that require monitoring at the workplace:</b>	
<b>14808-60-7 Quartz (SiO<sub>2</sub>)</b>	
PEL	see Quartz listing
REL	Long-term value: 0.05* mg/m <sup>3</sup> *respirable dust; See Pocket Guide App. A
TLV	Long-term value: 0.025* mg/m <sup>3</sup> *as respirable fraction

**Additional information:** The lists that were valid during the creation were used as basis.

**Exposure controls**

**Personal protective equipment:**

**General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.

**Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use selfcontained respiratory protective device.

**Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

**Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Eye protection:**



Tightly sealed goggles

**Body protection:** Protective work clothing

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**9 Physical and chemical properties**

Information on basic physical and chemical properties	
<b>General Information</b>	
<b>Appearance:</b>	
Form:	Viscous
Color:	Brown
Odor:	Mild
Odour threshold:	Not determined.
pH-value:	Not determined.
<b>Change in condition</b>	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	201 °C (394 °F)
Flash point:	> 93 °C (> 199 °F)
Flammability (solid, gaseous):	Not applicable.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined.
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
<b>Explosion limits:</b>	
Lower:	Not determined.
Upper:	Not determined.
Vapor pressure:	Not determined.
Density at 20 °C (68 °F):	1.78 g/cm <sup>3</sup> (14.854 lbs/gal)
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
<b>Solubility in / Miscibility with</b>	
Water:	Not miscible or difficult to mix.
<b>Segregation coefficient (n-octanol/water):</b> Not determined.	
<b>Viscosity:</b>	
Dynamic:	Not determined.
Kinematic:	Not determined.
<b>Solvent content:</b>	
Organic solvents:	0.0 %
<b>Other information</b>	
The material polymerizes to 10 % solids, after mixing and reaction with the corresponding "Part B" of the product.	

**10 Stability and reactivity**

**Reactivity**

**Chemical stability**

**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

**Possibility of hazardous reactions** No dangerous reactions known.

**Conditions to avoid** No further relevant information available.

**Incompatible materials:**

Reacts with oxidizing agents.

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Reacts with strong acids.  
Strong alkalines

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**Hazardous decomposition products:** No dangerous decomposition products known.

**11 Toxicological information**

**Information on toxicological effects**

**Acute toxicity:**

LD/LC50 values that are relevant for classification:		
<b>25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)</b>		
Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>4000 mg/kg (rat)
		>22000 mg/kg (rabbit)
<b>9072-62-2 Polypropylene glycol, (chloromethyl) oxirane polymer</b>		
Oral	LD50	>2000 mg/kg (rat)
<b>14808-60-7 Quartz (SiO<sub>2</sub>)</b>		
Oral	LD50	1300 mg/kg (rat)

**Primary irritant effect:**

**on the skin:** Irritant to skin and mucous membranes.

**on the eye:** Irritating effect.

**Sensitization:** Sensitization possible through skin contact.

**Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:  
Irritant

**Carcinogenic categories**

IARC (International Agency for Research on Cancer)		
14808-60-7	Quartz (SiO <sub>2</sub> )	1
NTP (National Toxicology Program)		
14808-60-7	Quartz (SiO <sub>2</sub> )	K
OSHA-Ca (Occupational Safety & Health Administration)		
67924-34-9	Phenol, 4-(1,1-dimethylethyl)-, polymer with (chloromethyl)oxirane and 4,4'-(1-methylethylidene) bis[phenol]	

**12 Ecological information**

**Toxicity**

Aquatic toxicity:	
<b>25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)</b>	
EC50/24h	3.6 mg/l (Daphnia magna)
EC50/48h	1.4-1.7 mg/l (Daphnia magna)
LC50/96h	1.5 mg/l (Fish - Oncorhynchus mykiss)
	2.4 mg/l (Fish - Brachydanio rerio)

**Persistence and degradability** No further relevant information available.

**Bioaccumulative potential** No further relevant information available.

**Mobility in soil** No further relevant information available.

**Ecotoxicological effects:**

**Remark:** Toxic for fish

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**Additional ecological information:**

**General notes:**

Toxic for aquatic organisms  
Water hazard class 2 (Self-assessment): hazardous for water  
Do not allow product to reach ground water, water course or sewage system.  
Danger to drinking water if even small quantities leak into the ground.

**Results of PBT and vPvB assessment**

**PBT:** Not available.

**vPvB:** Not available.

**Other adverse effects** No further relevant information available.

**13 Disposal considerations**

**Waste treatment methods**


**Recommendation:**

Dispose safely in accordance with local and national legislations  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

<b>UN-Number</b>	UN3082
<b>DOT, ADR, IMDG, IATA</b>	UN3082
<b>UN proper shipping name</b>	Environmentally hazardous substances, liquid, n.o.s. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700))
<b>DOT</b>	
<b>ADR</b>	3082 Environmentally hazardous substances, liquid, n.o.s. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700))
<b>IMDG</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)), MARINE POLLUTANT
<b>IATA</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700))
<b>Transport hazard class(es)</b>	
<b>DOT, ADR, IMDG, IATA</b>	
	
<b>Class Label</b>	9 Miscellaneous dangerous substances and articles 9
<b>Packing group</b>	III
<b>DOT, ADR, IMDG, IATA</b>	III
<b>Environmental hazards:</b>	Product contains environmentally hazardous substances: reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)

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<b>Marine pollutant:</b>	Yes
<b>Special marking (ADR):</b>	Symbol (fish and tree)
<b>Special marking (IATA):</b>	Symbol (fish and tree)
<b>Special precautions for user</b>	Warning: Miscellaneous dangerous substances and articles
<b>Danger code (Kemler):</b>	90
<b>EMS Number:</b>	F-A,S-F
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	
<b>DOT</b>	
<b>Quantity limitations</b>	On passenger aircraft/rail: No limit On cargo aircraft only: No limit
<b>Remarks:</b>	Special marking with the symbol (fish and tree).
<b>ADR</b>	
<b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<b>IMDG</b>	
<b>Limited quantities (LQ)</b>	5L
<b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<b>UN "Model Regulation":</b>	UN3082, Environmentally hazardous substances, liquid, n.o.s. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight $\leq$ 700)), 9, III

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**  
Sara

**Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

**Section 313 (Specific toxic chemical listings):**

1313-13-9 manganese dioxide

1344-28-1 aluminium oxide

**TSCA (Toxic Substances Control Act):**

All ingredients of this product are included, or are exempted from inclusion in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory

**Proposition 65**

**Chemicals known to cause cancer:**

14808-60-7 Quartz (SiO<sub>2</sub>)

**Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

**Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

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**Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

**Carcinogenic categories**

**EPA (Environmental Protection Agency)**

1313-13-9	manganese dioxide	D
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**TLV (Threshold Limit Value established by ACGIH)**

14808-60-7	Quartz (SiO <sub>2</sub> )	A2
1344-28-1	aluminium oxide	A4

**NIOSH-Ca (National Institute for Occupational Safety and Health)**

14808-60-7	Quartz (SiO <sub>2</sub> )	
------------	----------------------------	--

**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms**



GHS07 GHS08 GHS09

**Signal word** Danger

**Hazard-determining components of labeling:**

reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)  
Quartz (SiO<sub>2</sub>)  
Polypropylene glycol, (chloromethyl) oxirane polymer  
Phenol, 4-(1,1-dimethylethyl)-, polymer with (chloromethyl)oxirane and 4,4'-(1-methylethylidene)bis[phenol]

**Hazard statements**

Causes skin irritation.  
Causes serious eye irritation.  
May cause an allergic skin reaction.  
May cause cancer. Route of exposure: Inhalative.  
May cause damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalative.  
Toxic to aquatic life with long lasting effects.

**Precautionary statements**

If medical advice is needed, have product container or label at hand.  
Keep out of reach of children.  
Read label before use.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Use personal protective equipment as required.  
Avoid release to the environment.  
Wash thoroughly after handling.  
Contaminated work clothing should not be allowed out of the workplace.  
Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Specific treatment (see on this label).  
Take off contaminated clothing and wash before reuse.  
Wash contaminated clothing before reuse.  
IF exposed or concerned: Get medical advice/attention.  
If skin irritation occurs: Get medical advice/attention.  
If skin irritation or rash occurs: Get medical advice/attention.  
If eye irritation persists: Get medical advice/attention.  
Get medical advice/attention if you feel unwell.  
IF ON SKIN: Wash with plenty of water.  
Collect spillage.  
Store locked up.

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Dispose of contents/container in accordance with local/regional/national/international regulations.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Department issuing SDS:** Product safety department

**Contact:**

Seal For Life Technologies & Services B.V.

Gasselsterstraat 20, 9503JB Stadskanaal, the Netherlands

Tel: +31 599 696 170; Fax: +31 599 696 177; Email: info@sealforlife.com

**Date of preparation / last revision** 08/20/2014 / 3

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Carc. 1A: Carcinogenicity, Hazard Category 1A

STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1

STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2

Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2

Aquatic Chronic 4: Hazardous to the aquatic environment - Chronic Hazard, Category 4

\* **Data compared to the previous version altered.**

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**1 Identification of the substance/mixture and of the company/undertaking**

**Product identifier** Powercrete J Part B

**Trade name:** Powercrete J Part B

**Relevant identified uses of the substance or mixture and uses advised against**

**Sector of Use**

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

**Application of the substance / the mixture** Epoxy curing agent

**Details of the supplier of the safety data sheet**

**Manufacturer/Supplier:** Seal For Life Industries - Powercrete™

**Contact details**

Seal For Life Industries LLC  
103 J.L. Farmer Road, Franklin KY, 42134 USA  
Tel. (+1) 508-918-1600, Fax. (+1) 508-918-1910, Email: franklin@sealforlife.com

Seal For Life India Private Ltd.  
Baroda, India  
Tel: +91 2667 264 721, Fax: +91 2667 264 724, Email: india@sealforlife.com

Seal For Life Industries BVBA  
Nijverheidsstraat 13, B-2260 Westerlo, Belgium  
Tel. +32 14 72 25 00, Fax. +32 14 72 25 70, belgium@sealforlife.com

Seal For Life Industries - Stopaq B.V.  
Gasselterstraat 20, 9503JB Stadskanaal, the Netherlands  
Tel +31 599 696 170, Fax +31 599 696 177, info@sealforlife.com

Seal For Life Industries Mexico S de R.L. de C.V.  
Tijuana, Mexico  
Tel USA: +1 858 633 9797, Tel Mx: +52 664 647 4397  
Fax USA: +1 858 633 9740, Fax Mx: +52 664 607 9105  
mexico@sealforlife.com

**Information department:** Product safety department of manufacturer / supplier

**Emergency telephone number:**

For emergency assistance call CHEMTREC (24 hours):

Within USA/Canada 1-800-424-9300; Outside USA/Canada +1 703-527-3887 (collect calls accepted)

**2 Hazard(s) identification**

**Classification of the substance or mixture**



GHS05 Corrosion

Skin Corr. 1A     H314 Causes severe skin burns and eye damage.



GHS09 Environment

Aquatic Chronic 1     H410 Very toxic to aquatic life with long lasting effects.

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**Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

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**5 Fire-fighting measures**

**Extinguishing media**

**Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

In case of fire, the following can be released:

Carbon monoxide (CO)

Carbon dioxide (CO<sub>2</sub>)

nitrogen containing compounds

In certain fire conditions, traces of other toxic gases cannot be excluded, e.g.:

Hydrogen cyanide (HCN)

**Advice for firefighters**

**Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

**Additional information**

Collect contaminated fire fighting water separately. It must not enter the sewage system.

**6 Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

Remove persons from danger area.

Use respiratory protective device against the effects of fumes/dust/aerosol.

Wear protective clothing.

**Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

**Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

**Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**7 Handling and storage**

**Precautions for safe handling**

At all times avoid inhalation of the product and contact with skin and eyes

Ensure appropriate ventilation/exhaust at the workplace.

Keep receptacles tightly sealed.

**Information about protection against explosions and fires:** No special measures required.

**Conditions for safe storage, including any incompatibilities**

**Storage:**

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:**

Keep receptacle tightly sealed.

Protect from heat and direct sunlight.

Store in a dry, cool, well ventilated place

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**Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

**Additional information about design of technical systems:** No further data; see item 7.

**Control parameters**

**Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**Additional information:** The lists that were valid during the creation were used as basis.

**Exposure controls**

**Personal protective equipment:**

**General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.  
Do not inhale gases / fumes / aerosols.

**Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

**Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Recommended material:

Nitrile rubber, NBR  
Butyl rubber, BR  
Neoprene gloves  
PVC gloves

**Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Eye protection:**



Tightly sealed goggles

**9 Physical and chemical properties**

**Information on basic physical and chemical properties**

**General Information**

**Appearance:**

**Form:**

Fluid

**Color:**

Amber colored

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<b>Odor:</b>	Fish-like
<b>Odour threshold:</b>	Not determined.
<b>pH-value:</b>	Not determined.
<b>Change In condition</b>	
<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	236 °C (457 °F)
<b>Flash point:</b>	> 93 °C (> 199 °F)
<b>Flammability (solid, gaseous):</b>	Not applicable.
<b>Ignition temperature:</b>	230 °C (446 °F)
<b>Decomposition temperature:</b>	Not determined.
<b>Auto igniting:</b>	Product is not selfigniting.
<b>Danger of explosion:</b>	Product does not present an explosion hazard.
<b>Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
<b>Vapor pressure:</b>	Not determined.
<b>Density at 20 °C (68 °F):</b>	0.97 g/cm <sup>3</sup> (8.095 lbs/gal)
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	Not determined.
<b>Evaporation rate</b>	Not determined.
<b>Solubility in / Miscibility with Water:</b>	Not miscible or difficult to mix.
<b>Segregation coefficient (n-octanol/water):</b>	Not determined.
<b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
<b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Other information</b>	The material polymerizes to 100% solids, after mixing and reaction with the corresponding "Part A" of the product.

### 10 Stability and reactivity

#### Reactivity

##### Chemical stability

**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

**Possibility of hazardous reactions** No dangerous reactions known.

**Conditions to avoid** No further relevant information available.

##### Incompatible materials:

Reacts with strong acids.

Reacts with oxidizing agents.

##### Hazardous decomposition products:

Carbon monoxide and carbon dioxide

Nitrogen oxides

Ammonia

Hydrogen cyanide (prussic acid)

Nitrogen containing compounds

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Aldehyde

**11 Toxicological Information**

**Information on toxicological effects**

**Acute toxicity:**

**LD/LC50 values that are relevant for classification:**

<b>25620-58-0 trimethylhexane-1,6-diamine</b>		
Oral	LD50	900 mg/kg (rat)
<b>98-54-4 4-tert-butylphenol</b>		
Oral	LD50	2951 mg/kg (rat)
Dermal	LD50	2288 mg/kg (rabbit)
<b>9046-10-0 (O,O'-Bis(2-aminopropyl)polypropyleneglycol)</b>		
Oral	LD50	2855 mg/kg (rat)
Dermal	LD50	2980 mg/kg (rabbit)

**Primary irritant effect:**

**on the skin:** Strong caustic effect on skin and mucous membranes.

**on the eye:** Strong caustic effect.

**Sensitization:** Sensitization possible through skin contact.

**Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful  
Corrosive  
Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

**Carcinogenic categories**

**IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

**NTP (National Toxicology Program)**

None of the ingredients is listed.

**OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

**12 Ecological information**

**Toxicity**

**Aquatic toxicity:**

No further relevant information available.

<b>25620-58-0 trimethylhexane-1,6-diamine</b>	
EC50/24h	31.5 mg/l (Daphnia magna)
EC50/72h	29.5 mg/l (Algae - Desmodesmus subspicatus)
LC50/48h	172 mg/l (Fish - Leuciscus idus)
<b>98-54-4 4-tert-butylphenol</b>	
EC50	2 mg/l (Daphnia magna) (OECD 211 - 21 days)
EC50/48h	4.8 mg/l (Daphnia magna) (OECD 202)
ErC50/72h - Inhibition of average growth rate	14 mg/l (Algae - Pseudokirchneriella subcapitata) (OECD 201)
LC50/96h	> 1 mg/l (Fish - Oncorhynchus mykiss) (OECD 203)
NOEC/21days	0.73 mg/l (Daphnia magna) (OECD 202)
NOEC/72h	0.32 mg/l (Algae - Pseudokirchneriella subcapitata) (OECD 201)

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<b>9046-10-0 (O,O'-Bis(2-aminopropyl)polypropyleneglycol)</b>	
EC50/96h	>15 mg/l (Fish - Oncorhynchus mykiss) (OECD 203)
LC50/96h	772 mg/l (Fish - Sheepshead minnow) (OECD 203)
NOEC/72h	0.32 mg/l (Algae - Pseudokirchneriella subcapitata) (OECD 201)
<b>Persistence and degradability</b>	
<b>25620-58-0 trimethylhexane-1,6-diamine</b>	
Biodegradation water	7 % (-)

**Bioaccumulative potential** No further relevant information available.

**Mobility in soil** No further relevant information available.

**Ecotoxicological effects:**

**Remark:** Very toxic for fish

**Additional ecological information:**

**General notes:**

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

**Results of PBT and vPvB assessment**

**PBT:** Not available.

**vPvB:** Not available.

**Other adverse effects** No further relevant information available.

**13 Disposal considerations**

**Waste treatment methods**

**Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Dispose safely in accordance with local and national legislations

Delivery to authorized waste disposal contractor only.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

<b>UN-Number</b>	UN2735
<b>DOT, ADR, IMDG, IATA</b>	
<b>UN proper shipping name</b>	
<b>DOT</b>	Amines, liquid, corrosive, n.o.s. (Trimethylhexamethylenediamines, 4-tert-butylphenol)
<b>ADR</b>	2735 Amines, liquid, corrosive, n.o.s. (Trimethylhexamethylenediamines, 4-tert-butylphenol), ENVIRONMENTALLY HAZARDOUS
<b>IMDG</b>	AMINES, LIQUID, CORROSIVE, N.O.S. (TRIMETHYLHEXAMETHYLENEDIAMINES, 4-tert-butylphenol), MARINE POLLUTANT
<b>IATA</b>	AMINES, LIQUID, CORROSIVE, N.O.S. (TRIMETHYLHEXAMETHYLENEDIAMINES, 4-tert-butylphenol)

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<b>Transport hazard class(es)</b>	
<b>DOT</b>	
<b>Class Label</b>	8 Corrosive substances 8
<b>ADR, IMDG</b>	
<b>Class Label</b>	8 Corrosive substances 8
<b>IATA</b>	
<b>Class Label</b>	8 Corrosive substances 8
<b>Packing group</b> DOT, ADR, IMDG, IATA	III
<b>Environmental hazards:</b> Marine pollutant:	Yes Symbol (fish and tree)
<b>Special marking (ADR):</b>	Symbol (fish and tree)
<b>Special precautions for user</b>	Warning: Corrosive substances
<b>Danger code (Kemler):</b>	80
<b>EMS Number:</b>	F-A,S-B
<b>Segregation groups</b>	Alkalis
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	
<b>DOT</b> Remarks:	Special marking with the symbol (fish and tree).
<b>ADR</b> Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<b>UN "Model Regulation":</b>	UN2735, Amines, liquid, corrosive, n.o.s. (Trimethylhexamethylenediamines, 4-tert-butylphenol), ENVIRONMENTALLY HAZARDOUS, 8, III

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**15 Regulatory information**

Safety, health and environmental regulations/legislation specific for the substance or mixture  
Sara

<b>Section 355 (extremely hazardous substances):</b>
None of the ingredients is listed.
<b>Section 313 (Specific toxic chemical listings):</b>
None of the ingredients is listed.
<b>TSCA (Toxic Substances Control Act):</b>
All ingredients of this product are included, or are exempted from inclusion in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory
<b>Proposition 65</b>
<b>Chemicals known to cause cancer:</b>
None of the ingredients is listed.
<b>Chemicals known to cause reproductive toxicity for females:</b>
None of the ingredients is listed.
<b>Chemicals known to cause reproductive toxicity for males:</b>
None of the ingredients is listed.
<b>Chemicals known to cause developmental toxicity:</b>
None of the ingredients is listed.

**Carcinogenic categories**

<b>EPA (Environmental Protection Agency)</b>
None of the ingredients is listed.
<b>TLV (Threshold Limit Value established by ACGIH)</b>
None of the ingredients is listed.
<b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>
None of the ingredients is listed.

**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms**



**Signal word** Danger

**Hazard-determining components of labeling:**

trimethylhexane-1,6-diamine  
(O,O'-Bis(2-aminopropyl)polypropyleneglycol)

**Hazard statements**

Harmful if swallowed.  
Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.  
May cause respiratory irritation.  
Very toxic to aquatic life with long lasting effects.

**Precautionary statements**

If medical advice is needed, have product container or label at hand.  
Keep out of reach of children.  
Read label before use.  
Do not breathe dust/fume/gas/mist/vapours/spray.

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Trade name: **Powercrete J Part B**

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Wear protective gloves/protective clothing/eye protection/face protection.  
Avoid release to the environment.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Contaminated work clothing should not be allowed out of the workplace.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
Immediately call a POISON CENTER/doctor.  
Specific treatment (see on this label).  
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Wash contaminated clothing before reuse.  
If skin irritation or rash occurs: Get medical advice/attention.  
IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
IF ON SKIN: Wash with plenty of water.  
Collect spillage.  
Store locked up.  
Store in a well-ventilated place. Keep container tightly closed.  
Dispose of contents/container in accordance with local/regional/national/international regulations.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Department issuing SDS:** Product safety department

**Contact:**

Seal For Life Technologies & Services B.V.  
Gasselterstraat 20, 9503JB Stadskanaal, the Netherlands  
Tel: +31 599 696 170; Fax: +31 599 696 177; Email: info@sealforlife.com

**Date of preparation / last revision** 08/20/2014 / 3

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
ACGIH: American Conference of Governmental Industrial Hygienists  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
Acute Tox. 4: Acute toxicity, Hazard Category 4  
Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A  
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B  
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2  
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1  
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1  
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3  
: Hazardous to the aquatic environment - AcuteHazard, Category 2  
: Hazardous to the aquatic environment - AcuteHazard, Category 3  
Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1  
Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2  
Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3

\* Data compared to the previous version altered.

Bitsumastic 300M (A)

By

Carboline



## Safety Data Sheet

### prepared to UN GHS Revision 3

#### 1. Identification of the Substance/Mixture and the Company/Undertaking

- 1.1 Product Identifier 0165A5NL
- Product Name: BITUMASTIC 300 M PART A Revision Date: 09/18/2015
- Supercedes Date: 05/30/2015
- 1.2 Relevant identified uses of the substance or mixture and uses advised against Component of multicomponent industrial coatings - Industrial use.
- 1.3 Details of the supplier of the safety data sheet
- Manufacturer: Carboline Company  
2150 Schuetz Road  
St. Louis, MO USA 63146
- Regulatory / Technical Information:  
Contact Carboline Technical Services at  
1-800-848-4645
- Datasheet Produced by: Schlereth, Ken - ehs@stoncor.com
- 1.4 Emergency telephone number: CHEMTREC 1-800-424-9300 (Inside US)  
CHEMTREC +1 703 5273887 (Outside US)  
HEALTH - Pittsburgh Poison Control 1-412-681-6669

#### 2. Hazard Identification

##### 2.1 Classification of the substance or mixture

Acute Toxicity, Inhalation, category 4  
 Hazardous to the aquatic environment, Chronic, category 2  
 Carcinogenicity, category 1A  
 Flammable Liquid, category 3  
 Germ Cell Mutagenicity, category 1A  
 Reproductive Toxicity, category 1A  
 STOT, repeated exposure, category 1  
 STOT, single exposure, category 3, RTI  
 Skin Corrosion, category 1  
 Skin Sensitizer, category 1

## 2.2 Label elements

### Symbol(s) of Product



### Signal Word

Danger

### Named Chemicals on Label

ORTHO-XYLENE, ETHYL BENZENE, PARA-XYLENE, META-XYLENE, MICROCRYSTALLINE SILICA, COAL TAR PITCH, POLYMER of C-18 UNSAT'D FATTY ACID

### GHS HAZARD STATEMENTS

Flammable Liquid, category 3	H226	Flammable liquid and vapour.
Skin Corrosion, category 1	H314-1	Causes severe skin burns and eye damage.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.
Acute Toxicity, Inhalation, category 4	H332	Harmful if inhaled.
STOT, single exposure, category 3, RT1	H335	May cause respiratory irritation.
Germ Cell Mutagenicity, category 1A	H340-1A	May cause genetic defects.
Carcinogenicity, category 1A	H350-1A	May cause cancer.
Reproductive Toxicity, category 1A	H360-1A	May damage fertility or the unborn child.
STOT, repeated exposure, category 1	H372	Causes damage to organs through prolonged or repeated exposure.
Hazardous to the aquatic environment, Chronic, category 2	H411	Toxic to aquatic life with long lasting effects.

### GHS PRECAUTION PHRASES

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Wear respiratory protection.
P302+352	IF ON SKIN: Wash with plenty of soap and water.
P303+361+353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308+313	IF exposed or concerned: Get medical advice/attention
P308+P313	IF exposed or concerned: Get medical advice/attention
P314	Get medical advice/attention if you feel unwell.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.
P403+233	Store in a well-ventilated place. Keep container tightly closed.



**2.3 Other hazards**

No Information

**Results of PBT and vPvB assessment:**

The product does not meet the criteria for PBT/vPvB in accordance with Annex XIII.

**3. Composition/Information On Ingredients****3.2 Mixtures****Hazardous Ingredients**

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>%</u>
65996-93-2	COAL TAR PITCH	25-50
14807-96-6	TALC	25-50
68082-29-1	POLYMER of C-18 UNSAT'D FATTY ACID	10-25
108-38-3	META-XYLENE	2.5-10
106-42-3	PARA-XYLENE	2.5-10
100-41-4	ETHYL BENZENE	2.5-10
68911-87-5	CLAY	2.5-10
95-47-6	ORTHO-XYLENE	2.5-10
64-17-5	ETHYL ALCOHOL	1.0-2.5
90-72-2	TRIS-2,4,6- (DIMETHYLAMINOMETHYL)PHENOL	1.0-2.5
14808-60-7	MICROCRYSTALLINE SILICA	0.1-1.0

<u>CAS-No.</u>	<u>GHS Symbols</u>	<u>GHS Hazard Statements</u>	<u>M-Factors</u>
65996-93-2	GHS07-GHS08	H335-340-350-360-372	0
14807-96-6			0
68082-29-1	GHS05-GHS07-GHS09	H314-317-400-410	0
108-38-3	GHS02-GHS07	H226-312-315-332	0
106-42-3	GHS02-GHS07-GHS08	H226-312-315-332-335-371	0
100-41-4	GHS02-GHS07	H225-332	0
68911-87-5	GHS08	H350-371-373	0
95-47-6	GHS02-GHS07	H226-312-315-332	0
64-17-5	GHS02	H225	0
90-72-2	GHS07	H315-319-302	0
14808-60-7	GHS08	H350-370	0

**Additional Information:** The text for GHS Hazard Statements shown above (if any) is given in Section 16.

**4. First-aid Measures****4.1 Description of First Aid Measures**

**AFTER INHALATION:** Give oxygen or artificial respiration if needed. Remove person to fresh air. If signs/symptoms continue, get medical attention.

**AFTER SKIN CONTACT:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If skin irritation persists, call a physician.

**AFTER EYE CONTACT:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**AFTER INGESTION:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, call a poison control centre or doctor immediately.

**4.2 Most important symptoms and effects, both acute and delayed**

Harmful if swallowed. Irritating to eyes and skin. Risk of serious damage to the lungs (by aspiration). Vapours may cause drowsiness and dizziness.

**4.3 Indication of any immediate medical attention and special treatment needed**

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.

When symptoms persist or in all cases of doubt seek medical advice.

## 5. Fire-fighting Measures

### 5.1 Extinguishing Media:

Carbon Dioxide, Dry Chemical, Foam, Water Fog

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Flammable liquid. Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. Provide adequate ventilation. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Electrical installations / working materials must comply with the technological safety standards. Wear shoes with conductive soles.

### 5.2 Special hazards arising from the substance or mixture

No Information

### 5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. Cool containers / tanks with water spray. Flammable.

## 6. Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. Evacuate personnel to safe areas. Remove all sources of ignition. To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. Wear personal protective equipment.

### 6.2 Environmental precautions

Do not allow material to contaminate ground water system. Prevent product from entering drains.

### 6.3 Methods and material for containment and cleaning up

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

### 6.4 Reference to other sections

Please refer to disposal requirements or country specific disposal requirements for this material. See Section 13 for further information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**INSTRUCTIONS FOR SAFE HANDLING :** Keep containers dry and tightly closed to avoid moisture absorption and contamination. Prepare the working solution as given on the label(s) and/or the user instructions. Do not breathe vapours or spray mist. Ensure all equipment is electrically grounded before beginning transfer operations. Do not use sparking tools. Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation/personal protection.

**PROTECTION AND HYGIENE MEASURES :** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke.

### 7.2 Conditions for safe storage, including any incompatibilities

**CONDITIONS TO AVOID:** Heat, flames and sparks.

**STORAGE CONDITIONS:** Keep container closed when not in use. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.

### 7.3 Specific end use(s)

No specific advice for end use available.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

#### Ingredients with Occupational Exposure Limits (US)

Name	%	ACGIH TLV- TWA	ACGIH TLV- STEL	OSHA PEL- TWA	OSHA PEL- CEILING	OEL Note
COAL TAR PITCH	25-50	0.2 MG/M3	N/E	0.2 MG/M3	N/E	
TALC	25-50	N/E	N/E	N/E	N/E	
POLYMER of C-18 UNSAT'D FATTY ACID	10-25	N/E	N/E	N/E	N/E	
META-XYLENE	2.5-10	100 PPM	150 PPM	435 MG/M3	N/E	
PARA-XYLENE	2.5-10	100 PPM	150 PPM	435 MGM3	N/E	
ETHYL BENZENE	2.5-10	20 PPM	N/E	435 MGM3	N/E	
CLAY	2.5-10	NE	NE	NE	NE	
ORTHO-XYLENE	2.5-10	100 PPM	150 PPM	435 MG/M3	N/E	
ETHYL ALCOHOL	1.0-2.5	1000 PPM	1000 PPM	1900 MGM3	N/E	
TRIS-2,4,6- (DIMETHYLAMINOMETHYL) PHENOL	1.0-2.5	N/E	N/E	N/E	N/E	
MICROCRYSTALLINE SILICA	0.1-1.0	0.025 MG/M3 (respirable)	N/E	0.1 MG/M3	N/E	

**FURTHER INFORMATION:** Refer to the regulatory exposure limits for the workforce enforced in each country.

### 8.2 Exposure controls

#### Personal Protection

**RESPIRATORY PROTECTION:** In order to avoid inhalation of spray-mist and sanding dust, all spraying and sanding must be done wearing adequate respirator. Use only with ventilation to keep levels below exposure guidelines reported in this document. User should test and monitor exposure levels to ensure all personnel are below guidelines. If not sure, or not able to monitor, use State or federally approved supplied air respirator. For silica containing coatings in a liquid state, and/or if no exposure limits are established above, air-supplied respirators are generally not required.

**EYE PROTECTION:** Safety glasses with side-shields.

**HAND PROTECTION:** Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Impervious gloves. Request information on glove permeation properties from the glove supplier.

**OTHER PROTECTIVE EQUIPMENT:** Ensure that eyewash stations and safety showers are close to the workstation location. Lightweight protective clothing

**ENGINEERING CONTROLS:** Avoid contact with skin, eyes and clothing. Ensure adequate ventilation, especially in confined areas.

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

Appearance:	Viscous Black Or Red Liquid
Physical State	Liquid
Odor	Tar Odor
Odor threshold	N/D
pH	N/D
Melting point / freezing point (°C)	N/D
Boiling point/range (°C)	149 F (65 C) - 284 F (140 C)
Flash Point, (°C)	24
Evaporation rate	Slower Than Ether

<b>Flammability (solid, gas)</b>	Not determined
<b>Upper/lower flammability or explosive limits</b>	1.0 - 36.0
<b>Vapour Pressure, mmHg</b>	N/D
<b>Vapour density</b>	Heavier than Air
<b>Relative density</b>	Not determined
<b>Solubility in / Miscibility with water</b>	N/D
<b>Partition coefficient: n-octanol/water</b>	Not determined
<b>Auto-ignition temperature (°C)</b>	Not determined
<b>Decomposition temperature (°C)</b>	Not determined
<b>Viscosity</b>	Unknown
<b>Explosive properties</b>	Not determined
<b>Oxidising properties</b>	Not determined

**9.2 Other information**

<b>VOC Content g/l:</b>	222
<b>Specific Gravity (g/cm3)</b>	1.32

## 10. Stability and Reactivity

**10.1 Reactivity**

No reactivity hazards known under normal storage and use conditions.

**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

Hazardous polymerisation does not occur.

**10.4 Conditions to avoid**

Heat, flames and sparks.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

#### Acute Toxicity:

Oral LD50:	N/D
Inhalation LC50:	N/D

Irritation: Unknown

Corrosivity: Unknown

Sensitization: Unknown

Repeated dose toxicity: Unknown

Carcinogenicity: Unknown

Mutagenicity: Unknown

Toxicity for reproduction: Unknown

If no information is available above under Acute Toxicity then the acute effects of this product have not been tested. Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
65996-93-2	COAL TAR PITCH	4300 mg/kg, oral, rat		5000 ppm/4 hr, inh, rat
14807-96-6	TALC	Not Available		Not Available
68082-29-1	POLYMER of C-18 UNSAT'D FATTY ACID	2001 mg/kg oral, rat		Not Available
108-38-3	META-XYLENE	Not Available		Not Available
106-42-3	PARA-XYLENE	Not Available		Not Available
100-41-4	ETHYL BENZENE	3500 mg/kg rat, oral	>5000 mg/l, dermal rabbit	17.2 mg/L Inh, Rat, 4Hr
68911-87-5	CLAY	NOT AVAILABLE		NOT AVAILABLE
95-47-6	ORTHO-XYLENE	Not Available		Not Available
64-17-5	ETHYL ALCOHOL	7060 mg/kg, oral, rat		20000 ppm/10 hrs, rat, inhalation
90-72-2	TRIS-2,4,6- (DIMETHYLAMINOMETHYL) PHENOL	2169 mg/kg oral		Not Available
14808-60-7	MICROCRYSTALLINE SILICA	Not Available	Not Available	Not Available

#### Additional Information:

Harmful if swallowed. Irritating to eyes and skin. Risk of serious damage to the lungs (by aspiration). Vapours may cause drowsiness and dizziness.

## 12. Ecological Information

### 12.1 Toxicity:

EC50 48hr (Daphnia):	Unknown
IC50 72hr (Algae):	Unknown
LC50 96hr (fish):	Unknown

12.2 Persistence and degradability: Unknown

12.3 Bioaccumulative potential: Unknown

12.4 Mobility in soil: Unknown

12.5 Results of PBT and vPvB assessment: The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

12.6 Other adverse effects: Unknown

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>EC50 48hr</u>	<u>IC50 72hr</u>	<u>LC50 96hr</u>
65996-93-2	COAL TAR PITCH	No information	No information	No information
14807-96-6	TALC	No information	No information	No information
68082-29-1	POLYMER of C-18 UNSAT'D FATTY ACID	No information	No information	No information
108-38-3	META-XYLENE	No information	No information	No information
106-42-3	PARA-XYLENE	No information	No information	No information
100-41-4	ETHYL BENZENE	No information	No information	No information
68911-87-5	CLAY	No information	No information	No information
95-47-6	ORTHO-XYLENE	No information	No information	No information
64-17-5	ETHYL ALCOHOL	2 mg/l (Daphnia Magna)	No information	42 mg/l (fish)
90-72-2	TRIS-2,4,6- (DIMETHYLAMINOMETHYL) PHENOL	No information	No information	No information
14808-60-7	MICROCRYSTALLINE SILICA	No information	No information	No information

## 13. Disposal Considerations

13.1 WASTE TREATMENT METHODS: Do not burn, or use a cutting torch on, the empty drum. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport Information

14.1 UN number	UN 1263
14.2 UN proper shipping name	Paint
Technical name	N/A
14.3 Transport hazard class(es)	3
Subsidiary shipping hazard	N/A
14.4 Packing group	III
14.5 Environmental hazards	Marine Pollutant: Yes (Coal Tar)
14.6 Special precautions for user	Unknown
EmS-No.:	F-E, S-E
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code	Unknown

## 15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation for the substance or mixture:

### U.S. Federal Regulations: As follows -

#### CERCLA - Sara Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

#### Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS-No.</u>
META-XYLENE	108-38-3
PARA-XYLENE	106-42-3
ETHYL BENZENE	100-41-4
ORTHO-XYLENE	95-47-6

#### Toxic Substances Control Act:

All components of this product are either listed on the TSCA Inventory or are exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

<u>Chemical Name</u>	<u>CAS-No.</u>
----------------------	----------------

No TSCA 12(b) components exist in this product.

### U.S. State Regulations: As follows -

#### New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product.

<u>Chemical Name</u>	<u>CAS-No.</u>
IRON OXIDE	1332-37-2

#### Pennsylvania Right-To-Know

The following non-hazardous ingredients are present in the product at greater than 3%.

<u>Chemical Name</u>	<u>CAS-No.</u>
----------------------	----------------

IRON OXIDE

1332-37-2

**California Proposition 65:**

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

<u>Chemical Name</u>	<u>CAS-No.</u>
ETHYL BENZENE	100-41-4
MICROCRYSTALLINE SILICA	14808-60-7
METHYL ISOBUTYL KETONE	108-10-1
BENZENE	71-43-2

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards.

<u>Chemical Name</u>	<u>CAS-No.</u>
TOLUENE	108-88-3
METHYL ALCOHOL	67-56-1
METHYL ISOBUTYL KETONE	108-10-1
BENZENE	71-43-2

**International Regulations: As follows -****\* Canadian DSL:**

No Information

**15.2 Chemical Safety Assessment:**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**16. Other Information****Text for GHS Hazard Statements shown in Section 3 describing each ingredient:**

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H340	May cause genetic defects.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H370	Causes damage to organs.
H371	May cause damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

**Reasons for revision**

No Information

No Information



Bitsumastic 300M (B)

By

Carboline



## Safety Data Sheet

prepared to UN GHS Revision 3

### 1. Identification of the Substance/Mixture and the Company/Undertaking

- 1.1 **Product Identifier** 0165B5NL
- Product Name:** BITUMASTIC 300 M PART B **Revision Date:** 05/30/2015
- Supercedes Date:** 29/05/2015
- 1.2 **Relevant identified uses of the substance or mixture and uses advised against** Component of multicomponent industrial coatings - Industrial use.
- 1.3 **Details of the supplier of the safety data sheet**
- Manufacturer:** Carboline Company  
2150 Schuetz Road  
St. Louis, MO USA 63146
- Regulatory / Technical Information:**  
Contact Carboline Technical Services at  
1-800-848-4645
- Datasheet Produced by:** Schlereth, Ken - ehs@stoncor.com
- 1.4 **Emergency telephone number:** CHEMTREC 1-800-424-9300 (Inside US)  
CHEMTREC +1 703 5273887 (Outside US)  
HEALTH - Pittsburgh Poison Control 1-412-681-6669

### 2. Hazard Identification

#### 2.1 Classification of the substance or mixture

Hazardous to the aquatic environment, Chronic, category 2  
 Eye Irritation, category 2  
 STOT, single exposure, category 3, RTI  
 Skin Irritation, category 2  
 Skin Sensitizer, category 1

## 2.2 Label elements

## Symbol(s) of Product



## Signal Word

Warning

## Named Chemicals on Label

EPOXY RESIN

## GHS HAZARD STATEMENTS

Skin Irritation, category 2	H315	Causes skin irritation.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.
Eye Irritation, category 2	H319	Causes serious eye irritation.
STOT, single exposure, category 3, RTI	H335	May cause respiratory irritation.
Hazardous to the aquatic environment, Chronic, category 2	H411	Toxic to aquatic life with long lasting effects.

## GHS PRECAUTION PHRASES

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+352	IF ON SKIN: Wash with plenty of soap and water.
P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P332+313	If skin irritation occurs: Get medical advice/attention.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.

## 2.3 Other hazards

Not applicable

## Results of PBT and vPvB assessment:

The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

### 3. Composition/Information On Ingredients

## 3.1 Substances

## Hazardous Ingredients

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>%</u>
25068-38-6	EPOXY RESIN	75-100

<u>CAS-No.</u>	<u>GHS Symbols</u>	<u>GHS Hazard Statements</u>	<u>M-Factors</u>
25068-38-6	GHS07-GHS09	H315-317-319-335-411	0

Additional Information: The text for GHS Hazard Statements shown above (if any) is given in Section 16.

## 4. First-aid Measures

### 4.1 Description of First Aid Measures

**AFTER INHALATION:** Give oxygen or artificial respiration if needed. Remove person to fresh air. If signs/symptoms continue, get medical attention.

**AFTER SKIN CONTACT:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If skin irritation persists, call a physician.

**AFTER EYE CONTACT:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**AFTER INGESTION:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, call a poison control centre or doctor immediately.

### 4.2 Most important symptoms and effects, both acute and delayed

May cause sensitization by skin contact. Irritating to eyes and skin. May be harmful if swallowed.

### 4.3 Indication of any immediate medical attention and special treatment needed

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.

## 5. Fire-fighting Measures

### 5.1 Extinguishing Media:

Carbon Dioxide, Dry Chemical, Foam, Water Fog

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** None known.

### 5.2 Special hazards arising from the substance or mixture

No Information

### 5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. Evacuate personnel to safe areas. The product is not flammable. Use NIOSH approved respiratory protection. Use water spray to cool unopened containers.

## 6. Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Ensure adequate ventilation.

### 6.2 Environmental precautions

Do not allow material to contaminate ground water system. Prevent product from entering drains.

### 6.3 Methods and material for containment and cleaning up

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

### 6.4 Reference to other sections

Please refer to disposal requirements or country specific disposal requirements for this material. See Section 13 for further information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**INSTRUCTIONS FOR SAFE HANDLING :** Keep containers dry and tightly closed to avoid moisture absorption and contamination. Prepare the working solution as given on the label(s) and/or the user instructions. Ensure all equipment is electrically grounded before beginning transfer operations. Do not use sparking tools. Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation/personal protection. Avoid breathing vapors, mist

or gas.

**PROTECTION AND HYGIENE MEASURES :** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke.

## 7.2 Conditions for safe storage, including any incompatibilities

**CONDITIONS TO AVOID:** Heat, flames and sparks.

**STORAGE CONDITIONS:** Keep container closed when not in use. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.

## 7.3 Specific end use(s)

No specific advice for end use available.

# 8. Exposure Controls/Personal Protection

## 8.1 Control parameters

Ingredients with Occupational Exposure Limits (US)

Name	%	ACGIH TLV- TWA	ACGIH TLV- STEL	OSHA PEL- TWA	OSHA PEL- CEILING	OEL Note
EPOXY RESIN	75-100	N/E	N/E	N/E	N/E	

**FURTHER INFORMATION:** Refer to the regulatory exposure limits for the workforce enforced in each country.

## 8.2 Exposure controls

### Personal Protection

**RESPIRATORY PROTECTION:** In order to avoid inhalation of spray-mist and sanding dust, all spraying and sanding must be done wearing adequate respirator. Use only with ventilation to keep levels below exposure guidelines reported in this document. User should test and monitor exposure levels to ensure all personnel are below guidelines. If not sure, or not able to monitor, use State or federally approved supplied air respirator. For silica containing coatings in a liquid state, and/or if no exposure limits are established above, air-supplied respirators are generally not required.

**EYE PROTECTION:** Safety glasses with side-shields.

**HAND PROTECTION:** Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Impervious gloves. Request information on glove permeation properties from the glove supplier.

**OTHER PROTECTIVE EQUIPMENT:** Ensure that eyewash stations and safety showers are close to the workstation location. Lightweight protective clothing

**ENGINEERING CONTROLS:** Avoid contact with skin, eyes and clothing. Ensure adequate ventilation, especially in confined areas.

# 9. Physical and Chemical Properties

## 9.1 Information on basic physical and chemical properties

Appearance:	Viscous Clear To Amber
Physical State	Liquid
Odor	Mild Odor
Odor threshold	
pH	N/D
Melting point / freezing point (°C)	N/D
Boiling point/range (°C)	Not determined
Flash Point, (°C)	254
Evaporation rate	

**Safety Data Sheet**  
acc. to OSHA HCS

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Reviewed on 08/20/2014

Trade name: **Powercrete J Part B**

(Contd. of page 1)



GHS07

Acute Tox. 4      H302 Harmful if swallowed.  
Skin Sens. 1      H317 May cause an allergic skin reaction.  
STOT SE 3      H335 May cause respiratory irritation.

**Label elements**

**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms**



GHS05



GHS07



GHS09

**Signal word** Danger

**Hazard-determining components of labeling:**

trimethylhexane-1,6-diamine  
(O,O'-Bis(2-aminopropyl)polypropyleneglycol)

**Hazard statements**

Harmful if swallowed.  
Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.  
May cause respiratory irritation.  
Very toxic to aquatic life with long lasting effects.

**Precautionary statements**

If medical advice is needed, have product container or label at hand.  
Keep out of reach of children.  
Read label before use.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Avoid release to the environment.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Contaminated work clothing should not be allowed out of the workplace.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Immediately call a POISON CENTER/doctor.  
Specific treatment (see on this label).  
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Wash contaminated clothing before reuse.  
If skin irritation or rash occurs: Get medical advice/attention.  
IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
IF ON SKIN: Wash with plenty of water.  
Collect spillage.  
Store locked up.  
Store in a well-ventilated place. Keep container tightly closed.  
Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 3)  
— USA —

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 08/20/2014

Version 4

Reviewed on 08/20/2014

Trade name: Powercrete J Part B

(Contd. of page 2)

**Classification system:**  
NFPA ratings (scale 0 - 4)



**HMIS-ratings (scale 0 - 4)**

HEALTH	3	Health = 3
FIRE	1	Fire = 1
REACTIVITY	0	Reactivity = 0

**Other hazards**

**Results of PBT and vPvB assessment**

**PBT:** Not available.

**vPvB:** Not available.

**3 Composition/information on ingredients**

**Chemical characterization: Mixtures**

**Description:** Mixture of the substances listed below with nonhazardous additions.

<b>Dangerous components:</b>		
25620-58-0	Trimethylhexane-1,6-diamine ⚠ Skin Corr. 1B, H314; Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; Skin Sens. 1, H317; Aquatic Chronic 3, H412	50-100%
98-54-4	4-tert-butylphenol ⚠ Eye Dam. 1, H318; ⚠ Aquatic Chronic 1, H410; ⚠ Skin Irrit. 2, H315; STOT SE 3, H335; H401	25-50%
9046-10-0	(O,O'-Bis(2-aminopropyl)polypropyleneglycol) ⚠ Skin Corr. 1A, H314; Eye Dam. 1, H318; ⚠ Aquatic Chronic 2, H411; H402	5.0-10%

**4 First-aid measures**

**Description of first aid measures**

**General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

**After inhalation:**

Take affected persons into fresh air and keep quiet.

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

**After skin contact:**

Flush immediately with plenty of water

If skin irritation continues, consult a doctor.

**After eye contact:**

Call a doctor immediately.

Rinse opened eye for several minutes under running water.

Remove contact lenses

**After swallowing:**

Call a doctor immediately.

Do not induce vomiting

Rinse mouth with water

Never give anything by mouth if victim is rapidly losing consciousness, unconscious or convulsing

**Most important symptoms and effects, both acute and delayed** No further relevant information available.

(Contd. on page 4)

**Flammability (solid, gas)**

Upper/lower flammability or explosive limits Not determined

Vapour Pressure, mmHg N/D

Vapour density

Relative density

Solubility in / Miscibility with water N/D

Partition coefficient: n-octanol/water

Auto-ignition temperature (°C)

Decomposition temperature (°C)

Viscosity Unknown

Explosive properties

Oxidising properties

**9.2 Other information**

VOC Content g/l: 222

Specific Gravity (g/cm<sup>3</sup>) 1.16

**10. Stability and Reactivity****10.1 Reactivity**

No reactivity hazards known under normal storage and use conditions.

**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

Hazardous polymerisation does not occur.

**10.4 Conditions to avoid**

Heat, flames and sparks.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke.



## 11. Toxicological Information

### 11.1 Information on toxicological effects

#### Acute Toxicity:

Oral LD50: N/D  
Inhalation LC50: N/D

Irritation: Unknown

Corrosivity: Unknown

Sensitization: Unknown

Repeated dose toxicity: Unknown

Carcinogenicity: Unknown

Mutagenicity: Unknown

Toxicity for reproduction: Unknown

If no information is available above under Acute Toxicity then the acute effects of this product have not been tested.

Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
25068-38-6	EPOXY RESIN	11400 mg/kg, rat, oral	23000 mg/kg, dermal, rabbit	>20 mL/kg skin, sensitizer

#### Additional Information:

May cause sensitization by skin contact. Irritating to eyes and skin. May be harmful if swallowed.

## 12. Ecological Information

### 12.1 Toxicity:

EC50 48hr (Daphnia): Unknown  
IC50 72hr (Algae): Unknown  
LC50 96hr (fish): Unknown

12.2 Persistence and degradability: Unknown

12.3 Bioaccumulative potential: Unknown

12.4 Mobility in soil: Unknown

12.5 Results of PBT and vPvB assessment: The product does not meet the criteria for PBT/vPvB in accordance with Annex XIII.

12.6 Other adverse effects: Unknown

CAS-No.	Chemical Name	EC50 48hr	IC50 72hr	LC50 96hr
25068-38-6	EPOXY RESIN	2.1 mg/l (daphnia)	11 mg/l (algae)	1.3 mg/l (fish)

### 13. Disposal Considerations

13.1 **WASTE TREATMENT METHODS:** Do not burn, or use a cutting torch on, the empty drum. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport Information

14.1 UN number	None
14.2 UN proper shipping name	Not Regulated
Technical name	N/A
14.3 Transport hazard class(es)	None
Subsidiary shipping hazard	N/A
14.4 Packing group	N/A
14.5 Environmental hazards	Marine Pollutant: Yes (Epoxy Resin)
14.6 Special precautions for user	Unknown
EmS-No.:	Unknown
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code	Unknown

### 15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation for the substance or mixture:

#### U.S. Federal Regulations: As follows -

##### CERCLA - Sara Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Acute Health Hazard, Chronic Health Hazard

##### Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

No Sara 313 components exist in this product.

##### Toxic Substances Control Act:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA 12(b) components exist in this product.

**U.S. Clean Air Act:**

- EPA Coating Category:
- EPA VOC Content Limit (g/l):
- Product VOC Content (g/l)
- Thinning Recommendations:
- Application Recommendations:

May be harmful if swallowed.

**U.S. State Regulations: As follows -**

**New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

No NJ Right-To-Know components exist in this product.

**Pennsylvania Right-To-Know**

The following non-hazardous ingredients are present in the product at greater than 3%.

No PA Right-To-Know components exist in this product.

**California Proposition 65:**

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

No Proposition 65 Carcinogens exist in this product.

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards.

No Proposition 65 Reproductive Toxins exist in this product.

**International Regulations: As follows -**

**\* Canadian DSL:**

No Information

**15.2 Chemical Safety Assessment:**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**16. Other Information**

**Text for GHS Hazard Statements shown in Section 3 describing each ingredient:**

- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H411 Toxic to aquatic life with long lasting effects.

**Reasons for revision**

No Information

No Information

Bitsumastic #10 Thinner

By

Carboline



**Safety Data Sheet**  
prepared to UN GHS Revision 3

## 1. Identification of the Substance/Mixture and the Company/Undertaking

- 1.1 **Product Identifier** 0510S1NL
- Product Name:** THINNER 10 **Revision Date:** 07/06/2015
- Supercedes Date:** 05/15/2015
- 1.2 **Relevant identified uses of the substance or mixture and uses advised against** Thinner for industrial coatings - Industrial use
- 1.3 **Details of the supplier of the safety data sheet**
- Manufacturer:** Carboline Company  
2150 Schuetz Road  
St. Louis, MO USA 63146
- Regulatory / Technical Information:**  
Contact Carboline Technical Services at  
1-800-848-4645
- Datasheet Produced by:** Schlereth, Ken - ehs@stoncor.com
- 1.4 **Emergency telephone number:** CHEMTREC 1-800-424-9300 (Inside US)  
CHEMTREC +1 703 5273887 (Outside US)  
HEALTH - Pittsburgh Poison Control 1-412-681-6669

## 2. Hazard Identification

### 2.1 Classification of the substance or mixture

Acute Toxicity, Dermal, category 4  
 Acute Toxicity, Inhalation, category 4  
 Aspiration Hazard, category 1  
 Flammable Liquid, category 3  
 STOT, single exposure, category 2  
 STOT, single exposure, category 3, RTI  
 Skin Irritation, category 2

## 2.2 Label elements

## Symbol(s) of Product



## Signal Word

Danger

## Named Chemicals on Label

ORTHO-XYLENE, ETHYL BENZENE, PARA-XYLENE, META-XYLENE, TOLUENE

## GHS HAZARD STATEMENTS

Flammable Liquid, category 3	H226	Flammable liquid and vapour.
Aspiration Hazard, category 1	H304	May be fatal if swallowed and enters airways.
Acute Toxicity, Dermal, category 4	H312	Harmful in contact with skin.
Skin Irritation, category 2	H315	Causes skin irritation.
Acute Toxicity, Inhalation, category 4	H332	Harmful if inhaled.
STOT, single exposure, category 3, RTI	H335	May cause respiratory irritation.
STOT, single exposure, category 2	H371	May cause damage to organs.

## GHS PRECAUTION PHRASES

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302	IF ON SKIN:
P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P309+P311	IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P331	Do NOT induce vomiting.
P332+313	If skin irritation occurs: Get medical advice/attention.
P352	Wash with plenty of soap and water.
P403+233	Store in a well-ventilated place. Keep container tightly closed.

## 2.3 Other hazards

Not applicable

## Results of PBT and vPvB assessment:

The product does not meet the criteria for PBT/vPvB in accordance with Annex XIII.

### 3. Composition/Information On Ingredients

## 3.2 Mixtures

## Hazardous Ingredients

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>%</u>
108-38-3	META-XYLENE	25-50

106-42-3	PARA-XYLENE
100-41-4	ETHYL BENZENE
95-47-6	ORTHO-XYLENE
108-88-3	TOLUENE

10-25
10-25
10-25
0.1-1.0

<u>CAS-No.</u>	<u>GHS Symbols</u>	<u>GHS Hazard Statements</u>	<u>M-Factors</u>
108-38-3	GHS02-GHS07	H226-312-315-332	0
106-42-3	GHS02-GHS07-GHS08	H226-312-315-332-335-371	0
100-41-4	GHS02-GHS07	H225-332	0
95-47-6	GHS02-GHS07	H226-312-315-332	0
108-88-3	GHS02-GHS07-GHS08	H225-315-319-336-361-373	0

**Additional Information:** The text for GHS Hazard Statements shown above (if any) is given in Section 16.

## 4. First-aid Measures

### 4.1 Description of First Aid Measures

**AFTER INHALATION:** Give oxygen or artificial respiration if needed. Remove person to fresh air. If signs/symptoms continue, get medical attention.

**AFTER SKIN CONTACT:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If skin irritation persists, call a physician.

**AFTER EYE CONTACT:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**AFTER INGESTION:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, call a poison control centre or doctor immediately.

### 4.2 Most important symptoms and effects, both acute and delayed

Harmful if swallowed. Irritating to eyes and skin. Risk of serious damage to the lungs (by aspiration). Vapours may cause drowsiness and dizziness.

### 4.3 Indication of any immediate medical attention and special treatment needed

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.

## 5. Fire-fighting Measures

### 5.1 Extinguishing Media:

Carbon Dioxide, Dry Chemical, Foam, Water Fog

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Flammable liquid. Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. Provide adequate ventilation. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Electrical installations / working materials must comply with the technological safety standards. Wear shoes with conductive soles.

### 5.2 Special hazards arising from the substance or mixture

No Information

### 5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. Cool containers / tanks with water spray. Flammable.

## 6. Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. Evacuate personnel to safe areas. Remove all sources of ignition. To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. Wear personal protective equipment.



**6.2 Environmental precautions**

Do not allow material to contaminate ground water system. Prevent product from entering drains.

**6.3 Methods and material for containment and cleaning up**

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

**6.4 Reference to other sections**

Please refer to disposal requirements or country specific disposal requirements for this material. See Section 13 for further information.

**7. Handling and Storage****7.1 Precautions for safe handling**

**INSTRUCTIONS FOR SAFE HANDLING :** Keep containers dry and tightly closed to avoid moisture absorption and contamination. Prepare the working solution as given on the label(s) and/or the user instructions. Do not breathe vapours or spray mist. Ensure all equipment is electrically grounded before beginning transfer operations. Do not use sparking tools. Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation/personal protection.

**PROTECTION AND HYGIENE MEASURES :** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke.

**7.2 Conditions for safe storage, including any incompatibilities**

**CONDITIONS TO AVOID:** Heat, flames and sparks.

**STORAGE CONDITIONS:** Keep container closed when not in use. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.

**7.3 Specific end use(s)**

No specific advice for end use available.

**8. Exposure Controls/Personal Protection****8.1 Control parameters****Ingredients with Occupational Exposure Limits (US)**

Name	%	ACGIH TLV- TWA	ACGIH TLV- STEL	OSHA PEL- TWA	OSHA PEL- CEILING	OEL Note
META-XYLENE	25-50	100 PPM	150 PPM	435 MG/M3	N/E	
PARA-XYLENE	10-25	100 PPM	150 PPM	435 MGM3	N/E	
ETHYL BENZENE	10-25	20 PPM	N/E	435 MGM3	N/E	
ORTHO-XYLENE	10-25	100 PPM	150 PPM	435 MG/M3	N/E	
TOLUENE	0.1-1.0	20 PPM	N/E	375 MGM3	N/E	

**FURTHER INFORMATION:** Refer to the regulatory exposure limits for the workforce enforced in each country.

**8.2 Exposure controls****Personal Protection**

**RESPIRATORY PROTECTION:** In order to avoid inhalation of spray-mist and sanding dust, all spraying and sanding must be done wearing adequate respirator. Use only with ventilation to keep levels below exposure guidelines reported in this document. User should test and monitor exposure levels to ensure all personnel are below guidelines. If not sure, or not able to monitor, use State or federally approved supplied air respirator. For silica containing coatings in a liquid state, and/or if no exposure limits are established above, air-supplied respirators are generally not required.

**EYE PROTECTION:** Safety glasses with side-shields.

**HAND PROTECTION:** Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Impervious gloves Request information on glove permeation properties from the glove supplier.

**OTHER PROTECTIVE EQUIPMENT:** Ensure that eyewash stations and safety showers are close to the workstation location. Lightweight protective clothing

**ENGINEERING CONTROLS:** Avoid contact with skin, eyes and clothing. Ensure adequate ventilation, especially in confined areas.

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

Appearance:	Clear Liquid
Physical State	Liquid
Odor	Solvent
Odor threshold	N/D
pH	N/D
Melting point / freezing point (°C)	N/D
Boiling point/range (°C)	278 F (136 C) - 288 F (142 C)
Flash Point, (°C)	27
Evaporation rate	Slower Than Ether
Flammability (solid, gas)	Not determined
Upper/lower flammability or explosive limits	1.1 - 7.1
Vapour Pressure, mmHg	6.4 mmHg@ 20C
Vapour density	Heavier than Air
Relative density	Not determined
Solubility in / Miscibility with water	N/D
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature (°C)	Not determined
Decomposition temperature (°C)	Not determined
Viscosity	Unknown
Explosive properties	Not determined
Oxidising properties	Not determined

### 9.2 Other information

VOC Content g/l:	866
Specific Gravity (g/cm3)	0.87

## 10. Stability and Reactivity

### 10.1 Reactivity

No reactivity hazards known under normal storage and use conditions.

### 10.2 Chemical stability

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

Hazardous polymerisation does not occur.

**10.4 Conditions to avoid**

Heat, flames and sparks.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke.**11. Toxicological Information****11.1 Information on toxicological effects****Acute Toxicity:**

Oral LD50: N/D

Inhalation LC50: N/D

Irritation: Unknown

Corrosivity: Unknown

Sensitization: Unknown

Repeated dose toxicity: Unknown

Carcinogenicity: Unknown

Mutagenicity: Unknown

Toxicity for reproduction: Unknown

If no information is available above under Acute Toxicity then the acute effects of this product have not been tested. Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
108-38-3	META-XYLENE	Not Available		Not Available
106-42-3	PARA-XYLENE	Not Available		Not Available
100-41-4	ETHYL BENZENE	3500 mg/kg rat, oral	>5000 mg/l, dermal rabbit	17.2 mg/L Inh, Rat, 4Hr
95-47-6	ORTHO-XYLENE	Not Available		Not Available
108-88-3	TOLUENE	5000 mg/kg rat oral	12267 mg/kg, dermal, rabbit	8000 ppm/4 hrs, rat, inhalation

**Additional Information:**

Harmful if swallowed. Irritating to eyes and skin. Risk of serious damage to the lungs (by aspiration). Vapours may cause drowsiness and dizziness.

## 12. Ecological Information

### 12.1 Toxicity:

EC50 48hr (Daphnia):	Unknown
IC50 72hr (Algae):	Unknown
LC50 96hr (fish):	Unknown

12.2 Persistence and degradability: Unknown

12.3 Bioaccumulative potential: Unknown

12.4 Mobility in soil: Unknown

12.5 Results of PBT and vPvB assessment: The product does not meet the criteria for PBT/vPvB in accordance with Annex XIII.

12.6 Other adverse effects: Unknown

CAS-No.	Chemical Name	EC50 48hr	IC50 72hr	LC50 96hr
108-38-3	META-XYLENE	No information	No information	No information
106-42-3	PARA-XYLENE	No information	No information	No information
100-41-4	ETHYL BENZENE	No information	No information	No information
95-47-6	ORTHO-XYLENE	No information	No information	No information
108-88-3	TOLUENE	6 mg/l (Daphnia magna)	12.5 mg/L (Algae)	5.8 mg/L (Fish)

## 13. Disposal Considerations

13.1 WASTE TREATMENT METHODS: Do not burn, or use a cutting torch on, the empty drum. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport Information

14.1 UN number	UN 1263
14.2 UN proper shipping name	Paint Related Material
Technical name	N/A
14.3 Transport hazard class(es)	3
Subsidiary shipping hazard	N/A
14.4 Packing group	III
14.5 Environmental hazards	Unknown
14.6 Special precautions for user	Unknown
EmS-No.:	F-E, S-E
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code	Unknown

## 15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation for the substance or mixture:

**U.S. Federal Regulations: As follows -****CERCLA - Sara Hazard Category**

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Acute Health Hazard

**Sara Section 313:**

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS-No.</u>
META-XYLENE	108-38-3
PARA-XYLENE	106-42-3
ETHYL BENZENE	100-41-4
ORTHO-XYLENE	95-47-6
TOLUENE	108-88-3

**Toxic Substances Control Act:**

All components of this product are either listed on the TSCA Inventory or are exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

<u>Chemical Name</u>	<u>CAS-No.</u>
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No TSCA 12(b) components exist in this product.

**U.S. State Regulations: As follows -****New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

No NJ Right-To-Know components exist in this product.

**Pennsylvania Right-To-Know**

The following non-hazardous ingredients are present in the product at greater than 3%.

No PA Right-To-Know components exist in this product.

**California Proposition 65:**

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

<u>Chemical Name</u>	<u>CAS-No.</u>
ETHYL BENZENE	100-41-4
BENZENE	71-43-2

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards.

<u>Chemical Name</u>	<u>CAS-No.</u>
TOLUENE	108-88-3
BENZENE	71-43-2

**International Regulations: As follows -****\* Canadian DSL:**

No Information

**15.2 Chemical Safety Assessment:**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

## 16. Other Information

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H361	Suspected of damaging fertility or the unborn child.
H371	May cause damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.

### Reasons for revision

No Information

No Information

Wax Tape Primer

By

Trenton



**Safety Data Sheet**  
US HCS, UN GHS, WHMIS 2015

**Section 1: Company and Product Identification**

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**1.1. Product Identification:**

**Product Name:** Wax-Tape® primer  
**Product Code(s):** WTP-1CN, WTP-3PL, WTP-5PL, WTP-T08, WTP-T16

**1.2. Product use(s) and applications advised against:**

**Product use(s):** Surface conditioner for above and belowground metal surfaces  
**Applications advised against:** Consult technical data sheet

**1.3. Details of the Supplier of the Safety Data Sheet**

**Company:** Trenton Corp  
7700 Jackson Road  
Ann Arbor, MI 48103  
PH 734-424-3600  
**Emergency Response:** CHEMTREC (24 hrs) 800-424-9300

**Section 2: Hazards Identification**

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**2.1 Classification of the Substance or Mixture**

**Hazard Category:** Non-classified

**2.2 GHS Label Elements**

**Signal Word:** Not Applicable

**Hazard Pictograms:**

**Hazard Statements:** Not Applicable

**Precautionary Statements:** Not Applicable

**2.3 Other Hazards** Not applicable, none known

**Section 3: Composition / Information on Ingredients**

---

**3.1 Hazardous Components**

Hazardous substance (name)	Hazard Category	CAS#	Weight %
Mineral oil, highly refined	Asp Tox 1	mixture	proprietary
microcrystalline wax blend	(see Section 8)	mixture	>50

**3.2 Other Information**

Aspiration toxicity for product is not applicable due to viscosity and/or product form  
The mineral oil does not contain impurities which would warrant the classification as a  
carcinogen / mutagen (<3% DMSO extract per IP 346, EU CLP Note L)

**Section 4: First Aid Measures**

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#### 4.1 Description of First Aid Measures

<b>General Info:</b>	Ensure proper ventilation during application / curing. Seek medical treatment if any excessive exposures result in symptoms.
<b>If ingested:</b>	Rinse mouth. Seek medical attention if symptoms develop. Do not induce vomiting.
<b>If inhaled:</b>	Remove to fresh air. Obtain medical attention if respiratory symptoms or other symptoms develop.
<b>Eye contact:</b>	Flush eyes with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Get medical attention if irritation develops or persists.
<b>Skin contact:</b>	Rinse with soap and water thoroughly. Get medical advice if irritation develops or persists.

#### 4.2 Most Important Symptoms and Effects, Acute and Delayed

<b>Notable Exposure symptoms:</b>	Excessive skin exposure may cause redness or irritation.
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#### Section 5: Fire Fighting Measures

<b>5.1 Extinguishing Media</b>	Carbon dioxide (CO <sub>2</sub> ), dry chemical, foam.
<b>5.2 Special Hazards Arising from Mixture</b>	Product will sustain burning. Constituents associated with burning / combustion are to be considered toxic.
<b>5.3 Advice for Firefighters / Protective equipment</b>	Firefighters should wear self-contained breathing apparatus (SCBA) and full protective equipment. Direct water spray may spread fire.

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#### Section 6: Accidental Release Measures

<b>6.1 Personal precautions, protective equipment and procedures:</b>	Product is a paste. Clean up mechanically, manually. Wear appropriate protective equipment and clothing during clean-up operations.
<b>6.2 Environmental Precautions:</b>	No special precautions.
<b>6.3 Methods and Materials for Containment and Cleanup</b>	Solid material can be collected and gathered mechanically.
<b>6.4 References to Other Sections</b>	For personal protection, see section 8 of the SDS. For disposal information, Section 13.

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#### Section 7: Handling and Storage

<b>7.1 Precautions for Safe Handling</b>	Do not handle until all safety precautions have been read and understood. Ensure adequate ventilation. Avoid contact with eyes, skin. Avoid prolonged exposure. Wear appropriate personal protective equipment.
<b>7.2 Recommendations for Storage:</b>	Store in cool area. Store away from strong acids or oxidizing agents. Refer to Section 10.

---

#### Section 8: Exposure Control / Personal Protection

## 8.1 Components with Exposure Control Limits

Substances with Exposure Limits	CAS#	ACGIH-TLV	OSHA-PEL
Mineral oil, highly refined	mixture	5 mg/m <sup>3</sup> (mist)	5 mg/m <sup>3</sup> (mist)
microcrystalline wax (as paraffin)	-	2 mg/m <sup>3</sup> (fume)	-

## 8.2 Exposure Controls

**Engineering Controls:** Ensure proper ventilation in enclosed spaces

**Work Clothing:** Protective work clothing which covers skin and prevents exposures

**Eye/face protection:** Safety glasses

**Skin Protection:** Wear solvent resistant gloves

**Respiratory Protection:** Utilize organic vapor respirator if airborne levels are not maintained below exposure limits, or if ventilation is inadequate

**Environmental:** No special considerations. Avoid release of material to surface waters.

**Exposure Controls:**

**Additional Information:** Observe good chemical hygiene practices. Do not smoke or eat while using this product. Wash hands or exposed skin after using the product. Cutting or grinding of the product may release substances which require monitoring (see chart above).

## Section 9: Physical and Chemical Properties

### 9.1 Physical/Chemical Properties

State: Paste	Melting Point: Not avail	Freezing Point: Not avail
Color: Brown	Boiling Point/Range: Not avail	pH: Not avail
Sp. Grav. <1	Odor: Mild petroleum	Water Solubility: Insoluble
Evaporation rate: Not avail	Flash Point: >200F	Part. Coeff (n octanol/water): Not avail
Upper Flam Limits: Not avail	Lower Flam Limits: Not avail	Vapor Pressure: Not avail
VOC Content (lbs/gal): Not avail	Viscosity: Not avail	Autoignition Temp: Not avail

**9.2 Other Information:** No further information

## Section 10: Stability and Reactivity

<b>10.1 Reactivity:</b>	This product is stable and non-reactive under normal conditions of use. Product is not subject to hazardous polymerization
<b>10.2 Chemical Stability:</b>	Product is stable under normal working conditions. Avoid extreme temperatures.
<b>10.3 Possibility of Hazardous Reactions:</b>	Unlikely under normal use. No further information
<b>10.4 Conditions to Avoid:</b>	Avoid extreme temperatures, flame, oxidizers, and acids / bases
<b>10.5 Incompatible Materials:</b>	No specific information. Avoid strong oxidizers and corrosive materials

**10.6 Hazardous  
Decomposition Products**

No known decomposition products under normal circumstances. If burned, product may emit toxic fumes.

**Section 11: Toxicological Information**

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**11.1 Information on  
Toxicological Effects**

**General Information:** Product has not been tested, but is expected to pose a low level of hazard when handled under normal circumstances

**Acute Toxicity (Oral):** Not tested. Not expected to pose an oral toxicity concern; LD50 >5000 mg/kg

**Acute Toxicity (Dermal):** Skin contact is not expected to pose any dermal toxicity.

**Acute Toxicity (Inhalation):** No further information

**Skin Corrosion / Irritation:** Not expected to be an irritant. Prolonged exposure may lead to irritation or redness in certain individuals

**Eye Corrosion / Irritation:** Product is not expected to be an acute eye irritant

**Sensitization:** No further information

**Carcinogenicity / Mutagenicity:** Product is not classified as a mutagen / carcinogen

**Toxicological Information (contained substances)**

Hazardous substance (name)	LD50 Oral	LD50 Dermal	LC50 Inh	Irritancy:
mineral oil, highly refined	>2000 mg/kg (rat)	>5000 mg/kg (rabbit)	-	NA

**Section 12: Ecological Information**

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**12.1 Toxicity:** No specific data available

**12.2 Persistence and Degradability:** No specific data available. Contained oils are expected to degrade rapidly in the environment

**12.3 Bioaccumulation Potential:** No specific data available.

**12.4 Mobility in Soil:** No further information available.

**12.5 Results of PBT and vPvB Assessment:** Assessment not carried out. Product does not contain any PBT / vPvB constituents

**12.6 Other Adverse Effects:** No further information available.

**Section 13: Disposal Information**

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**13.1 Waste Treatment  
Methods**

**Product disposal:** Dispose of product in accordance with local, regional, and national regulations. Consult with waste contractor.

**Container disposal:** Packaging of product may contain small amounts of residual product which can be discarded

**Other considerations:** No further information

**Section 14: Transport Information**

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DOT: Not regulated  
IMO/IMDG: Not regulated  
IATA: Not regulated  
ADR: Not regulated  
OTHER: No further information

**Section 15: Regulatory Information**

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TSCA: All components listed on the TSCA 8(b) inventory  
CERCLA RQ: Not applicable  
SARA 311/312: Not applicable  
SARA 313 Not applicable  
California Prop 65 No known Proposition 65 substances  
Substances:  
Canadian DSL: All substances in product are listed on the DSL  
WHMIS: Product is not WHMIS 2015 classified. See Section 3 for disclosure substances, if applicable

**Section 16: Other Information**

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SDS Author: A Hahn, CCS LLC Version Date: 6/1/2015

*The provider of this SDS urges the buyer or user to study it carefully and consult with appropriate expertise, as necessary to become aware of and understand the data contained herein. This information is provided in good faith and is believed to be accurate as of the effective date, or version date shown. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer or user's responsibility to ensure that its activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. It is the buyer's user's duty to determine the conditions necessary for the safe use of this product. Information regarding the exact chemical identity or concentration of certain substances may be reserved as a trade secret as per 29 CFR 1910.1200(i).*

Wax Tape #1

By

Trenton

**Section 1: Company and Product Identification**

---

**1.1. Product Identification:**

**Product Name:** Wax-Tape® #1 anticorrosion wrap  
**Product Code(s):** 1WT-02-09-KIT, 1WT04-09, 1WT04-09-KIT, 1WT04-09-KIT-01, 1WT04-18-KIT, 1WT04-18KIT-01, 1WT06-09, 1WT06-09-KIT, 1WT-06-18, 1WT12-18, HI-MELT, WTS-1

**1.2. Product use(s) and applications advised against:**

**Product use(s):** Anticorrosion wrap tape for piping systems  
**Applications advised against:** Consult technical data sheet

**1.3. Details of the Supplier of the Safety Data Sheet**

**Company:** Trenton Corp  
7700 Jackson Road  
Ann Arbor, MI 48103  
PH 734-424-3600  
**Emergency Response:** CHEMTREC (24 hrs) 800-424-9300

**Section 2: Hazards Identification**

---

**2.1 Classification of the Substance or Mixture**

**Hazard Category:** Non-classified

**2.2 GHS Label Elements**

**Signal Word:** Not Applicable

**Hazard Pictograms:**

**Hazard Statements:** Not Applicable

**Precautionary Statements:** Not Applicable

**2.3 Other Hazards** Not applicable, none known

**Section 3: Composition / Information on Ingredients**

---

**3.1 Hazardous Components**

Hazardous substance (name)	Hazard Category	CAS#	Weight %
petroleum hydrocarbon	Asp. Tox 1	-	proprietary
microcrystalline wax blend	(See Section 8)	-	>50

**3.2 Other Information**

Aspiration toxicity for product is not applicable due to viscosity and/or product form  
 The oil(s) contained in this product do not contain impurities which would warrant the classification as a carcinogen / mutagen (IP 346, EU CLP Note L)

**Section 4: First Aid Measures**

---

#### 4.1 Description of First Aid Measures

<b>General Info:</b>	Ensure proper ventilation during application / curing. Seek medical treatment if any excessive exposures result in symptoms.
<b>If ingested:</b>	Rinse mouth. Seek medical attention if symptoms develop. Do not induce vomiting.
<b>If inhaled:</b>	Remove to fresh air. Obtain medical attention if respiratory symptoms or other symptoms develop.
<b>Eye contact:</b>	Flush eyes with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Get medical attention if irritation develops or persists.
<b>Skin contact:</b>	Rinse with soap and water thoroughly. Get medical advice if irritation develops or persists.

#### 4.2 Most Important Symptoms and Effects, Acute and Delayed

<b>Notable Exposure symptoms:</b>	Excessive skin exposure may cause redness or irritation.
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#### Section 5: Fire Fighting Measures

<b>5.1 Extinguishing Media</b>	Carbon dioxide (CO <sub>2</sub> ), dry chemical, foam.
<b>5.2 Special Hazards Arising from Mixture</b>	Product will sustain burning. Constituents associated with burning / combustion may be noxious or toxic.
<b>5.3 Advice for Firefighters / Protective equipment</b>	Firefighters should wear self-contained breathing apparatus (SCBA) and full protective equipment. Direct water spray may spread fire.

---

#### Section 6: Accidental Release Measures

<b>6.1 Personal precautions, protective equipment and procedures:</b>	Product is a solid / tape wrap. Clean up mechanically, manually. Wear appropriate protective equipment and clothing during clean-up operations. Avoid breathing vapors. Ventilate area if easy to do so.
<b>6.2 Environmental Precautions:</b>	No special precautions. Avoid release of large quantities to environment.
<b>6.3 Methods and Materials for Containment and Cleanup</b>	Solid material can be collected and gathered mechanically.
<b>6.4 References to Other Sections</b>	For personal protection, see section 8 of the SDS. For disposal information, Section 13.

---

#### Section 7: Handling and Storage

<b>7.1 Precautions for Safe Handling</b>	Do not handle until all safety precautions have been read and understood. Ensure adequate ventilation. Avoid contact with eyes and skin. Avoid prolonged exposure. Wear appropriate personal protective equipment.
<b>7.2 Recommendations for Storage:</b>	Store in cool area. Store away from strong acids or oxidizing agents. Refer to Section 10.

---

#### Section 8: Exposure Control / Personal Protection

##### 8.1 Components with Exposure Control Limits

Substances with Exposure Limits	CAS#	ACGIH-TLV	OSHA-PEL
petroleum hydrocarbon	mixture	5 mg/m <sup>3</sup> (mist)	5 mg/m <sup>3</sup> (mist)
microcrystalline wax (as paraffin)	-	2 mg/m <sup>3</sup> (fume)	-

## 8.2 Exposure Controls

**Engineering Controls:** Ensure proper ventilation in enclosed spaces

**Controls:**

**Work Clothing:** Protective work clothing which covers skin and prevents exposures.

**Eye/face protection:** No specific eyewear necessary under normal product use.

**Skin Protection:** Wear oil resistant gloves.

**Respiratory Protection:** Not required under normal conditions of use. Utilize organic vapor respirator if airborne levels are

not maintained below exposure limits, or if ventilation is inadequate and high concentrations are present.

**Environmental Exposure Controls:** No special considerations

**Exposure Controls:**

**Additional Information:** Observe good chemical hygiene practices. Do not smoke or eat while using this product. Wash

hands or exposed skin after using the product.

## Section 9: Physical and Chemical Properties

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### 9.1 Physical/Chemical Properties

State: Solid / waxy	Melting Point: 115-125F	Freezing Point: Not avail
Color: Brown	Boiling Point/Range: Not avail	pH: Not avail
Sp. Grav. <1	Odor: Petroleum bland	Water Solubility: Insoluble
Evaporation rate: Not avail	Flash Point: >150C	Part. Coeff (n-octanol/water): Not avail
Upper Flam Limits: Not avail	Lower Flam Limits: Not avail	Vapor Pressure: Not avail
VOC Content (lbs/gal): Not avail	Viscosity: Not avail	Autoignition Temp: Not avail

**9.2 Other Information:** No further information

## Section 10: Stability and Reactivity

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<b>10.1 Reactivity</b>	This product is stable and non-reactive under normal conditions of use. Product is not subject to hazardous polymerization.
<b>10.2 Chemical Stability</b>	Product is stable under normal working conditions. Avoid extreme temperatures.
<b>10.3 Possibility of Hazardous Reactions</b>	Unlikely under normal use. No further information.
<b>10.4 Conditions to Avoid</b>	Avoid extreme temperatures, flame, oxidizers, and acids / bases.
<b>10.5 Incompatible Materials</b>	No specific information. Avoid strong oxidizers and corrosive materials.
<b>10.6 Hazardous Decomposition Products</b>	No known decomposition products under normal circumstances. If burned, product may emit toxic fumes.

## Section 11: Toxicological Information

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## 11.1 Information on Toxicological Effects

**General Information:** Product has not been tested, but is expected to pose a low level of hazard when handled under normal circumstances.

**Acute Toxicity (Oral):** Not tested. May be harmful if appreciable quantities are swallowed.

**Acute Toxicity (Dermal):** Skin contact is not expected to pose any dermal toxicity.

**Acute Toxicity (Inhalation):** No further information.

**Skin Corrosion / Irritation:** Not expected to be an irritant. Prolonged exposure may lead to irritation or redness in certain individuals.

**Eye Corrosion / Irritation:** Product is not expected to be an acute eye irritant.

**Sensitization:** No further information.

**Carcinogenicity / Mutagenicity:** Product is not classified as a mutagen / carcinogen.

### Toxicological Information (contained substances)

Hazardous substance (name)	LD50 Oral	LD50 Dermal	LC50 Inh	Irritancy:
petroleum hydrocarbon	>2000 mg/kg (rat)	>5000 mg/kg (rabbit)	-	non-irritant

## Section 12: Ecological Information

- 12.1 Toxicity:** No specific data available.
- 12.2 Persistence and Degradability:** No specific data available. Contained oils are expected to degrade rapidly in the environment. Substrate is not expected to rapidly degrade.
- 12.3 Bioaccumulation Potential:** No specific data available.
- 12.4 Mobility in Soil:** No specific data available.
- 12.5 Results of PBT and vPvB Assessment:** Assessment not carried out. Product does not contain any PBT / vPvB constituents.
- 12.6 Other Adverse Effects:** No further information available.

## Section 13: Disposal Information

### 13.1 Waste Treatment Methods

**Product disposal:** Dispose of product in accordance with local, regional, and national regulations. Consult with waste contractor.

**Container disposal:** Packaging of product may contain small amounts of residual product which can be discarded.

**Other considerations:** No further information.

## Section 14: Transport Information

**DOT:** Not regulated

**IMO/IMDG:** Not regulated

IATA: Not regulated  
ADR: Not regulated  
OTHER: No further information

**Section 15: Regulatory Information**

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TSCA: All components listed on the TSCA 8(b) inventory.  
CERCLA RQ: Not applicable  
SARA 311/312: Not applicable  
SARA 313 Not applicable  
California Prop 65 No known Proposition 65 substances  
Substances:  
Canadian DSL: All substances in product are listed on the DSL  
WHMIS: Product is not WHMIS 2015 classified See Section 3 for disclosure substances, if applicable.

**Section 16: Other Information**

---

SDS Author: A.Hahn, CCS LLC Version Date: 6/1/2015

*The provider of this SDS urges the buyer or user to study it carefully and consult with appropriate expertise, as necessary to become aware of and understand the data contained herein. This information is provided in good faith and is believed to be accurate as of the effective date, or version date shown. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer or user's responsibility to ensure that its activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. It is the buyer's user's duty to determine the conditions necessary for the safe use of this product. Information regarding the exact chemical identity or concentration of certain substances may be reserved as a trade secret as per 29 CFR 1910.1200(i).*

Continuing

Conf. Co.

Protal 7000 (B)

By

Denso



# SAFETY DATA SHEET

According to 29 CFR 1910.1200(g)

## PROTAL 7000 PART B (HARDENER)

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product name PROTAL 7000 Part B (Hardener)

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Product Use Industrial use as a protective coating in prevention of corrosion.

Restricted Use Not intended for use by general public.

#### 1.3. Details of the supplier of the safety data sheet

Company Denso North America

Address 9747 Whithorn Drive

Houston, TX 77095

Web [www.densona.com](http://www.densona.com)

Telephone 1 (281) 821-3355

Fax 1 (281) 821-0304

Email [info@densona.com](mailto:info@densona.com)

#### 1.4. Emergency telephone number

Emergency telephone number (24 Hour) 1-801-629-0667

### SECTION 2: Hazards Identification

#### 2.1. Classification of the substance or mixture

2.1.1. Health  
Acute Toxicity, Oral – Category 4  
Skin Irritation – Category 2  
Eye Damage – Category 2  
Skin sensitizer – Category 1  
Specific Target Organ Toxicity – Single Exposure – Category 3 (Inhalation)  
Specific Target Organ Toxicity – Repeated Exposure – Category 2 (Inhalation, Ingestion)

2.1.2. Environmental  
Acute aquatic toxicity – Category 2  
Chronic aquatic toxicity – Category 2

2.1.3. Physical  
None

#### 2.2. Label elements

##### Hazard pictograms



Signal Word

Danger



# SAFETY DATA SHEET

According to 29 CFR 1910.1200(g)

Hazard statement	H302 – Harmful if swallowed. H315 – Causes skin irritation. H317 – May cause an allergic skin reaction. H319 – Causes serious eye irritation. H335 – May cause respiratory irritation. H373 – May cause damage to organs (eyes, lungs, CNS, liver, kidneys, heart) through prolonged or repeated exposure if inhaled or ingested. H411 – Toxic to aquatic life with long-lasting effects.
Precautionary Statement: Prevention	P102 – Keep out of reach of children. P202 – Do not handle until all safety precautions have been read and understood P233 – Keep container tightly closed. P234 – Keep only in original container. P235 – Store in a well ventilated place. Keep cool. P261 – Avoid breathing dust/fume/gas/mist/vapors/spray. P262 – Do not get in eyes, on skin, or on clothing. P264 – Wash thoroughly after handling. P270 – Do not eat, drink, or smoke when using this product. P271 – Use only outdoors or in a well-ventilated area. P272 – Contaminated work clothing should not be allowed out of the workplace. P273 – Avoid release to the environment. P280 – Wear protective gloves/protective clothing/eye protection/face protection. P284 – In case of inadequate ventilation, wear respiratory protection.
Precautionary Statement: Response	P301+P310+P331 – IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting. P303+P361+P353+P352 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash with plenty of soap and water. P304+P340+P310 – IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. P305+P351+P338+P310 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor. P314 – Get medical advice / attention if you feel unwell. P333+P313 – If skin irritation or rash occurs: Get medical advice/attention. P337+P313 – If eye irritation persists: Get medical advice/attention. P363 – Wash contaminated clothing before reuse. P391 – Collect spillage.
Precautionary Statement: Disposal	P501 – Dispose of contents/container in accordance with local/regional/national/international regulations.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances



# SAFETY DATA SHEET

According to 29 CFR 1910.1200(g)

Chemical Name	CAS No.	Concentration (%w/w)	Classification
N-Aminoethylpiperazine	140-31-8	10-30%	Skin Irr 2; H315 Eye Irr 2; H319 Aqua Acute/Chronic 2; H411
4,4'-Isopropylidene-diphenol	80-05-7	1-10%	(1) (2)
Reaction product: bisphenol-A- (epichlorohydrin); epoxy resin (number average molecular weight < 700)	25068-38-6	5-20%	Skin Irr 2; H315 Eye Irr 2; H319 Skin Sens 1; H317 Aq Chronic 2; H411
Triethylenetetramine	112-24-3	1-10%	Acute Tox (Oral) 4; H302 Acute Tox (Derm) 4; H312 Skin Irr 1B; H314 Skin Sens 1; H317 Aqua Chronic 3; H412
Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	68410-23-1	10-30%	Acute Tox (Oral) 4; H302 Eye Irr 2; H319 STOT SE (Inh) 3; H335
Benzyl dimethylamine	103-83-3	1-5%	Flam Liq 3; H226 Acute Tox (Oral) 4; H302 Acute Tox (Derm) 4; H312 Acute Tox (Inh) 4; H332 Skin Irr 1B; H314
Aminoethyl aminopropyl trimethoxy silane (3)	1760-24-3	1-10%	Acute Tox (Oral) 1; H300 Skin Sens 1; H317 STOT SE (Inh) 2; H336 STOT SE (Oral) 2; H372
4-Nonyl phenol, branched	84852-15-3	1-10%	Skin Irr 2; H315 Eye Irr 2; H319 Aqua Acute/Chronic 1; H411

NOTES:

- (1) Substance classified with a health or environmental hazard.
- (2) Substance with a workplace exposure limit.
- (3) Contains small quantities of methanol and may generate methanol upon contact with moisture.

**SECTION 4: First aid measures**

4.1. General advice      Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.







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According to 29 CFR 1910.1200(g)

between swallowing methanol and the onset of signs and symptoms. 60-200 ml of methanol is a fatal dose for most adults. Ingestion of as little as 10 ml methanol has caused blindness. With massive overdoses, liver, kidney and heart muscle injuries have been described.

## Inhalation

Vapors are irritating to the eyes, nose, throat, and lungs. May cause irritation to respiratory system with throat discomfort, coughing or difficulty breathing. Product contains small amount of methanol and a component that may produce methanol in contact with moisture. Methanol vapor may cause dizziness, drowsiness, disturbances of vision, and tingling, numbness, and shooting pains in the hands are forearms. Long-term, repeated overexposure to methanol vapor concentrations of 3000 ppm or greater may allow a cumulative effect to occur with resulting nausea, vomiting, headache, ringing in the ears, insomnia, trembling, unsteady gait, vertigo, clouded and double vision. Liver and/or kidney injury may occur. Prolonged over exposure at levels of 800-1000 ppm may result in severe eye damage in some persons.

## SECTION 5: Firefighting measures

- |   |   |
|---|---|
| 5.1. Suitable extinguishing media                   | Alcohol-resistant foam, Carbon dioxide (CO <sub>2</sub> ), Dry chemical, or water spray. Do not use a solid water stream as it may scatter and spread fire.   |
| 5.2. Specific hazards                               | Decomposition products may include the following materials: carbon oxides; nitrogen oxides. Downwind personnel must be evacuated. Burning produces noxious and toxic fumes.                           |
| 5.3. Special protective equipment for fire-fighters | Avoid contact with skin. Fire-fighters should wear appropriate personal protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| 5.4. Further information                            | Do not allow run-off from fire-fighting to enter drains or water courses. Component of this product reacts with water to produce methanol.  |

## SECTION 6: Accidental release measures

- |                                |   |
|--------------------------------|---|
| 6.1. Personal precautions      | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled materials. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8). |
| 6.2. Environmental precautions | Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).  |
| 6.3. Methods for cleaning up   | Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Use absorbent with inert material. Vacuum or sweep up material and place in a designated, labeled waste   |



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According to 29 CFR 1910.1200(g)

container. Dispose of via a licensed, waste-disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

6.4. Additional advice Stop leak if without risk.

## SECTION 7: Handling and storage

7.1. Handling Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking or smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

7.2. Storage Store in accordance with local regulations. Store in original container in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep away from heat, sparks, and flames. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3. Technical precautions Do not store in reactive metal containers.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

8.1.1. Exposure Limit Values	CAS No.	ACGIH TLV
	140-31-8	None established
	80-05-7	5 mg/m <sup>3</sup> (dust)
	25068-38-6	None established
	112-24-3	None established
	68410-23-1	None established
	103-83-3	None established
	1760-24-3	None established
	84852-15-3	None established

### 8.2. Control measures / Personal Protection

8.2.1. Recommended monitoring procedures To meet the exposure limits for the materials listed above, personal workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.2.2. Engineering measures Use only with adequate ventilation. If user operations generate dust, fumes, gas,



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According to 29 CFR 1910.1200(g)

vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

- 8.2.3. Hygiene measures Wash hands, forearms, and face after handling chemical products, before eating, smoking or using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing or discard as necessary. Ensure that eyewash stations/bottles with pure water and safety showers are close to the workstation location.
- 8.2.4. Respiratory protection Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Select equipment to provide protection from the ingredients in Section 3 of this document.
- 8.2.5. Eye protection Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. This may include, but is not limited to, safety glasses, goggles and face shields.
- 8.2.6. Skin protection Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. This equipment may include, but is not limited to, impervious gloves, gauntlets, impervious shoes/boots, and protective clothing. The breakthrough time of the selected protective glove(s), shoes and clothing must be greater than the intended use period.
- 8.2.7. Environmental exposure controls Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. Environmental exposure controls may also include dikes or other liquid containment devices.

## SECTION 9: Physical and chemical properties

Form	Liquid	Vapor Pressure	ND
Color	Yellow	Relative vapor density	>1
Odor	Irritating	Relative density	1.04
Odor threshold	ND	Water solubility	Slight
pH	about 10	Partition coefficient (n-octanol/water)	ND
Freezing point	ND	Auto-ignition temperature	ND
Boiling point	ND	Decomposition temperature	ND
Flash Point	ND	Viscosity	7,000 cP @ 73°F (22°C)
Evaporation rate	N/A	Oxidizing	N/A
Flammable Limits	ND	Explosion Limits	ND



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According to 29 CFR 1910.1200(g)

## SECTION 10: Stability and reactivity

10.1 Stability	The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
10.2. Conditions to avoid	Heat, flames, sources of ignition.
10.3. Materials to avoid	Reactive or incompatible with the following materials: Strong oxidizing agents, acids, alcohols, cresol, glycol, isocyanates, phenol, vinyl acetates, strong bases
10.4. Other hazards	Reacts with considerable heat release.
10.5. Hazardous decomposition products	Decomposition products may include the following materials: Carbon oxides, Nitrogen oxides, Ammonia, Toxic/Noxious fumes.

## SECTION 11: Toxicological information

11.1. Acute health hazard	<b>Product:</b> Acute oral toxicity: ND Acute dermal toxicity: ND <b>Components:</b> 140-31-8 Acute oral toxicity: LD50 (rabbit): 2097 mg/kg Acute dermal toxicity: LD50 (rabbit): 866 mg/kg  80-05-7 Acute oral toxicity: LD50 (rat): 3,250 mg/kg Acute dermal toxicity: LD50 (rabbit): 3,000 mg/kg  25068-38-6 Acute oral toxicity: LD50 (rat): 30,000 mg/kg Acute dermal toxicity: LD50 (rat): >1,200 mg/kg  112-24-3 Acute oral toxicity: LD50 (rat): >300-2,000 mg/kg Acute dermal toxicity: LD50 (rat): >1,000-2,000 mg/kg  68410-23-1 Acute oral toxicity: LD50 (rat): >5,000 mg/kg Acute dermal toxicity: LD50 (rat): >5,000 mg/kg  103-83-3 Acute oral toxicity: LD50 (rat): 265 mg/kg Acute dermal toxicity: LD50 (rabbit): 1,660 mg/kg Acute inhalation toxicity: LC50 (rat): 2.06 mg/L (4 h)  1760-24-3 No data available.
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# SAFETY DATA SHEET

According to 29 CFR 1910.1200(g)

84852-15-3

Acute oral toxicity: LD50 (rat): 580 mg/kg

Acute dermal toxicity: LD50 (rabbit): 2,031 mg/kg

## 11.2. Skin corrosion or irritation

**Product:** No data available, but likely to cause skin irritation or burns based on components present.

**Components:**

140-31-8	adult rabbit	corrosive to skin
25068-38-6	adult rabbit	slight to moderate irritation to skin
112-24-3		Causes burns.
68410-23-1		Slightly irritating.
103-83-3		Strongly corrosive to skin.
84852-15-3	rabbit	severe irritation and burns

No skin irritation data available or sufficient for classification for other components present.

## 11.3. Serious eye damage or irritation

**Product:** No data available, but likely to be corrosive to eyes and may cause severe damage including blindness based on components present.

**Components:**

140-31-8	adult rabbit	corrosive to eyes
25068-38-6	adult rabbit	slightly irritating
112-24-3		Causes serious eye damage.
68410-23-1		Severely irritating.
103-83-3		Strongly corrosive to eyes.
84852-15-3	rabbit	severe irritation and burns

No eye irritation data available or sufficient for classification for other components present.

## 11.4. Respiratory or skin sensitization

**Product:** No data available, but may cause skin sensitization in susceptible persons based on components present. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. May aggravate pre-existing skin conditions like dermatitis.

**Components:**

140-31-8	adult guinea pig	Causes skin sensitization
25068-38-6	adult guinea pig	Causes skin sensitization
112-24-3	adult guinea pig	May cause sensitization by skin contact.
84852-15-3	guinea pig	not sensitizing

No sensitization data available or sufficient for classification for other components present.

## 11.5. Germ cell mutagenicity

**Product:** No data available, but not likely to be mutagenic based on components.

**Components:**



# SAFETY DATA SHEET

According to 29 CFR 1910.1200(g)

Remarks: None of the components is known to have significant mutagenic effects.

- 11.6. Carcinogenicity **Product:** No data available.  
**Components:** None of the components is classified as a carcinogen.
- 11.7. Reproductive toxicity **Product:** Not Determined.  
**Components:** None of the components is known to have significant reproductive effects.
- 11.8. STOT – single exposure **Product:** No data available, but irritation, sensitization and/or burns to respiratory system, skin, and eyes are likely– Lungs, Skin, and Eyes. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. May aggravate pre-existing skin conditions like dermatitis.  
**Components:**  
See Sections 11.2, 11.3, and 11.4 for specific information regarding the effects of the components.
- 11.9. STOT – repeated exposure **Product:** No data available, but, based on components, may cause damage to organs through prolonged or repeated exposure – Kidneys, CNS, Heart, Liver, Lungs, Skin, and Eyes.
- 11.10. Repeated dose toxicity **Product:** No data available, but, based on components, Causes skin and eye irritation, damage, burns. Changes to the kidneys, CNS, heart, liver, lungs, skin and eyes possible.
- 11.11. Aspiration toxicity **Product:** Not determined.  
**Components:** Not determined.
- 11.12. Further information Likely routes of exposure – inhalation; skin and eye contact.

## SECTION 12: Ecological information

- 12.1. Ecotoxicity **Product:** No data available, but likely to be toxic to aquatic life based on components present.  
**Components:**  
140-31-8  
Toxicity to fish – 96 h LC50: >100 mg/L  
Toxicity to daphnia and other aquatic invertebrates – 48 h LC50: 32 mg/L  
Toxicity to algae – 72 h LC50: >1,000 mg/L  
  
80-05-7  
Toxicity to fish – 96 h LC50: 4.6 mg/L  
  
25068-38-6  
Toxicity to fish – 96 h LC50: 3.1 mg/L Test type: Fathead minnow  
Toxicity to daphnia and other aquatic invertebrates – 48 h



# SAFETY DATA SHEET

According to 29 CFR 1910.1200(g)

LC50: 1.3 mg/L

112-24-3

Toxicity to fish – 96 h LC50: >100 mg/L  
Toxicity to daphnia and other aquatic invertebrates – 48 h  
LC50: >10-100 mg/L  
Toxicity to algae – 72 h LC50: >10-100 mg/L

1760-24-3

Toxicity to fish – 96 h LC50: >100 mg/L  
Toxicity to daphnia and other aquatic invertebrates – 48 h  
LC50: 87.4 mg/L  
Toxicity to algae – 96 h LC50: 8.8 mg/L

84852-15-3

Toxicity to fish – 96 h static LC50: 0.05 mg/L  
Toxicity to daphnia and other aquatic invertebrates – 48 h static  
EC50: 0.085 mg/L  
Toxicity to algae – 96 h ErC50: 0.41 mg/L

No Ecotoxicity data available or sufficient for classification for other components present.

## 12.2. Persistence and degradability

**Product:** No data available, but likely to be persistent based on components present.

**Components:**

140-31-8 Remarks: <60% after 28 days.  
25068-38-6 Remarks: 12% after 28 days.  
112-24-3 Remarks: Not readily biodegradable.  
1760-24-3 Remarks: This component degrades through hydrolysis into alcohols and silanol- and/or siloxanol compounds.  
84852-15-3 Remarks: 100% after 63 days.

No persistence data available or sufficient for classification for other components present.

## 12.3. Bioaccumulative potential

**Product:** No data available  
**Components:** Not determined.

## 12.4. Mobility in soil

**Product:** Not determined.  
**Components:** Not determined.

## 12.5. Other adverse effects

**Product:** Not determined. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal, toxic to aquatic life with long-lasting effects.  
**Components:** No data available

## SECTION 13: Disposal considerations



# SAFETY DATA SHEET

According to 29 CFR 1910.1200(g)

### 13.1. Waste disposal

The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional and local authority requirements. Avoid disposal of spilled material and runoff and contaminated soils in waterways, drains or sewers. Dispose of contaminated containers, soils, etc. in compliance with the requirements of environmental protection and waste disposal legislation and any regional and local authority requirements. Empty any remaining contents from packaging prior to disposal and dispose of as unused product. Do not reuse empty containers.

## SECTION 14: Transport information



14.1. UN number UN3066

14.2. UN proper shipping name PAINT

### 14.3. Transport hazard class

International Carriage of

Dangerous Good by

Road/Rail

ADR/RID: 8

International Maritime

Dangerous Goods

IMDG: 8

International Air Transport

Association

IATA: 8

US Code of Federal

Regulations

CFR 8

Canadian Transportation of

Dangerous Goods

TDG: 8

US Department of

Transportation

DOT: 8

14.4. Packing group II

### 14.5. Environmental hazards

Environmental hazards: Yes Marine pollutant: Yes

IMDG

EmS Code: F-A S-B

IATA





# SAFETY DATA SHEET

According to 29 CFR 1910.1200(g)

Packing Instruction (Cargo): 855 Maximum quantity: 30 L  
Packing instruction (Passenger): 851 Maximum quantity: 1 L

## SECTION 15: Regulatory information

15.1. OSHA Hazards	Irritant, Sensitizer, Corrosive			
15.2. CERCLA Reportable Quantity	Components	CAS No.	Component RQ	Product RQ
	None			
15.3. SARA 314 Extremely Hazardous Substances Reportable Quantity	This material does not contain any components with a section 314 Extremely Hazardous Substances RQ.			
15.4. SARA 311/312 Hazards	Acute health hazard, Chronic health hazard			
15.5. SARA Title III, Section 302 Reporting	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.			
15.6. SARA Title III, Section 313 Reporting	The following chemicals in this material are subject to the reporting requirements of SARA Title III, Section 313: 4,4'-Isopropylidenediphenol			
15.7. Clean Air Act	The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61): None.			
	This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).			
	The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489): None.			
15.8. Clean Water Act	The following Hazardous Substances are listed under the U.S. Clean Water Act, Section 311, Table 116.4A: None.			
	The following Hazardous Substances are listed under the U.S. Clean Water Act, Section 311, Table 117.3: None.			
	This product contains the following toxic pollutants listed under the U.S. Clean Water Act, Section 307: None.			
15.9. US State Regulations	Massachusetts Right-To-Know			
	4,4'-Isopropylidenediphenol	80-05-7		
	N-aminoethylpiperazine	140-31-8		
	Pennsylvania Right-To-Know			
	4,4'-Isopropylidenediphenol	80-05-7		
	N-aminoethylpiperazine	140-31-8		



# SAFETY DATA SHEET

According to 29 CFR 1910.1200(g)

### New Jersey Right-To-Know

4,4'-Isopropylidenediphenol	80-05-7
N-aminoethylpiperazine	140-31-8
Benzyltrimethylamine	103-83-3

### California Prop 65

This product contains no chemicals known to the State of California to cause cancer.  
 This product contains no chemicals known to the State of California to cause birth defects or other reproductive harm.

### 15.10. International Chemical Inventory Listing

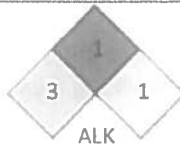
TSCA (US)	Yes (All components of this product are on US inventory)
DSL (Canada)	Yes (All components of this product are on Canadian inventory)
AICS (Australia)	Yes (On Australian inventory or in compliance with inventory)
ICS (New Zealand)	Yes (On New Zealand inventory or in compliance with inventory)
ENCS (Japan)	Yes (On Japanese inventory or in compliance with inventory)
ISHL (Japan)	Yes (On Japanese inventory or in compliance with inventory)
KECI (Korea)	Yes (On Korean inventory or in compliance with inventory)
PICCS (Philippines)	Yes (On Philippine inventory or in compliance with inventory)
IECSC (China)	Yes (On Chinese inventory or in compliance with inventory)

### 15.11. WHMIS Hazard Classification (Canada)

Class D-2B: Material causing other toxic effects (Toxic).  
 Canadian NPRI: None required.

## SECTION 16: Other information

### 16.1. NFPA



### 16.2. HMIS®

HEALTH	3
FLAMMABILITY	1
PHYSICAL HAZARD	1
PERSONAL PROTECTION	E

Caution: HMIS ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS ratings are not required on SDS's under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS ratings are to be used with a fully implemented HMIS program. HMIS is a registered mark of the National Paint & Coatings Association



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According to 29 CFR 1910.1200(g)

(NPCA). HMIS materials may be purchased exclusively from J.J. Keller (800) 327-6868. The customer is responsible for determining the PPE code for this material.

16.3. Text of Risk phrases in Section 3

None.

16.4. Text of Hazard statements in Section 3

H226 – Flammable liquid and vapor.  
H300 – Fatal if swallowed.  
H302 – Harmful if swallowed.  
H312 – Harmful in contact with skin.  
H314 – Causes skin severe skin burns and eye damage.  
H315 – Causes skin irritation.  
H317 – May cause an allergic skin reaction.  
H319 – Causes serious eye irritation.  
H332 – Harmful if inhaled.  
H335 – May cause respiratory irritation.  
H336 – May cause drowsiness or dizziness.  
H372 – Causes damage to organs through prolonged or repeated exposure.  
H411 – Toxic to aquatic life with long-lasting effects.  
H412 – Harmful to aquatic life with long-lasting effects.

16.5. Notice to Reader

The information provided herein was believed by Denso North America ("Denso") to be accurate at the time of preparation and prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of the product and to determine the suitability of the product for its intended use. All products supplied by Denso are subject to Denso's terms and conditions of sale. DENSO MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY DENSO, except that the product shall conform to Denso's specifications. Nothing contained herein constitutes an offer for the sale of any product.

16.6. Key/Legend to abbreviations and acronyms used in the safety data sheet

ACGIH American Conference Government Industrial Hygienists  
ADR European Agreement for International Carriage of Dangerous Materials Road  
AICS Australia, Inventory of Chemical Substances  
DSL Canada, Domestic Substances List  
NDSL Canada, Non-Domestic Substances List  
CAS Chemical Abstract Service  
CNS Central Nervous System  
DOT Department of Transportation  
EC50 Effective Concentration 50%  
EGEST EOSCA Generic Exposure Scenario Tool  
EOSCA European Oilfield Specialty Chemicals Association  
EINECS European Inventory of Existing Chemical Substances  
ENCS Japan, Inventory Existing and New Chemical Substances



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According to 29 CFR 1910.1200(g)

GHS	Global Harmonization System
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IC50	Inhibition Concentration 50%
IECSC	Inventory of Existing Chemical Substances in China
IMDG	International Maritime Dangerous Goods
KECI	Korea, Existing Chemical Inventory
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
LOAEL	Lowest Observed Adverse Effect Level
MAK	Germany Maximum Concentration Values
N/A	Not Available
ND	Not Determined
NFPA	National Fire Protection Agency
NIOSH	National Institute for Occupational Safety & Health
NOAEL	No Observable Adverse Effect Level
NOEC	No Observed Effect Concentration
NTP	National Toxicology Program
NZIoC	New Zealand Inventory of Chemicals
OSHA	Occupational Safety & Health Administration
PEL	Permissible Exposure Limit
PICCS	Philippines Inventory Commercial Chemical Substances
PRNT	Presumed Not Toxic
RCRA	Resource Conservation Recovery Act
RID	European Agreement for International Carriage of Dangerous Materials Rail
RQ	Reportable Quantity
SARA	Superfund Amendments and Reauthorization Act
STEL	Short-Term Exposure Limit
TDG	Transportation of Dangerous Goods (Canada)
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA	Time Weighted Average
UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
WHMIS	Workplace Hazardous Materials Information System

16.7. Prepared by Denso EH & S Department

16.8. Telephone 1-281-821-3355 Corporate  
1-801-629-0667 Emergency (24 hour)

Polyken Primer

By

Tyco Adhesives

**Safety Data Sheet  
acc. to OSHA HCS**

Printing date 05/19/2015

Version 4

Reviewed on 05/19/2015

**1 Identification of the substance/mixture and of the company/undertaking**

- **Product Identifier** Polyken 1027 Liquid Adhesive
- **Trade name:** Polyken 1027 Liquid Adhesive
- **Relevant identified uses of the substance or mixture and uses advised against**
  - **Sector of Use**
    - SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
  - **Product category** PC1 Adhesives, sealants
  - **Process category**
    - PROC10 Roller application or brushing
    - PROC11 Non industrial spraying
  - **Environmental release category**
    - ERC8d Wide dispersive outdoor use of processing aids in open systems
    - ERC10b Wide dispersive outdoor use of long-life articles and materials with high or intended release (including abrasive processing)
  - **Article category** AC30 Other articles with intended release of substances
  - **Application of the substance / the mixture** Coating adhesive
  - **Uses advised against** -
- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** Seal For Life Industries - Polyken <sup>TM</sup>
  - **Contact details**
    - Seal For Life Industries LLC  
25 Forge Parkway, Franklin MA, 02038 USA  
Tel. (+1) 800-343-7875, Fax. (+1) 800-328-4822, Email: franklin@sealforlife.com
    - Seal For Life Industries LLC  
2320 Bowling Green Road, Franklin KY, 42134 USA  
Tel. (+1) 800-343-7875, Fax. (+1) 800-328-4822, Email: franklin@sealforlife.com
    - Seal For Life Industries BVBA  
Nijverheidsstraat 13, B-2260 Westerlo, Belgium  
Tel. +32 14 72 25 00, Fax. +32 14 72 25 70, Email: belgium@sealforlife.com
    - Seal For Life Industries - Stopaq B.V.  
Gasselterstraat 20, 9503JB Stadskanaal, the Netherlands  
Tel +31 599 696 170, Fax +31 599 696 177, Email: info@sealforlife.com
    - Seal For Life Industries Mexico S de R.L. de C.V.  
Calle 11 Norte 11002, Cd Ind Nueva Tijuana, Tijuana Baja California, Mexico, CP 22500  
Tel USA: +1 858 633 9797, Tel Mx: +52 664 647 4397, Fax USA: +1 858 633 9740, Fax Mx: +52 664 607 9105  
Email: mexico@sealforlife.com
    - Seal For Life India Private Ltd.  
Plot17, GIDC Savli, Vadodara, Gujarat, Baroda, India - 391775  
Tel: +91 266 726 4721, Fax: +91 266 726 4724, Email: india@sealforlife.com
- **Information department:** Occupational product safety department of Seal For Life Industries
- **Emergency telephone number:**
  - For worldwide emergency assistance call CHEMTREC (24 hours):
  - Within USA/Canada 1-800-424-9300; Outside USA/Canada +1 703-527-3887 (collect calls accepted)

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**2 Hazard(s) identification**

**Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 2      H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Repr. 2      H361 Suspected of damaging fertility or the unborn child.  
STOT RE 2      H373 May cause damage to the central nervous system through prolonged or repeated exposure.  
Asp. Tox. 1      H304 May be fatal if swallowed and enters airways.



GHS09 Environment

Aquatic Chronic 2      H411 Toxic to aquatic life with long lasting effects.



GHS07

Skin Irrit. 2      H315 Causes skin irritation.  
STOT SE 3      H336 May cause drowsiness or dizziness.

**Label elements**

**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms**



GHS02



GHS07



GHS08



GHS09

**Signal word** Danger

**Hazard-determining components of labeling:**

Distillates (petroleum), light distillate hydrotreating process, low-boiling (note P)  
toluene  
methanol

**Hazard statements**

H225 Highly flammable liquid and vapor.  
H315 Causes skin irritation.  
H361 Suspected of damaging fertility or the unborn child.  
H336 May cause drowsiness or dizziness.  
H373 May cause damage to the central nervous system through prolonged or repeated exposure.  
H304 May be fatal if swallowed and enters airways.  
H411 Toxic to aquatic life with long lasting effects.

**Precautionary statements**

P210      Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P241      Use explosion-proof electrical/ventilating/lighting/equipment.

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- P260 Do not breathe dust/fume/gas/mist/vapors/spray.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P240 Ground/bond container and receiving equipment.
- P242 Use only non-sparking tools.
- P273 Avoid release to the environment.
- P243 Take precautionary measures against static discharge.
- P264 Wash thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P301+P310 If swallowed: Immediately call a poison center/doctor.
- P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P321 Specific treatment (see on this label).
- P304+P312 IF INHALED: Call a POISON CENTER/doctor if you feel unwell.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P331 Do NOT induce vomiting.
- P370+P378 In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.
- P391 Collect spillage.
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P405 Store locked up.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Classification system:**

**NFPA ratings (scale 0 - 4)**



Health = 2  
Fire = 3  
Reactivity = 0

**HMSI-ratings (scale 0 - 4)**



Health = 2  
Fire = 3  
Reactivity = 0

**Other hazards**

**Results of PBT and vPvB assessment**

- **PBT:** Not available.
- **vPvB:** Not available.

**3 Composition/information on ingredients**

**Chemical characterization: Mixtures**

**Description:** Mixture of the substances listed below with nonhazardous additions.

**Dangerous components:**

68410-97-9	Distillates (petroleum), light distillate hydrotreating process, low-boiling (note P) ⚠ Flam. Liq. 2, H225; ⚠ Asp. Tox. 1, H304; ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; STOT SE 3, H336	50-100%
108-88-3	toluene ⚠ Flam. Liq. 2, H225; ⚠ Repr. 2, H361; STOT RE 2, H373; Asp. Tox. 1, H304; ⚠ Skin Irrit. 2, H315; STOT SE 3, H336	10-25%

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67-56-1	methanol ⚠ Flam. Liq. 2, H225; ⚠ Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; ⚠ STOT SE 1, H370	1.0-2.5%
1314-13-2	zinc oxide ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	0.1-0.5%
140-66-9	4-(1,1,3,3-tetramethylbutyl)phenol ⚠ Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Skin Irrit. 2, H315	≤ 0.1%

**4 First-aid measures**

· **Description of first aid measures**

· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

In case of irregular breathing or respiratory arrest provide artificial respiration.

Immediately remove any clothing soiled by the product.

Personal protection for the First Aider.

· **After inhalation:**

Supply fresh air or oxygen; call for doctor.

Do not use mouth to mouth or mouth to nose resuscitation.

Use a respiration bag or breathing device.

Take affected persons into fresh air and keep quiet.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:**

Do not induce vomiting; immediately call for medical help.

A person vomiting while lying on his/her back should be turned onto his/her side.

Rinse out mouth and then drink plenty of water.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed**

- Asthma attacks
- Breathing difficulty
- Allergic reactions
- Dizziness
- Dizziness
- Unconsciousness
- Disorientation

· **Indication of any immediate medical attention and special treatment needed**

Medical supervision for at least 48 hours.

**5 Fire-fighting measures**

· **Extinguishing media**

· **Suitable extinguishing agents:**

- Water haze
- Foam
- Fire-extinguishing powder
- Carbon dioxide

· **For safety reasons unsuitable extinguishing agents:** Water with full jet

· **Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

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· **Advice for firefighters**

· **Protective equipment:**

- Wear self-contained respiratory protective device.
- Wear fully protective suit.

· **Additional Information**

- Cool endangered receptacles with water spray.
- Collect contaminated fire fighting water separately. It must not enter the sewage system.
- Disposal of fire debris and contaminated fire fighting water in accordance with official regulations.

**6 Accidental release measures**

· **Personal precautions, protective equipment and emergency procedures**

- Wear protective equipment. Keep unprotected persons away.
- Mount respiratory protective device.
- Keep away from ignition sources
- Ensure adequate ventilation

· **Environmental precautions:**

- Inform respective authorities in case of seepage into water course or sewage system.
- Do not allow to penetrate the ground/soil.
- In case of seepage into the ground inform responsible authorities.
- Do not allow to enter sewers/ surface or ground water.

· **Methods and material for containment and cleaning up:**

- Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- Dispose contaminated material as waste according to item 13.
- Ensure adequate ventilation.
- Do not flush with water or aqueous cleansing agents

· **Reference to other sections**

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

**7 Handling and storage**

· **Handling:**

· **Precautions for safe handling**

- Ensure appropriate ventilation/exhaust at the workplace.
- Store in cool, dry place in tightly closed receptacles.
- Keep away from heat and direct sunlight.
- Open and handle receptacle with care.

· **Information about protection against explosions and fires:**

- Keep ignition sources away - Do not smoke.
- Protect against electrostatic charges.
- Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:**

- Store in a cool location.
- Prevent any seepage into the ground.

· **Information about storage in one common storage facility:**

- Do not store together with acids.
- Do not store together with alkalis (caustic solutions).
- Store away from oxidizing agents.
- Store away from reducing agents.

· **Further information about storage conditions:**

- Keep receptacle tightly sealed.
- Store in cool, dry conditions in well sealed receptacles.
- Protect from heat and direct sunlight.

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Store receptacle in fume compartment.  
Store under lock and key and out of the reach of children

· **Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

**108-88-3 toluene**

PEL	Long-term value: 200 ppm Ceiling limit value: 300; 500* ppm *10-min peak per 8-hr shift
REL	Short-term value: 560 mg/m <sup>3</sup> , 150 ppm Long-term value: 375 mg/m <sup>3</sup> , 100 ppm
TLV	Long-term value: 75 mg/m <sup>3</sup> , 20 ppm BEI

**67-56-1 methanol**

PEL	Long-term value: 260 mg/m <sup>3</sup> , 200 ppm
REL	Short-term value: 325 mg/m <sup>3</sup> , 250 ppm Long-term value: 260 mg/m <sup>3</sup> , 200 ppm Skin
TLV	Short-term value: 328 mg/m <sup>3</sup> , 250 ppm Long-term value: 262 mg/m <sup>3</sup> , 200 ppm Skin; BEI

· **Ingredients with biological limit values:**

**108-88-3 toluene**

BEI	0.02 mg/L Medium: blood Time: prior to last shift of workweek Parameter: Toluene
	0.03 mg/L Medium: urine Time: end of shift Parameter: Toluene
	0.3 mg/g creatinine Medium: urine Time: end of shift Parameter: o-Cresol with hydrolysis (background)

**67-56-1 methanol**

BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)
-----	---

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the eyes and skin.

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Do not inhale gases / fumes / aerosols.  
Do not inhale dust / smoke / mist.

· **Breathing equipment:**

Use suitable respiratory protective device in case of insufficient ventilation.  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

Butyl rubber, BR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Protective work clothing

**9 Physical and chemical properties**

· <b>Information on basic physical and chemical properties</b>	
· <b>General Information</b>	
· <b>Appearance:</b>	
· <b>Form:</b>	Fluid
· <b>Color:</b>	Black
· <b>Odor:</b>	Petroleum-ike
· <b>Odour threshold:</b>	Not determined
· <b>pH-value:</b>	Not determined
· <b>Change in condition</b>	
· <b>Melting point/Melting range:</b>	Undetermined.
· <b>Boiling point/Boiling range:</b>	> 118 °C (> 244 °F)
· <b>Flash point:</b>	10 °C (50 °F)
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Ignition temperature:</b>	> 250 °C (> 482 °F)
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· <b>Explosion limits:</b>	
· <b>Lower:</b>	1.2 Vol %

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· Upper:	7.0 Vol %
· Vapor pressure at 20 °C (68 °F):	29 hPa (22 mm Hg)
· Density at 20 °C (68 °F):	0.84 g/cm <sup>3</sup> (7.01 lbs/gal)
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
· Water:	Not miscible or difficult to mix.
· Segregation coefficient (n-octanol/water):	Not determined.
· Viscosity:	
· Dynamic:	Not determined.
· Kinematic:	Not determined.
· Solvent content:	
· Organic solvents:	69.7 %
· VOC:	69.7 % 585.7 g/l / 4.89 lb/gl
· Other information	No further relevant information available.

**10 Stability and reactivity**

- **Reactivity**
  - **Chemical stability**
    - **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
  - **Possibility of hazardous reactions**  
Reacts with acids, alkalis and oxidizing agents.  
Reacts with reducing agents.
  - **Conditions to avoid** No further relevant information available.
  - **Incompatible materials:**  
Reacts with strong acids.  
Reacts with oxidizing agents.
  - **Hazardous decomposition products:**  
Flammable gases/vapors  
Poisonous gases/vapors  
Carbon monoxide and carbon dioxide

**11 Toxicological information**

- **Information on toxicological effects**
  - **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
<b>ATE (Acute Toxicity Estimates)</b>		
Inhalative	LC50/4h	217 mg/l
<b>68410-97-9 Distillates (petroleum), light distillate hydrotreating process, low-boiling (note P)</b>		
Oral	LD50	>5000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rat)
Inhalative	LC50	2.18 mg/l (air) (rat)
<b>108-88-3 toluene</b>		
Oral	LD50	>5000 mg/kg (rat)

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Dermal	LD50	>5000 mg/kg (rabbit)
Inhalative	LC50/4h	28.1 mg/l (rat) (OECD 403)
<b>67-56-1 methanol</b>		
Oral	LD50	5628 mg/kg (rat)
Dermal	LD50	15800 mg/kg (rabbit)
Inhalative	LC50/4h	3 mg/l (ATE)
<b>1314-13-2 zinc oxide</b>		
Oral	LD50	> 5000 mg/kg (rat)
<b>140-66-9 4-(1,1,3,3-tetramethylbutyl)phenol</b>		
Oral	LD50	4040 mg/kg (rat) (OECD 401)
Dermal	LD50	>2000 mg/kg (rabbit) (OECD 402)

**· Primary irritant effect:**

- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.

**· Sensitization:** No sensitizing effects known.

**· Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:  
 Harmful  
 Carcinogenic.  
 The product can cause inheritable damage.

**· Carcinogenic categories**

**· IARC (International Agency for Research on Cancer)**

108-88-3	toluene	3
1330-20-7	xylene	3
100-41-4	ethylbenzene	2B

**· NTP (National Toxicology Program)**

None of the ingredients is listed.

**· OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

**12 Ecological information**

**· Toxicity**

**· Aquatic toxicity:**

<b>68410-97-9 Distillates (petroleum), light distillate hydrotreating process, low-boiling (note P)</b>	
EL50/48h	4.5 mg/l (Daphnia magna)
LL50/96h	8.2 mg/l (Fish - Pimephales promelas)
NOELR	0.5 mg/l (Algae - Pseudokirchnerella subcapitata)
<b>108-88-3 toluene</b>	
LC50/48h	3.78 mg/l (Ceriodaphnia dubia) (US EPA 600/4-91-003)
LC50/96h	5.5 mg/l (Fish - Oncorhynchus kisutch) (Publ: Transactions A. Fish. Soc. 110, 430-43)
<b>1314-13-2 zinc oxide</b>	
LC50/96h	330 mg/l (Fish - Pimephales promelas) (Literature - read across)
NOEC/72h	0.024 mg/l (Algae - Pseudokirchnerella subcapitata) (OECD 201)
<b>140-66-9 4-(1,1,3,3-tetramethylbutyl)phenol</b>	
EC50/96h	1.9 mg/l (Algae - Pseudokirchnerella subcapitata) (EPA OPPTS 850.1020)
LC50/96h	0.26 mg/l (Fish - Leuciscus idus) (OECD 203)
	0.0196 mg/l (Gammarus pulex) (EPA OPPTS 850.1020)

**· Persistence and degradability** No further relevant information available.

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- **Behavior in environmental systems:**
  - **Bioaccumulative potential** No further relevant information available.
  - **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
  - **General notes:**
    - Water hazard class 3 (Self-assessment): extremely hazardous for water
    - Do not allow product to reach ground water, water course or sewage system, even in small quantities.
    - Danger to drinking water if even extremely small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
  - **PBT:** Not available.
  - **vPvB:** Not available.
- **Other adverse effects** No further relevant information available.

**13 Disposal considerations**

- **Waste treatment methods**
  - **Recommendation:**
    - Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
  - **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

· <b>UN-Number</b>	
· <b>DOT, ADR, IMDG, IATA</b>	UN1133
· <b>UN proper shipping name</b>	
· <b>DOT</b>	Adhesives
· <b>ADR</b>	1133 Adhesives, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS
· <b>IMDG</b>	ADHESIVES (Distillates (petroleum), light distillate hydrotreating process, low-boiling (note P), zinc oxide), MARINE POLLUTANT
· <b>IATA</b>	ADHESIVES
· <b>Transport hazard class(es)</b>	
· <b>DOT</b>	
	
· <b>Class</b>	3 Flammable liquids
· <b>Label</b>	3
· <b>ADR, IMDG</b>	
	
· <b>Class</b>	3 Flammable liquids

(Contd. on page 11)

**Safety Data Sheet**  
**acc. to OSHA HCS**


Printing date 05/19/2015

Version 4

Reviewed on 05/19/2015

**Trade name: Polyken 1027 Liquid Adhesive**

(Contd. of page 10)

· Label	3
· IATA	
	
· Class	3 Flammable liquids
· Label	3
· Packing group	
· DOT, ADR, IMDG, IATA	II
· Environmental hazards:	Product contains environmentally hazardous substances: zinc oxide, Distillates (petroleum), light distillate hydrotreating process, low-boiling (note P)
· Marine pollutant:	Yes (DOT) Symbol (fish and tree)
· Special marking (ADR):	Symbol (fish and tree)
· Special precautions for user	Warning: Flammable liquids
· Danger code (Kemler):	33
· EMS Number:	F-E,S-D
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
· Remarks:	Special marking with the symbol (fish and tree).
· ADR	
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN1133, Adhesives, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS, 3, II

**15 Regulatory information**

· Safety, health and environmental regulations/legislation specific for the substance or mixture

· Sara

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

108-88-3 | toluene

67-56-1 | methanol

(Contd. on page 12)



**Safety Data Sheet  
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**Trade name: Polyken 1027 Liquid Adhesive**

(Contd. of page 11)

1314-13-2	zinc oxide
1330-20-7	xylene
100-41-4	ethylbenzene

**TSCA (Toxic Substances Control Act):**

All ingredients of this product are included, or are exempted from inclusion in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory

**Proposition 65**

**Chemicals known to cause cancer:**

100-41-4 ethylbenzene

**Chemicals known to cause reproductive toxicity for females:**

108-88-3 toluene

**Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

**Chemicals known to cause developmental toxicity:**

108-88-3 toluene

67-56-1 methanol

**Carcinogenic categories**

**EPA (Environmental Protection Agency)**

108-88-3	toluene	II
1314-13-2	zinc oxide	D, I, II
1330-20-7	xylene	I
100-41-4	ethylbenzene	D

**TLV (Threshold Limit Value established by ACGIH)**

108-88-3	toluene	A4
1330-20-7	xylene	A4
100-41-4	ethylbenzene	A3

**NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms**



**Signal word** Danger

**Hazard-determining components of labeling:**

Distillates (petroleum), light distillate hydrotreating process, low-boiling (note P)  
toluene  
methanol

**Hazard statements**

H225 Highly flammable liquid and vapor.  
H315 Causes skin irritation.  
H361 Suspected of damaging fertility or the unborn child.  
H336 May cause drowsiness or dizziness.  
H373 May cause damage to the central nervous system through prolonged or repeated exposure.  
H304 May be fatal if swallowed and enters airways.  
H411 Toxic to aquatic life with long lasting effects.

**Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

(Contd. on page 13)

**Safety Data Sheet  
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Reviewed on 05/19/2015

**Trade name: Polyken 1027 Liquid Adhesive**

(Contd. of page 12)

P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P240	Ground/bond container and receiving equipment.
P242	Use only non-sparking tools.
P273	Avoid release to the environment.
P243	Take precautionary measures against static discharge.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P301+P310	If swallowed: Immediately call a poison center/doctor.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P321	Specific treatment (see on this label).
P304+P312	IF INHALED: Call a POISON CENTER/doctor if you feel unwell.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use for extinction: CO2, powder or water spray.
P391	Collect spillage.
P362+P364	Take off contaminated clothing and wash it before reuse.
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Occupational product safety department of Seal For Life Industries

· **Contact:**

Seal For Life Industries  
 Gasselterstraat 20, 9503JB Stadskanaal, the Netherlands  
 Tel: +31 599 696 170; Fax: +31 599 696 177; Email: info@sealforlife.com

· **Date of preparation / last revision** 05/19/2015 / 3

· **Abbreviations and acronyms:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- ACGIH: American Conference of Governmental Industrial Hygienists
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- HMIS: Hazardous Materials Identification System (USA)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- Fiam. Liq. 2: Flammable liquids, Hazard Category 2
- Acute Tox. 3: Acute toxicity, Hazard Category 3
- Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
- Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
- Repr. 2: Reproductive toxicity, Hazard Category 2
- STOT SE 1: Specific target organ toxicity - Single exposure, Hazard Category 1
- STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
- STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2
- Asp. Tox. 1: Aspiration hazard, Hazard Category 1
- Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1

(Contd. on page 14)

**Safety Data Sheet  
acc. to OSHA HCS**

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Reviewed on 05/19/2015

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**Trade name: Polyken 1027 Liquid Adhesive**

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(Contd. of page 13)

Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1  
Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2

• **\* Data compared to the previous version altered.**

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— US —

SP 2888 White (A)

By

Specialty Polymer Coating

# MATERIAL SAFETY DATA SHEET

## SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: **PART "A" BASE**  
Trade Name ..... **SP-2888<sup>®</sup> R.G. BRUSH GRADE BASE WHITE**  
Product Code ..... **850-280**  
WHMIS Classification ..... **D2A, D2B**  
Product Use ..... Exterior coating for pipelines  
Manufacturer's Name ..... **SPECIALTY POLYMER COATINGS, INC.**  
Street Address ..... #101 – 20529 – 62nd Avenue      City, Province/State: Langley, BC  
Postal/Zip Code ..... V3A 8R4  
Country ..... CANADA  
Emergency Telephone Number: CANUTEC: 613-996-6666  
Supplier's Name ..... **SPECIALTY POLYMER COATINGS, INC.**  
Street Address ..... #101 – 20529 – 62nd Avenue      City, Province/State: Langley, BC  
Postal/Zip Code ..... V3A 8R4  
Country ..... CANADA  
Emergency Telephone Number: CANUTEC: 613-996-6666  
MSDS Preparation Date .... May 19, 1998  
MSDS Revision Date ..... March 26, 2014  
MSDS Prepared by ..... Technical Department of Specialty Polymer Coatings, Inc. with information provided by suppliers of raw materials used in the manufacture of SP-2888<sup>®</sup> R.G. Brush Grade Base White.  
Phone Number ..... 604-514-9711

## SECTION 2 – COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredients	%	CAS #	LD <sub>50</sub>	LC <sub>50</sub>
Liquid Epoxy Resin	10-30	25068-38-6	3000 mg/kg Rat Oral	N/AV
Liquid Epoxy Resin	10-30	28064-14-4	4000 mg/kg Rabbit	6000 mg/kg Rat
Titanium Dioxide	5-10	13463-67-7	N/AV	N/AV
Feldspar	15-40	68476-25-5	N/AV	N/AV
Potassium Alumino Silicate	3-7	12001-26-2	N/AV	N/AV
Modified Diglycidyl Ether	5-10	68909-14-8	N/AV	N/AV
Crystalline Silica (Quartz)	3-7	14808-60-7	N/AV	N/AV
Siloxanes and Silicones Reaction Products with Silica	1-5	67762-90-7	N/AV	N/AV
Aliphatic Polyolpolyglycidyl Ether	1-5	37237-76-6	N/AV	N/AV

## SECTION 3 – HAZARDS IDENTIFICATION

Route of Entry:

- Skin Contact..... May cause skin burns. May cause allergic skin reactions.
- Skin Absorption ..... Can be absorbed through the skin.
- Eye Contact ..... Causes eye irritation.
- Inhalation..... May cause nose and throat irritation. May cause lung injury and / or burns.
- Ingestion..... Harmful if swallowed.

## SECTION 4 – FIRST AID MEASURES

- Skin Contact..... Wash with water and mild soap for at least 15 minutes. Remove contaminated clothing and wash before re-use. Get medical attention.
- Eye Contact ..... Flush with water for at least 15 minutes, hold eyelids apart to ensure complete irrigation of all eye and lid tissue. Get medical attention.
- Inhalation..... Remove to fresh air. If breathing has stopped, a trained person should perform artificial respiration. Get medical attention.
- Ingestion..... Get medical attention **IMMEDIATELY**.

**CAUTION---NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.  
---GET IMMEDIATE MEDICAL ATTENTION FOR ANY SIGNIFICANT  
OVEREXPOSURE.**

**SECTION 5 – FIRE FIGHTING MEASURES**

Flammable: No.

If yes, under which conditions?.... N/AV.

Means of Extinction ..... Dry chemical, foam, carbon dioxide (CO<sub>2</sub>), water spray.

Flash Point and Method ..... >100°C (>212°F) SETA.

Upper Flammable Limit (% by volume) ..... N/AV.

Lower Flammable Limit (% by volume) ..... N/AV.

Autoignition Temperature ..... N/AV.

Explosion Data - Sensitivity to Impact ..... N/AP.

Explosion Data - Sensitivity to Static Discharge .... N/AP.

Hazardous Combustion Products .... Oxides of carbon (CO, CO<sub>2</sub>), oxides of nitrogen, aldehydes, acids.

**SECTION 6 – ACCIDENTAL RELEASE MEASURES**

Leak and Spill Procedures..... Remove all sources of ignition (flames, sparks, etc.). Wear appropriate safety equipment. Provide adequate ventilation. Soak up spills with inert absorbent materials and place in closed containers. Prevent run-off from reaching storm or sewer drains.

**SECTION 7 – HANDLING AND STORAGE**

Handling Procedures and Equipment..... All equipment must be grounded. Avoid inhalation, skin and eye contact. Wear appropriate Personal Protective Equipment as listed in Section 8. Maintain good personal hygiene and wash thoroughly after using, particularly before eating or going on breaks.

Storage Requirements ..... Store in a cool, dry, well-ventilated area. The acceptable shipping and storage temperature range is between 5°C (41°F) and 40°C (104°F). Store away from incompatible materials and all sources of ignition. Keep in a tightly sealed container when not in use.

## SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

## Exposure Limits:

Hazardous Ingredients	CAS #	ACGIH TLV (TWA)
Liquid Epoxy Resin	25068-38-6	N/AV
Liquid Epoxy Resin	28064-14-4	N/AV
Titanium Dioxide	13463-67-7	10 mg/M3
Feldspar	68476-25-5	10 mg/M3 Total Dust
Potassium Alumino Silicate	12001-26-2	3 mg/M3
Modified Diglycidyl Ether	68909-14-8	N/AV
Crystalline Silica (Quartz)	14808-60-7	0.05 mg/M3 Respirable Dust
Siloxanes and Silicones Reaction Products with Silica	67762-90-7	10 mg/M3
Aliphatic Polyolpolyglycidyl Ether	37237-76-6	N/AV

Specific Engineering Controls: Provide general dilution or local exhaust in volume and pattern to keep the TLV of Hazardous Ingredients in Section 8 below acceptable limits. Extra ventilation should be provided in enclosed spaces.

## Personal Protective Equipment:

- Gloves: Chemical resistant gloves with a long cuff that will overlap the clothing sleeves should be worn when handling this product. The glove / clothing overlaps should be sealed by tape. Check with the glove manufacturer to determine the proper glove type.
- Respirator: Wear an appropriate, properly fitted vapour respirator (NIOSH / OSHA approved) during application where vapour / mist are likely to be encountered, e.g. confined spaces and during winter construction or when the substrate is preheated. For outdoor application and areas with adequate ventilation, the use of a respirator is normally not required. Follow the respirator manufacturer's recommendations. Wear a dust respirator for any activity such as sanding or grinding of cured coating.
- Eyes: Wear splash proof chemical safety goggles and / or face shield.
- Footwear: Wear impervious boots.
- Clothing: Long-sleeved clothing is to be worn over regular clothing to cover all exposed areas of arms, legs or torso during mixing and application of the coating. Breathable clothing, such as cotton or disposable coveralls, is recommended.
- Other: Emergency eyewash and a shower should be in close proximity, where possible. A barrier cream may be used in conjunction with personal protective equipment as an additional safeguard against skin contact.



**SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES**

Physical State .....	Liquid.
Odour and Appearance.....	Viscous liquid, white colour.
Odour Threshold (ppm).....	N/AV.
Specific Gravity (water=1).....	1.55
Vapour Density (air=1) .....	N/AV.
Vapour Pressure (mmHg) .....	N/AV.
Evaporation Rate (butyl acetate=1).....	N/AV.
Boiling Point .....	>300°C (>572°F).
Freezing Point .....	N/AP.
pH.....	N/AV.
Coefficient of Water/oil Distribution .....	N/AV.
Solubility in Water [20°C (68°F)].....	Negligible.

**SECTION 10 – STABILITY AND REACTIVITY**

Chemical Stability.....	Yes.
If no, under which conditions?.....	N/AP.
Incompatibility With Other Substances ....	Yes.
If yes, under which conditions? .....	Oxidizing agents, acids, bases, amines.
Reactivity, and under what conditions .....	Elevated temperatures.
Hazardous Decomposition Products .....	Oxides of carbon (CO, CO <sub>2</sub> ), oxides of nitrogen, aldehydes, acids.

**SECTION 11 – TOXICOLOGICAL INFORMATION**

Effects of Acute Exposure:

- Skin Contact..... May cause skin burns. May cause allergic skin reactions.
- Eye Contact..... Causes eye irritation.
- Inhalation..... May cause nose and throat irritation. May cause lung injury and / or burns.
- Ingestion..... Harmful if swallowed.

Effects of Chronic Exposure ..... May cause lung damage, skin sensitization, dermatitis, and respiratory sensitization. Excessive inhalation of respirable crystalline silica dust may cause lung disease, silicosis, with symptoms of cough, shortness of breath, and reduced pulmonary function. After installation and drying, activities such as grinding or sanding of material may cause dust concentration to be above the TLV limit for crystalline quartz.

- Irritancy of Product ..... Causes eye irritation. May cause nose and throat irritation.
- Skin Sensitization..... May cause skin sensitization.
- Respiratory Sensitization ..... May cause respiratory sensitization.
- Carcinogenicity – IARC..... IARC has determined that crystalline silica is carcinogenic to humans (Group 1) if it is inhaled in the form of quartz or cristobalite (respirable dust) from occupational sources.
- Carcinogenicity – ACGIH..... ACGIH classifies crystalline silica, quartz (respirable dust) as a suspected human carcinogen (A2).
- Reproductive Toxicity..... None known.
- Teratogenicity ..... None known.
- Embryotoxicity..... N/AV.
- Mutagenicity ..... None known.
- Name of Synergistic Products/Effects ... None known.

**SECTION 12 – ECOLOGICAL INFORMATION**

No Data is available.

**SECTION 13 – DISPOSAL CONSIDERATIONS**

Waste Disposal... Dispose of according to Federal, Provincial, and Municipal regulations in Canada and Federal, State, and County regulations in the United States of America.

**SECTION 14 – TRANSPORT INFORMATION**

Special Shipping Information: NOT REGULATED.

TDG:

PIN: N/AP.

Shipping Name: N/AP.

Class: N/AP.

PG: N/AP.

IMDG: N/AP.

ICAO: N/AP.

**SECTION 15 – REGULATORY INFORMATION**

WHMIS Classification ..... **D2A, D2B**

CEPA ..... All of the ingredients of this product are listed on the DSL.

TSCA ..... All of the ingredients of this product are on the TSCA Inventory.

**This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by CPR.**

**SECTION 16 – OTHER INFORMATION**

**NOTE:** While Specialty Polymer Coatings, Inc. believes that the data contained herein are accurate and derived from qualified sources, the data are not to be taken as a warranty or representation for which Specialty Polymer Coatings, Inc. assumes legal responsibility. The data is offered solely for your consideration, investigation and verification. Any use of these data and information must be determined by the user to be in accordance with applicable Federal, Provincial / State, and Municipal / County laws and regulations.

## ABBREVIATIONS USED IN PREPARING THIS MSDS

% - Percent	# - Number	< - Less Than	> - Greater Than	@ - At
ACGIH .....		American Conference of Governmental Industrial Hygienists		
CANUTEC .....		The Canadian Transport Emergency Centre of the Department of Transport		
C .....		Celsius		
CAS # .....		CAS Registry Number		
CEIL .....		Ceiling Limit		
CEPA .....		Canadian Environmental Protection Act, 1999		
CPR .....		Canadian Controlled Products Regulations		
DOT .....		Department of Transportation (U.S.)		
DSL .....		Domestic Substances List		
F .....		Fahrenheit		
FP .....		Flash Point		
g/kg .....		Grams/kilogram		
HMIS .....		Hazardous Materials Identification System		
IARC .....		International Agency for Research on Cancer		
ICAO .....		International Civil Aviation Organization		
IMO .....		International Maritime Organization		
IMDG .....		International Maritime Dangerous Goods Code.		
Kg .....		Kilogram		
Lb/gal .....		Pounds per Gallon		
LEL .....		Lower Explosive Limit		
LC <sub>50</sub> .....		Lethal Concentration (50% Death)		
LD <sub>50</sub> .....		Lethal Dosage (50% Death)		
ml/kg .....		Millilitres/kilogram		
mg/L .....		Milligrams per Litre		
mg/M <sup>3</sup> .....		Milligrams per Cubic Metre		
mmHg .....		Millimetres of Mercury		
N/AP .....		Not Applicable		
N/AV .....		Not Available		
N/D .....		Not Determined		
NFPA HAZARD RATING .....		4 - Extreme, 3 - High, 2 - Moderate, 1 - Slight, 0 - None. X – Blank		
NIOSH .....		National Institute of Occupational Safety & Health		
NTP .....		National Toxicology Program		
OSHA .....		Occupational Safety and Health Administration		
PEL .....		Permissible Exposure Limit		
PIN .....		Product Identification Number		
PG .....		Packing Group		
PMCC .....		Pensky-Martens Closed Cup		
ppm .....		Parts per million		
SARA .....		Superfund Amendments & Reauthorization Act (1986)		
SETA .....		Setaflash Closed Cup Tester		
STEL .....		Short-Term Exposure Limit		
TDG .....		Transportation of Dangerous Goods Act and Pursuant Regulations		
TLV .....		Threshold Limit Value		
TWA .....		Time Weighted Average		
TSCA .....		Toxic Substances Control Act		
WHMIS .....		Workplace Hazardous Materials Information System		

End of Material Safety Data Sheet.

SP / MSDS\_SP-2888\_RG\_Brush\_Base\_16\_SPC-IC-012614.docx

SP 3888 Base Grey (B)

By

Specialty Polymer Coating

# MATERIAL SAFETY DATA SHEET

## SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: **PART "A" BASE**  
Trade Name ..... **SP-3888<sup>®</sup> BRUSH GRADE BASE GREY**  
Product Code ..... **850-250**  
WHMIS Classification ..... **D2A, D2B**  
Product Use ..... Exterior coating for pipelines.  
Manufacturer's Name ..... **SPECIALTY POLYMER COATINGS, INC.**  
Street Address ..... #101 – 20529 – 62nd Avenue      City, Province/State: Langley, BC  
Postal/Zip Code ..... V3A 8R4  
Country ..... CANADA  
Emergency Telephone Number:      CANUTEC: 613-996-6666  
Supplier's Name ..... **SPECIALTY POLYMER COATINGS, INC.**  
Street Address ..... #101 – 20529 – 62nd Avenue      City/Province/State: Langley, BC  
Postal/Zip Code ..... V3A 8R4  
Country ..... CANADA  
Emergency Telephone Number:      CANUTEC: 613-996-6666  
MSDS Preparation Date .... July 17, 1998  
MSDS Revision Date ..... March 26, 2014  
MSDS Prepared by ..... Technical Department of Specialty Polymer Coatings, Inc. with information provided by suppliers of raw materials used in the manufacture of SP-3888<sup>®</sup> Brush Grade Base Grey.  
Phone Number ..... 604-514-9711

**SECTION 2 – COMPOSITION / INFORMATION ON INGREDIENTS**

Hazardous Ingredients	%	CAS #	LD <sub>50</sub>	LC <sub>50</sub>
Crystalline Silica (Quartz)	15-40	14808-60-7	N/AV	N/AV
Propoxylated Glycerol-Polyglycidyl Ether	1-5	37237-76-6	7400 mg/kg Rat/Oral	N/AV
Cyclohexanedimethanol-Diglycidyl Ether	1-5	14228-73-0	2500 mg/kg Rat/Oral	N/AV
Potassium Alumino Silicate	3-7	12001-26-2	N/AV	N/AV
Epoxy Resin	10-30	25085-99-8	>5000 mg/kg Rat/Oral 20,000 mg/kg Rabbit/Skin	N/AV
Epoxy Resin	15-40	28064-14-4	N/AV	N/AV
Titanium Dioxide	3-7	13463-67-7	N/AV	N/AV
Gamma-Glycidoxypropyltrimethoxysilane	0.1-1.0	2530-83-8	N/AV	N/AV
Elastomer Modified Diglycidyl Ether	1-5	68909-14-8	N/AV	N/AV
Oxirane, 2,2' [(2,2-Dimethyl-1,3-Propanediyl)Bis(Oxymethylene)]Bis	1-5	17557-23-2	N/AV	N/AV
2-Propenenitrile, Polymer with 1,3-Butadiene,3-Carboxy-1-Cyano-1-Methylpropyl-Terminated, Polymers with 2,2'-[1,4-Cyclohexanediyibi	1-5	163440-98-0	N/AV	N/AV
Siloxanes & Silicones, di-Me, Reaction product with Silica	1-5	67762-90-7	>5000 mg/kg Rat/Oral	N/AV

**SECTION 3 – HAZARDS IDENTIFICATION**

- Skin Contact..... May cause skin burns. May cause allergic skin reactions.
- Skin Absorption ..... Can be absorbed through the skin.
- Eye Contact..... Causes eye irritation.
- Inhalation..... May cause nose and throat irritation. May cause lung injury and / or burns.
- Ingestion..... Harmful if swallowed.

**SECTION 4 – FIRST AID MEASURES**

- Skin Contact..... Wash with water and mild soap for at least 15 minutes. Remove contaminated clothing and wash before re-use. Get medical attention.
- Eye Contact..... Flush with water for at least 15 minutes, hold eyelids apart to ensure complete irrigation of all eye and lid tissue. Get medical attention.
- Inhalation..... Remove to fresh air. If breathing has stopped, a trained person should perform artificial respiration. Get medical attention.
- Ingestion..... Get medical attention **IMMEDIATELY**.

**CAUTION---NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.  
---GET IMMEDIATE MEDICAL ATTENTION FOR ANY SIGNIFICANT  
OVEREXPOSURE.**

**SECTION 5 – FIRE FIGHTING MEASURES**

- Flammable: No.
- If yes, under which conditions? ..... N/AV.
- Means of Extinction ..... Dry chemical, foam, carbon dioxide (CO<sub>2</sub>), water spray.
- Flash Point and Method ..... >93.3°C (>199.94°F) PMCC.
- Upper Flammable Limit (% by volume)..... N/AV.
- Lower Flammable Limit (% by volume) ..... N/AV.
- Autoignition Temperature ..... N/AV.
- Explosion Data - Sensitivity to Impact ..... N/AP.
- Explosion Data - Sensitivity to Static Discharge .... N/AP.
- Hazardous Combustion Products .... Oxides of carbon (CO, CO<sub>2</sub>), oxides of nitrogen, aldehydes, and acids.



**SECTION 6 – ACCIDENTAL RELEASE MEASURES**

Leak and Spill Procedures..... Remove all sources of ignition (flames, sparks, etc.). Wear appropriate safety equipment. Provide adequate ventilation. Soak up spills with inert absorbent materials and place in closed containers. Prevent run-off from reaching storm or sewer drains.

**SECTION 7 – HANDLING AND STORAGE**

Handling Procedures and Equipment..... All equipment must be grounded. Avoid inhalation, skin and eye contact. Wear appropriate Personal Protective Equipment as listed in Section 8. Maintain good personal hygiene and wash thoroughly after using, particularly before eating or going on breaks.

Storage Requirements ..... Store in a cool, dry, well-ventilated area. The acceptable shipping and storage temperature range is between 5°C (41°F) and 40°C (104°F). Store away from incompatible materials and all sources of ignition. Keep in a tightly sealed container when not in use.

**SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION**

Exposure Limits:

Hazardous Ingredients	CAS #	ACGIH TLV (TWA)
Crystalline Silica (Quartz)	14808-60-7	0.05 mg/M3 Respirable Dust
Propoxylated Glycerol-Polyglycidyl Ether	37237-76-6	N/AV
Cyclohexanedimethanol-Diglycidyl Ether	14228-73-0	N/AV
Potassium Alumino Silicate	12001-26-2	3 mg/M3
Epoxy Resin	25085-99-8	N/AV
Epoxy Resin	28064-14-4	N/AV
Titanium Dioxide	13463-67-7	10 mg/M3
Gamma-Glycidoxypropyltrimethoxysilane	2530-83-8	N/AV
Elastomer Modified Diglycidyl Ether	68909-14-8	N/AV
Oxirane, 2,2' [(2,2-Dimethyl-1,3-Propanediyl)Bis(Oxymethylene)]Bis	17557-23-2	N/AV
2-Propenenitrile, Polymer with 1,3-Butadiene,3-Carboxy-1-Cyano-1-Methylpropyl-Terminated, Polymers with 2,2'-[1,4-Cyclohexanediyibi	163440-98-0	N/AV
Siloxanes & Silicones, di-Me, Reaction product with Silica	67762-90-7	N/AV

**SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION (cont.)**

**Specific Engineering Controls:** Provide general dilution or local exhaust in volume and pattern to keep the TLV of Hazardous Ingredients in Section 8 below acceptable limits. Extra ventilation should be provided in enclosed spaces.

**Personal Protective Equipment:**

**Gloves:** Chemical resistant gloves with a long cuff that will overlap the clothing sleeves should be worn when handling this product. The glove / clothing overlaps should be sealed by tape. Check with the glove manufacturer to determine the proper glove type.

**Respirator:** Wear an appropriate, properly fitted vapour respirator (NIOSH / OSHA approved) during application where vapour / mist are likely to be encountered, e.g. confined spaces and during winter construction or when the substrate is preheated. For outdoor application and areas with adequate ventilation, the use of a respirator is normally not required. Follow the respirator manufacturer's recommendations. Wear a dust respirator for any activity such as sanding or grinding of cured coating.

**Eyes:** Wear splash proof chemical safety goggles and / or face shield.

**Footwear:** Wear impervious boots.

**Clothing:** Long-sleeved clothing is to be worn over regular clothing to cover all exposed areas of arms, legs or torso during mixing and application of the coating. Breathable clothing, such as cotton or disposable coveralls, is recommended.

**Other:** Emergency eyewash and a shower should be in close proximity, where possible. A barrier cream may be used in conjunction with personal protective equipment as an additional safeguard against skin contact.

**SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES**

Physical State .....	Liquid.
Odour and Appearance.....	Grey, viscous liquid.
Odour Threshold (ppm).....	N/AV.
Specific Gravity (water=1).....	1.57
Vapour Density (air=1) .....	N/AV.
Vapour Pressure (mmHg) .....	<1.00 @ 20°C (68°F).
Evaporation Rate (butyl acetate=1).....	N/AV.
Boiling Point .....	>150°C (>302°F).
Freezing Point .....	N/AP.
pH.....	N/AV.
Coefficient of Water/oil Distribution .....	N/AV.
Solubility in Water [20°C (68°F)].....	Negligible.

**SECTION 10 – STABILITY AND REACTIVITY**

Chemical Stability.....	Yes.
If no, under which conditions?.....	N/AP.
Incompatibility With Other Substances ....	Yes.
If yes, under which conditions? .....	Oxidizing agents, acids, bases, amines.
Reactivity, and under what conditions .....	Elevated temperatures.
Hazardous Decomposition Products .....	Oxides of carbon (CO, CO <sub>2</sub> ), oxides of nitrogen, aldehydes, and acids.

**SECTION 11 – TOXICOLOGICAL INFORMATION**

Effects of Acute Exposure:

- Skin Contact..... May cause skin burns. May cause allergic skin reactions.
- Eye Contact..... Causes eye irritation.
- Inhalation..... May cause nose and throat irritation. May cause lung injury and / or burns.
- Ingestion..... Harmful if swallowed.

Effects of Chronic Exposure ..... May cause lung damage, skin sensitization, dermatitis, and respiratory sensitization. Excessive inhalation of respirable crystalline silica dust may cause lung disease, silicosis, with symptoms of cough, shortness of breath, and reduced pulmonary function. After installation and drying, activities such as grinding or sanding of material may cause dust concentration to be above the TLV limit for crystalline quartz.

Irritancy of Product ..... Causes eye irritation. May cause nose and throat irritation.

Skin Sensitization..... May cause skin sensitization.

Respiratory Sensitization ..... May cause respiratory sensitization.

Carcinogenicity – IARC..... IARC has determined that crystalline silica is carcinogenic to humans (Group 1) if it is inhaled in the form of quartz or cristobalite (respirable dust) from occupational sources.

Carcinogenicity – ACGIH..... ACGIH classifies crystalline silica, quartz (respirable dust) as a suspected human carcinogen (A2).

Reproductive Toxicity..... N/A.V.

Teratogenicity ..... Not reported.

Embryotoxicity..... N/A.V.

Mutagenicity ..... N/A.V.

Name of Synergistic Products/Effects ... N/A.V.

**SECTION 12 – ECOLOGICAL INFORMATION**

No Data is available.

**SECTION 13 – DISPOSAL CONSIDERATIONS**

Waste Disposal... Dispose of according to Federal, Provincial, and Municipal regulations in Canada and Federal, State, and County regulations in the United States of America.

**SECTION 14 – TRANSPORT INFORMATION**

Special Shipping Information: NOT REGULATED.

TDG:

PIN: N/AP.

Shipping Name: N/AP.

Class: N/AP.

PG: N/AP.

IMDG: N/AP.

ICAO: N/AP.

**SECTION 15 – REGULATORY INFORMATION**

WHMIS Classification..... **D2A, D2B**

CEPA ..... All of the ingredients of this product are listed on the DSL.

TSCA ..... All of the ingredients of this product are on the TSCA Inventory.

**This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by CPR.**

**SECTION 16 – OTHER INFORMATION**

**NOTE:** While Specialty Polymer Coatings, Inc. believes that the data contained herein are accurate and derived from qualified sources, the data are not to be taken as a warranty or representation for which Specialty Polymer Coatings, Inc. assumes legal responsibility. The data is offered solely for your consideration, investigation and verification. Any use of these data and information must be determined by the user to be in accordance with applicable Federal, Provincial / State, and Municipal / County laws and regulations.

ABBREVIATIONS USED IN PREPARING THIS MSDS

% - Percent	# - Number	< - Less Than	> - Greater Than	a - At
ACGIH .....		American Conference of Governmental Industrial Hygienists		
CANUTEC .....		The Canadian Transport Emergency Centre of the Department of Transport		
C .....		Celsius		
CAS # .....		CAS Registry Number		
CEIL .....		Ceiling Limit		
CEPA .....		Canadian Environmental Protection Act, 1999		
CPR .....		Canadian Controlled Products Regulations		
DOT .....		Department of Transportation (U.S.)		
DSL .....		Domestic Substances List		
F .....		Fahrenheit		
FP .....		Flash Point		
g/kg .....		Grams/kilogram		
HMIS .....		Hazardous Materials Identification System		
IARC .....		International Agency for Research on Cancer		
ICAO .....		International Civil Aviation Organization		
IMO .....		International Maritime Organization		
IMDG .....		International Maritime Dangerous Goods Code.		
Kg .....		Kilogram		
Lb/gal .....		Pounds per Gallon		
LEL .....		Lower Explosive Limit		
LC <sub>50</sub> .....		Lethal Concentration (50% Death)		
LD <sub>50</sub> .....		Lethal Dosage (50% Death)		
ml/kg .....		Millilitres/kilogram		
mg/L .....		Milligrams per Litre		
mg/M <sup>3</sup> .....		Milligrams per Cubic Metre		
mmHg .....		Millimetres of Mercury		
N/AP .....		Not Applicable		
N/AV .....		Not Available		
N/D .....		Not Determined		
NFPA HAZARD RATING .....		4 - Extreme, 3 - High, 2 - Moderate, 1 - Slight, 0 - None, X - Blank		
NIOSH .....		National Institute of Occupational Safety & Health		
NTP .....		National Toxicology Program		
OSHA .....		Occupational Safety and Health Administration		
PEL .....		Permissible Exposure Limit		
PIN .....		Product Identification Number		
PG .....		Packing Group		
PMCC .....		Pensky-Martens Closed Cup		
ppm .....		Parts per million		
SARA .....		Superfund Amendments & Reauthorization Act (1986)		
SETA .....		Setaflash Closed Cup Tester		
STEL .....		Short-Term Exposure Limit		
TDG .....		Transportation of Dangerous Goods Act and Pursuant Regulations		
TLV .....		Threshold Limit Value		
TWA .....		Time Weighted Average		
TSCA .....		Toxic Substances Control Act		
WHMIS .....		Workplace Hazardous Materials Information System		

End of Material Safety Data Sheet.

SPC / MSDS / SP-3888\_101\_Base\_105-10 docx

PipeClad 2000

By

Valspar



if it matters, we're on it.®

## SAFETY DATA SHEET

Revision date 05-Apr-2016

Version 8

Supersedes Date: 03-Feb-2016

### Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**Product identifier**

Product Code 720G020S

Product Name PIPECLAD 2000 SLOW GEL

**Other means of identification**

No information available

**Recommended use of the chemical and restrictions on use**

Paint, Coatings

**Details of the supplier of the safety data sheet**

See section 16 for more information

The Valspar Corporation  
PO Box 1461  
Minneapolis, MN 55440

**E-mail address** [msds@valspar.com](mailto:msds@valspar.com)

**Emergency telephone number**

United States of America 1-888-345-5732  
American Samoa, Guam, Northern Mariana Islands, Puerto Rico, U.S. Virgin Islands 1-800-255-3924

### Section 2: HAZARDS IDENTIFICATION

**Classification**

Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Reproductive toxicity	Category 2
Combustible dust	

**Label elements**

Product Code 720G020S

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Signal word

**DANGER**

#### HAZARD STATEMENTS

May form combustible dust concentrations in air  
Causes serious eye damage  
May cause an allergic skin reaction  
Suspected of damaging fertility or the unborn child

#### PREVENTION

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace.

#### RESPONSE

IF exposed or concerned: Get medical advice/attention.

##### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

##### Skin

IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

##### Inhalation

IF INHALED: Call a POISON CENTER or doctor if you feel unwell.

##### Ingestion

Do NOT induce vomiting. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

#### STORAGE

Store locked up.

#### DISPOSAL

Dispose of contents/containers in accordance with local regulations.

#### HAZARDS NOT OTHERWISE CLASSIFIED (HNOC)

Not applicable.

#### OTHER HAZARDS

Not applicable.

#### UNKNOWN ACUTE TOXICITY

0% of the mixture consists of ingredient(s) of unknown toxicity.

### Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	weight-%
Bisphenol A	80-05-7	3 - 5
Epoxy Resin	Proprietary	3 - 5
Rutile (TiO <sub>2</sub> )	1317-80-2	1 - 3
EPOXY RESIN-AMINE ADDUCT	UNKNOWN	1 - 3

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

### Section 4: FIRST AID MEASURES

#### First Aid Measures

Product Code 720G020S

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**General advice**

IF exposed or concerned: Get medical advice/attention.

**Eye contact**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

**Skin Contact**

IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

**Inhalation**

IF INHALED: Call a POISON CENTER or doctor if you feel unwell.

**Ingestion**

Do NOT induce vomiting. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** No information available.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Treat symptomatically.

**Section 5: FIRE FIGHTING MEASURES****Suitable extinguishing media**

Water spray (fog). Carbon dioxide (CO2). Alcohol resistant foam.

Not to be used for safety reasons: Inert gas under high pressure (e.g. CO2), water jet

**Specific hazards arising from the chemical**

Burning produces heavy smoke. Fire may produce irritating and/or toxic gases. In the event of fire and/or explosion do not breathe fumes. May cause sensitization by skin contact.

**Special protective equipment for fire-fighters**

Wear self-contained breathing apparatus and protective suit. Cool containers with flooding quantities of water until well after fire is out. Do not allow run-off from fire-fighting to enter drains or water courses.

**Section 6: ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures****Personal precautions**

Remove all sources of ignition. Do not breathe dust. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

**For emergency responders**

Use personal protection recommended in Section 8.

**Environmental precautions**

Do not allow into any sewer, on the ground or into any body of water. If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations. Prevent further leakage or spillage if safe to do so. Local authorities should be advised if significant spillages cannot be contained.

**Methods and material for containment and cleaning up****Methods for containment**

Prevent further leakage or spillage if safe to do so.

### Methods for cleaning up

Dispose of waste product or used containers according to local regulations. Do not use a dry brush as dust clouds or static can be created. Dam up. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. Take up mechanically, placing in appropriate containers for disposal. Contain and collect spillage with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

## Section 7: HANDLING AND STORAGE

### Precautions for safe handling

#### Advice on safe handling

Precautions should be taken to prevent the formation of dusts in concentrations above flammable, explosive or occupational exposure limits. Operators should wear anti-static footwear and clothing and floors should be of the conducting type. Use personal protection recommended in Section 8. Comply with the health and safety at work laws. Prevent product from entering drains. Use only with adequate ventilation. Do not breathe dust/fume/gas/mist/vapors/spray.

#### General Hygiene Considerations

When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Avoid contact with skin, eyes or clothing.

### Conditions for safe storage, including any incompatibilities

#### Storage Conditions

Keep/store only in original container. Store in accordance with local regulations. Keep unauthorized personnel away. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Keep container tightly closed in a dry and well-ventilated place.

#### Incompatible materials

Strong bases. Strong oxidizing agents. Strong acids. Amines.

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure Limits

If S\* appears in the OEL table, it indicates this chemical contains a skin notation.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Rutile (TiO <sub>2</sub> ) 1317-80-2	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust	IDLH: 5000 mg/m <sup>3</sup>

### Appropriate engineering controls

#### Engineering Controls

Ensure adequate ventilation, especially in confined areas. Provide local exhaust ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not breathe dust.

### Individual protection measures, such as personal protective equipment

#### Eye/face protection

Tight sealing safety goggles.

#### Skin and body protection

Wear suitable protective clothing. Care should be taken in the selection of protective clothing to ensure that inflammation and irritation of the skin at neck and wrists through contact with the powder are avoided. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

#### Hand Protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed. Gloves should be replaced regularly and if there is any sign of damage to the glove material. Always ensure that gloves are free from defects and that they are stored and used correctly. The performance or effectiveness of the glove may be reduced by physical / chemical damage and poor maintenance. Wear protective gloves.

**Respiratory protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

**Thermal Protection**

No information available

**Section 9: PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties**

Physical state	powder
Appearance	No information available
Odor	Odorless
Color	green
Odor Threshold	No information available
pH value	No information available
Melting point/freezing point	No information available
Boiling point / boiling range	No information available °C / °F
flash point	510 °C / 950 °F
evaporation rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor Pressure	No information available
vapor density	No information available
Density (lbs per US gallon)	10.49
specific gravity	1.26
Solubility(ies)	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available

**Other information****Section 10: STABILITY AND REACTIVITY**

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	None under normal processing.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong bases. Strong oxidizing agents. Strong acids. Amines.
Hazardous Decomposition Products	Carbon monoxide. Carbon dioxide (CO <sub>2</sub> ). Oxides of sulfur.

**Section 11: TOXICOLOGICAL INFORMATION****Information on likely routes of exposure****Eye contact**

Causes serious eye damage

**Skin Contact**

May cause an allergic skin reaction

**Ingestion**

Not applicable

Inhalation  
Not applicable

**Numerical measures of toxicity - Component Information**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Bisphenol A 80-05-7	= 3300 mg/kg ( Rat )	= 3 mL/kg ( Rabbit )	-
Epoxy Resin	-	-	-
Rutile (TiO2) 1317-80-2	> 10000 mg/kg ( Rat )	-	-
EPOXY RESIN-AMINE ADDUCT UNKNOWN	-	-	-

**Numerical measures of toxicity - Product Information**

**UNKNOWN ACUTE TOXICITY** 0% of the mixture consists of ingredient(s) of unknown toxicity.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Carcinogenicity**

According to IARC, Volume 93, no significant exposure to primary particles of titanium dioxide is thought to occur from use in paints since the pigment is bound to other materials.

Chemical Name	ACGIH	IARC	NTP	OSHA
Rutile (TiO2) 1317-80-2		Group 2B		X

*IARC (International Agency for Research on Cancer)*

*Group 2B - Possibly Carcinogenic to Humans.*

*OSHA (Occupational Safety and Health Administration of the US Department of Labor)*

*X - Present.*

Skin corrosion/irritation	Not applicable
Serious eye damage/eye irritation	Causes serious eye damage
Skin sensitization	May cause an allergic skin reaction
Respiratory sensitization	Not applicable
Germ cell mutagenicity	Not applicable
Carcinogenicity	Not applicable
Reproductive Toxicity	Suspected of damaging fertility or the unborn child
Specific target organ toxicity (single exposure)	Not applicable
Specific target organ toxicity (repeated exposure)	Not applicable
Aspiration hazard	Not applicable

**Section 12: ECOLOGICAL INFORMATION**

**Ecotoxicity**

Environmental precautions Prevent product from entering drains.

**Persistence and degradability**

No information available

**Bioaccumulation**

No information available

**Mobility**

No information available

**Other adverse effects**

No information available

**Section 13: DISPOSAL CONSIDERATIONS**

Product Code 720G020S

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### Waste treatment methods

- Disposal of wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.
- Contaminated packaging** Improper disposal or reuse of this container may be dangerous and illegal. Empty containers must be scrapped or reconditioned.

## Section 14: TRANSPORT INFORMATION

- |   | <u>DOT</u>     | <u>IMDG</u>   | <u>IATA</u>              |
|---|----------------|---------------|--------------------------|
| 14.1 UN/ID no   | Not regulated  | Not regulated | Not regulated            |
| 14.2 Proper shipping name   |                |               |                          |
| 14.3 Hazard Class   |                |               |                          |
| 14.4 Packing Group  |                |               |                          |
| 14.5 Environmental hazard   | Not applicable |               |                          |
| 14.6 Special Provisions   |                |               |                          |
| 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code |                |               | No information available |

The supplier may apply one of the following exceptions: Combustible Liquid (49 CFR 173.150(f)); Consumer Commodity (49 CFR 173.150(c), ICAO/IATA SP A112); Limited Quantity (49 CFR 173.150(b), ICAO Part 3 Chapter 4, IATA 2.7, IMDG Chapter 3.4); Viscous Liquid (49 CFR 173.121(b), IMDG 2.3.2.2, IATA 3.3.3.1.1, ICAO 3.2.2, ADR 2.2.3.1.5); Does Not Sustain Combustion (49 CFR 173.120(a), IATA 3.3.1.3, ICAO 3.1.3, IMDG 2.3.1.3, ADR 2.2.3.1.1 Note 1); or others as allowed under hazardous materials/dangerous goods regulations.

## Section 15: REGULATORY INFORMATION

### International Inventories

- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory** Not all components are listed or exempt from listing.
- DSL - Canadian Domestic Substances List** Not all components are listed or exempt from listing.

### US Federal Regulations

Chemical Name	SARA 313 - Threshold Values %	Hazardous air pollutants (HAPs) content
Bisphenol A 80-05-7 3 - 5	1	

### SARA 311/312 Hazard Categories

- |                                   |     |
|-----------------------------------|-----|
| Acute health hazard               | Yes |
| Chronic Health Hazard             | Yes |
| Fire hazard                       | No  |
| Sudden release of pressure hazard | No  |
| Reactive Hazard                   | No  |

### US State Regulations

**Rule 66 status of product**  
Not photochemically reactive.

### California Proposition 65

WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

### U.S. EPA Label information

EPA Pesticide registration number Not applicable

Product Code 720G020S

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**U.S. State Right-to-Know Regulations**

Chemical Name
Proprietary Non-Hazardous Ingredient - Proprietary CAS
Barium sulfate 7727-43-7
Bisphenol A 80-05-7
Epoxy Resin
Rutile (TiO2) 1317-80-2
EPOXY RESIN-AMINE ADDUCT UNKNOWN

**Section 16: OTHER INFORMATION**

**HMIS**

Health hazards 3\*  
\* = Chronic Health Hazard  
Flammability 1  
Physical hazards 0  
Personal Protection X

**Supplier Address**

Valspar Coatings	Valspar Powder Coatings
10300 Claude Freeman Dr.	13129 Harland Dr. NE
Charlotte, NC 28262	Covington, GA 30014
704-548-2820	770-784-4140

Prepared By Product Stewardship

Revision date 05-Apr-2016  
Revision Note No information available

**Disclaimer**

The information on this Safety Data Sheet (SDS) is based on the present state of our knowledge, current national legislation and guidelines. As the specific conditions of use of the product are outside the supplier's knowledge and control the user is responsible for ensuring that the requirements of relevant legislation are complied with. This SDS should not be construed as any guarantee of the technical performance or suitability for particular applications. UNLESS SUPPLIER AGREES OTHERWISE IN WRITING, SUPPLIER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. SUPPLIER WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

End of Safety Data Sheet

Coal Tar Epoxy (B69B40,  
B60V40)

By

Sherwin Williams



# MATERIAL SAFETY DATA SHEET

B69B40  
13 00

DATE OF PREPARATION  
Aug 31, 2015

## SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NUMBER**

B69B40

**PRODUCT NAME**

Hi-Mil SHER-TAR™ Coal Tar Epoxy Enamel (Part A)

**MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY  
101 Prospect Avenue N.W.  
Cleveland, OH 44115

**Telephone Numbers and Websites**

<b>Product Information</b>	(800) 524-5979 www.sherwin-williams.com
<b>Regulatory Information</b>	(216) 566-2902 www.paintdocs.com
<b>Medical Emergency</b>	(216) 566-2917
<b>Transportation Emergency*</b>	(800) 424-9300
<i>*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)</i>	

## SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
2	100-41-4	<b>Ethylbenzene</b>		
		ACGIH TLV	20 PPM	7.1 mm
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
10	1330-20-7	<b>Xylene</b>		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
2	64742-95-6	<b>Light Aromatic Hydrocarbons</b>		
		ACGIH TLV	Not Available	3.8 mm
		OSHA PEL	Not Available	
4	95-63-6	<b>1,2,4-Trimethylbenzene</b>		
		ACGIH TLV	25 PPM	2.03 mm
		OSHA PEL	25 PPM	
3	1569-01-3	<b>1-Propoxy-2-propanol</b>		
		ACGIH TLV	Not Available	1.7 mm
		OSHA PEL	Not Available	
1	90-72-2	<b>Tri(dimethylaminomethyl)phenol</b>		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
37	65996-93-2	<b>Refined Coal Tar Pitch</b>		
		ACGIH TLV	0.2 MG/M3	
		OSHA PEL	0.2 MG/M3	
6	68410-23-1	<b>Polyamide</b>		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
27	14807-96-6	<b>Talc</b>		
		ACGIH TLV	2 mg/m3 as Resp. Dust	
		OSHA PEL	2 mg/m3 as Resp. Dust	

## SECTION 3 — HAZARDS IDENTIFICATION

**ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

**EFFECTS OF OVEREXPOSURE**

**EYES:** Causes burns.

**SKIN:** Causes burns.

**INHALATION:** Causes burns of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:

- the liver
- the urinary system
- the reproductive system

**SIGNS AND SYMPTOMS OF OVEREXPOSURE**

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

May cause allergic skin reaction in susceptible persons or skin sensitization.

**CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

**HMIS Codes**

<b>Health</b>	<b>3*</b>
<b>Flammability</b>	<b>2</b>
<b>Reactivity</b>	<b>0</b>

**SECTION 4 — FIRST AID MEASURES**

**EYES:** Flush eyes with large amounts of water for 15 minutes. Get medical attention **IMMEDIATELY**.

**SKIN:** Wash affected area thoroughly with soap and water.

If irritation persists or occurs later, get medical attention.

Discard contaminated clothing and shoes.

**INHALATION:** If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

**SECTION 5 — FIRE FIGHTING MEASURES**

**FLASH POINT**

110 °F PMCC

**LEL**

0.7

**UEL**

16.9

**FLAMMABILITY CLASSIFICATION**

Combustible, Flash above 99 and below 200 °F

**EXTINGUISHING MEDIA**

Carbon Dioxide, Dry Chemical, Foam

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

**SPECIAL FIRE FIGHTING PROCEDURES**

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

**SECTION 6 — ACCIDENTAL RELEASE MEASURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Remove all sources of ignition. Ventilate the area.

Remove with inert absorbent.

**SECTION 7 — HANDLING AND STORAGE**

**STORAGE CATEGORY**

DOL Storage Class II

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE**

Contents are COMBUSTIBLE. Keep away from heat and open flame.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally.

Keep out of the reach of children.

**SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION**

**PRECAUTIONS TO BE TAKEN IN USE**

Use only with adequate ventilation.

Do not get in eyes, or on skin or clothing. Do not breathe vapor or spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m<sup>3</sup> (total dust), 3 mg/m<sup>3</sup> (respirable fraction), OSHA PEL 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction).

**VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

**RESPIRATORY PROTECTION**

For spray application, wear a full face positive pressure air supplied respirator, TC19C NIOSH/MSHA approved. For brush application, wear an organic vapor NIOSH/MSHA approved respirator. Follow respirator manufacturer's directions for use.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

**PROTECTIVE GLOVES**

Wear Nitrile/NBR gloves.

**EYE PROTECTION**

To prevent eye contact, wear safety spectacles with unperforated sideshields.

**OTHER PROTECTIVE EQUIPMENT**

Use barrier cream on exposed skin. For spray application, wear full body disposable protective clothing.

**OTHER PRECAUTIONS**

This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

<b>SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES</b>
---

<b>PRODUCT WEIGHT</b>	10.98 lb/gal	1316 g/l
<b>SPECIFIC GRAVITY</b>	1.32	
<b>BOILING POINT</b>	277 - 360 °F	136 - 182 °C
<b>MELTING POINT</b>	Not Available	
<b>VOLATILE VOLUME</b>	35%	
<b>EVAPORATION RATE</b>	Slower than ether	
<b>VAPOR DENSITY</b>	Heavier than air	
<b>SOLUBILITY IN WATER</b>	Not Available	
<b>VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)</b>		
2.54 lb/gal	304 g/l	Less Water and Federally Exempt Solvents
2.54 lb/gal	304 g/l	Emitted VOC

<b>SECTION 10 — STABILITY AND REACTIVITY</b>
--

**STABILITY — Stable****CONDITIONS TO AVOID**

None known.

**INCOMPATIBILITY**

None known.

**HAZARDOUS DECOMPOSITION PRODUCTS**

By fire: Carbon Dioxide, Carbon Monoxide

**HAZARDOUS POLYMERIZATION**

Will not occur

<b>SECTION 11 — TOXICOLOGICAL INFORMATION</b>
---

**CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

Coal Tar Pitch is listed by NTP. Human and animal studies indicate that prolonged overexposure to Coal Tar Pitch can cause cancer of the skin, lung, bladder and gastrointestinal tract. Inhalation of Coal Tar Pitch Volatiles at application temperatures would not be expected as they are vaporized only at very high temperatures.

## TOXICOLOGY DATA

CAS No.	Ingredient Name			
100-41-4	Ethylbenzene	LC50 RAT LD50 RAT	4HR	Not Available 3500 mg/kg
1330-20-7	Xylene	LC50 RAT LD50 RAT	4HR	5000 ppm 4300 mg/kg
64742-95-6	Light Aromatic Hydrocarbons	LC50 RAT LD50 RAT	4HR	Not Available Not Available
95-63-6	1,2,4-Trimethylbenzene	LC50 RAT LD50 RAT	4HR	Not Available Not Available
1569-01-3	1-Propoxy-2-propanol	LC50 RAT LD50 RAT	4HR	Not Available 2800 mg/kg
90-72-2	Tri(dimethylaminomethyl)phenol	LC50 RAT LD50 RAT	4HR	Not Available 1653 mg/kg
65996-93-2	Refined Coal Tar Pitch	LC50 RAT LD50 RAT	4HR	Not Available Not Available
68410-23-1	Polyamide	LC50 RAT LD50 RAT	4HR	Not Available Not Available
14807-96-6	Talc	LC50 RAT LD50 RAT	4HR	Not Available Not Available

## SECTION 12 — ECOLOGICAL INFORMATION

## ECOTOXICOLOGICAL INFORMATION

No data available.

## SECTION 13 — DISPOSAL CONSIDERATIONS

## WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

## SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

## US Ground (DOT)

May be Classed as a Combustible Liquid for U.S. Ground.  
UN1263, PAINT, 3, PG III, (ERG#128)

## DOT (Dept of Transportation) Hazardous Substances &amp; Reportable Quantities

Xylenes (isomers and mixture) 100 lb RQ

## Bulk Containers may be Shipped as (check reportable quantities):

RQ, UN1263, PAINT, 3, PG III, (XYLENES (ISOMERS AND MIXTURE)),  
(ERG#128)

## Canada (TDG)

May be Classed as a Combustible Liquid for Canadian Ground.  
UN1263, PAINT, 3, PG III, (ERG#128)

## IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.  
UN1263, PAINT, 3, PG III, (43 C c.c.), EmS F-E, S-E

## IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.  
UN1263, PAINT, 3, PG III, (43 C c.c.), EmS F-E, S-E

## IATA/ICAO

UN1263, PAINT, 3, PG III

**SECTION 15 — REGULATORY INFORMATION****SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION**

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	2	
1330-20-7	Xylene	10	
95-63-6	1,2,4-Trimethylbenzene	4	

**CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

**TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

**SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# MATERIAL SAFETY DATA SHEET

B60V40  
21 00

DATE OF PREPARATION  
Jan 23, 2016

## SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NUMBER**

B60V40

**PRODUCT NAME**

Hi-Mil SHER-TAR™ Epoxy Enamel Hardener (Part B)

**MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY  
101 Prospect Avenue N.W.  
Cleveland, OH 44115

**Telephone Numbers and Websites**

<b>Product Information</b>	(800) 524-5979 www.sherwin-williams.com
<b>Regulatory Information</b>	(216) 566-2902 www.paintdocs.com
<b>Medical Emergency</b>	(216) 566-2917
<b>Transportation Emergency*</b>	(800) 424-9300
<i>*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)</i>	

## SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
0.3	100-41-4	<b>Ethylbenzene</b>		
		ACGIH TLV	20 PPM	7.1 mm
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
3	1330-20-7	<b>Xylene</b>		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
7	64742-95-6	<b>Light Aromatic Hydrocarbons</b>		
		ACGIH TLV	Not Available	3.8 mm
		OSHA PEL	Not Available	
1	98-82-8	<b>Cumene</b>		
		ACGIH TLV	50 PPM	10 mm
		OSHA PEL	50 PPM	
3	108-67-8	<b>1,3,5-Trimethylbenzene</b>		
		ACGIH TLV	25 PPM	2 mm
		OSHA PEL	25 PPM	
11	95-63-6	<b>1,2,4-Trimethylbenzene</b>		
		ACGIH TLV	25 PPM	2.03 mm
		OSHA PEL	25 PPM	
61	25068-38-6	<b>Epoxy Polymer</b>		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
6	14807-96-6	<b>Talc</b>		
		ACGIH TLV	2 mg/m3 as Resp. Dust	
		OSHA PEL	2 mg/m3 as Resp. Dust	

## SECTION 3 — HAZARDS IDENTIFICATION

**ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.  
EYE or SKIN contact with the product, vapor or spray mist.

**HMS Codes**

<b>Health</b>	2*
<b>Flammability</b>	2
<b>Reactivity</b>	0

**EFFECTS OF OVEREXPOSURE****EYES:** Irritation.**SKIN:** Prolonged or repeated exposure may cause irritation.**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:

- the liver
- the urinary system
- the reproductive system

**SIGNS AND SYMPTOMS OF OVEREXPOSURE**

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

May cause allergic skin reaction in susceptible persons or skin sensitization.

**CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

**SECTION 4 — FIRST AID MEASURES****EYES:** Flush eyes with large amounts of water for 15 minutes. Get medical attention.**SKIN:** Wash affected area thoroughly with soap and water.

If irritation persists or occurs later, get medical attention.

Remove contaminated clothing and launder before re-use.

**INHALATION:** If affected, remove from exposure. Restore breathing. Keep warm and quiet.**INGESTION:** Do not induce vomiting. Get medical attention immediately.**SECTION 5 — FIRE FIGHTING MEASURES****FLASH POINT**

119 °F PMCC

**LEL**

0.7

**UEL**

7.0

**FLAMMABILITY CLASSIFICATION**

Combustible, Flash above 99 and below 200 °F

**EXTINGUISHING MEDIA**

Carbon Dioxide, Dry Chemical, Foam

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

**SPECIAL FIRE FIGHTING PROCEDURES**

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

**SECTION 6 — ACCIDENTAL RELEASE MEASURES****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Remove all sources of ignition. Ventilate the area.

Remove with inert absorbent.

**SECTION 7 — HANDLING AND STORAGE****STORAGE CATEGORY**

DOL Storage Class II

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE**

Contents are COMBUSTIBLE. Keep away from heat and open flame.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally.

Keep out of the reach of children.

**SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION****PRECAUTIONS TO BE TAKEN IN USE**

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m<sup>3</sup> (total dust), 3 mg/m<sup>3</sup> (respirable fraction), OSHA PEL 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction).

**VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

**RESPIRATORY PROTECTION**

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

**PROTECTIVE GLOVES**

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

**EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

**OTHER PROTECTIVE EQUIPMENT**

Use of barrier cream on exposed skin is recommended.

**OTHER PRECAUTIONS**

This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

<b>SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES</b>
---

<b>PRODUCT WEIGHT</b>	9.21 lb/gal	1103 g/l
<b>SPECIFIC GRAVITY</b>	1.11	
<b>BOILING POINT</b>	212 - 360 °F	100 - 182 °C
<b>MELTING POINT</b>	Not Available	
<b>VOLATILE VOLUME</b>	35%	
<b>EVAPORATION RATE</b>	Slower than ether	
<b>VAPOR DENSITY</b>	Heavier than air	
<b>SOLUBILITY IN WATER</b>	Not Available	
<b>VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)</b>		
2.47 lb/gal	297 g/l	Less Water and Federally Exempt Solvents
2.45 lb/gal	293 g/l	Emitted VOC

<b>SECTION 10 — STABILITY AND REACTIVITY</b>
--

**STABILITY — Stable****CONDITIONS TO AVOID**

None known.

**INCOMPATIBILITY**

None known.

**HAZARDOUS DECOMPOSITION PRODUCTS**

By fire: Carbon Dioxide, Carbon Monoxide

**HAZARDOUS POLYMERIZATION**

Will not occur

<b>SECTION 11 — TOXICOLOGICAL INFORMATION</b>
---

**CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.



## TOXICOLOGY DATA

CAS No.	Ingredient Name			
100-41-4	Ethylbenzene	LC50 RAT LD50 RAT	4HR	Not Available 3500 mg/kg
1330-20-7	Xylene	LC50 RAT LD50 RAT	4HR	5000 ppm 4300 mg/kg
64742-95-6	Light Aromatic Hydrocarbons	LC50 RAT LD50 RAT	4HR	Not Available Not Available
98-82-8	Cumene	LC50 RAT LD50 RAT	4HR	Not Available 1400 mg/kg
108-67-8	1,3,5-Trimethylbenzene	LC50 RAT LD50 RAT	4HR	Not Available Not Available
95-63-6	1,2,4-Trimethylbenzene	LC50 RAT LD50 RAT	4HR	Not Available Not Available
25068-38-6	Epoxy Polymer	LC50 RAT LD50 RAT	4HR	Not Available Not Available
14807-96-6	Talc	LC50 RAT LD50 RAT	4HR	Not Available Not Available

## SECTION 12 — ECOLOGICAL INFORMATION

## ECOTOXICOLOGICAL INFORMATION

No data available.

## SECTION 13 — DISPOSAL CONSIDERATIONS

## WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

## SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.) does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

## US Ground (DOT)

May be Classed as a Combustible Liquid for U.S. Ground.

UN1263, PAINT RELATED MATERIAL, 3, PG III, (ERG#128)

## DOT (Dept of Transportation) Hazardous Substances &amp; Reportable Quantities

Xylenes (mixed isomers) 100 lb RQ

## Bulk Containers may be Shipped as (check reportable quantities):

UN1263, PAINT RELATED MATERIAL, 3, PG III, (ERG#128)

## Canada (TDG)

May be Classed as a Combustible Liquid for Canadian Ground.

UN1263, PAINT RELATED MATERIAL, 3, PG III, (ERG#128)

## IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.

UN1263, PAINT RELATED MATERIAL, 3, PG III, (48 C c.c.), EmS F-E, S-E

## IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.

UN1263, PAINT RELATED MATERIAL, 3, PG III, (48 C c.c.), EmS F-E, S-E

## IATA/ICAO

UN1263, PAINT RELATED MATERIAL, 3, PG III

## SECTION 15 — REGULATORY INFORMATION

### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	0.3	
1330-20-7	Xylene	3	
98-82-8	Cumene	1	
95-63-6	1,2,4-Trimethylbenzene	11	

### CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

### TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

## SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

Pat.

Amercoat 65 Thinner

By

Ameron

# SAFETY DATA SHEET



Date of issue/Date of revision 29 April 2016

Version 3

## Section 1. Identification

Product name : AMERCOAT 65 THINNER US  
Product code : 19A334836  
Other means of identification : Not available.  
Product type : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

Product use : Consumer applications.  
Use of the substance/  
mixture : Thinner.  
Uses advised against : Not applicable.

Manufacturer : Fábrica de Pinturas Universales S.A. de C.V.  
Roberto Fulton, No. 4  
Col. San Nicolás, Tlalnepantla  
Estado de México CP. 54030  
Tel. 01 (55) 1669-1800 (México)

Emergency telephone number : (412) 434-4515 (U.S.)  
(514) 645-1320 (Canada)  
01-800-00-21-400 (Mexico)

Customer Service /  
Technical Phone Number : 01-800 7126-639 (México)

## Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture :  FLAMMABLE LIQUIDS - Category 3  
ACUTE TOXICITY (dermal) - Category 4  
ACUTE TOXICITY (inhalation) - Category 4  
SKIN IRRITATION - Category 2  
EYE IRRITATION - Category 2A  
CARCINOGENICITY - Category 2  
TOXIC TO REPRODUCTION (Unborn child) - Category 2  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS), hearing organs, kidneys and liver) - Category 2

## Section 2. Hazards identification

### GHS label elements

#### Hazard pictograms



Signal word : Warning

Hazard statements : Flammable liquid and vapor.  
Harmful in contact with skin or if inhaled.  
Causes serious eye irritation.  
Causes skin irritation.  
Suspected of damaging the unborn child.  
Suspected of causing cancer.  
May cause respiratory irritation.  
May cause damage to organs through prolonged or repeated exposure. (central nervous system (CNS), hearing organs, kidneys, liver)

### Precautionary statements

General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Wash hands thoroughly after handling.

Response : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

### Section 3. Composition/information on ingredients

Substance/mixture : Mixture  
Product name : AMERCOAT 65 THINNER US

Ingredient name	%	CAS number
xylene	≥75 - ≤90	1330-20-7
ethylbenzene	≥10 - ≤16	100-41-4
toluene	<1.0	108-88-3

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

#### Description of necessary first aid measures

- Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. May cause respiratory irritation.
- Skin contact** : Harmful in contact with skin. Causes skin irritation. Defatting to the skin.
- Ingestion** : No known significant effects or critical hazards.

##### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

## Section 4. First aid measures

- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.
- Specific hazards arising from the chemical** : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide



## Section 5. Fire-fighting measures

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Special precautions** : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Do not store above the following temperature: 35°C (95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
xylene	<b>ACGIH TLV (United States, 3/2015).</b> STEL: 651 mg/m <sup>3</sup> 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours. <b>OSHA PEL (United States, 2/2013).</b> TWA: 435 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours.
ethylbenzene	<b>ACGIH TLV (United States, 3/2015).</b> TWA: 20 ppm 8 hours. <b>OSHA PEL (United States, 2/2013).</b> TWA: 435 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours.

## Section 8. Exposure controls/personal protection

toluene

OSHA PEL Z2 (United States, 2/2013).

AMP: 500 ppm 10 minutes.

CEIL: 300 ppm

TWA: 200 ppm 8 hours.

ACGIH TLV (United States, 3/2015).

TWA: 20 ppm 8 hours.

### Key to abbreviations

A	= Acceptable Maximum Peak	S	= Potential skin absorption
ACGIH	= American Conference of Governmental Industrial Hygienists.	SR	= Respiratory sensitization
C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit	TD	= Total dust
OSHA	= Occupational Safety and Health Administration.	TLV	= Threshold Limit Value
R	= Respirable	TWA	= Time Weighted Average
Z	= OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances		

### Consult local authorities for acceptable exposure limits.

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Chemical splash goggles.

#### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

## Section 8. Exposure controls/personal protection

- Gloves** : For prolonged or repeated handling, use the following type of gloves:
- Recommended: polyvinyl alcohol (PVA), Viton®  
Not recommended: nitrile rubber
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : >37.78°C (>100°F)
- Flash point** : Closed cup: Not applicable.
- Material supports combustion.** : Yes.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Evaporation rate** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 0.86
- Density ( lbs / gal )** : 7.18
- Solubility** : Insoluble in the following materials: cold water.
- Partition coefficient: n-octanol/water** : Not available.
- Viscosity** : Kinematic (40°C (104°F)): >0.21 cm<sup>2</sup>/s (>21 cSt)

## Section 9. Physical and chemical properties

Volatility : 0% (v/v), 100% (w/w)  
 % Solid. (w/w) : 0

## Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
xylene	LC50 Inhalation Gas.	Rat	6670 ppm	4 hours
	LC50 Inhalation Vapor	Rat	5000 ppm	4 hours
	LD50 Dermal	Rabbit	>1.7 g/kg	-
	LD50 Oral	Rat	4.3 g/kg	-
ethylbenzene	LC50 Inhalation Vapor	Rat	4000 ppm	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-
toluene	LC50 Inhalation Vapor	Rat	49 g/m <sup>3</sup>	4 hours
	LC50 Inhalation Vapor	Rat	8000 ppm	4 hours
	LD50 Dermal	Rabbit	8.39 g/kg	-
	LD50 Oral	Rat	636 mg/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
xylene	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

#### Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

**Section 11. Toxicological information**

**Respiratory** : There are no data available on the mixture itself.

**Sensitization****Conclusion/Summary**

**Skin** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

**Mutagenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Carcinogenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Classification**

Product/ingredient name	OSHA	IARC	NTP
xylene	-	3	-
ethylbenzene	-	2B	-
toluene	-	3	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4

NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen

OSHA: +

Not listed/not regulated: -

**Reproductive toxicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Teratogenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Specific target organ toxicity (single exposure)**

Name	Category
xylene	Category 3
toluene	Category 3

**Specific target organ toxicity (repeated exposure)**

Name	Category
xylene	Category 2
ethylbenzene	Category 2
toluene	Category 2

**Target organs**

: Contains material which causes damage to the following organs: brain.  
Contains material which may cause damage to the following organs: kidneys, lungs, the nervous system, liver, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), ears, eye, lens or cornea.

**Aspiration hazard**

Name	Result
xylene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1
toluene	ASPIRATION HAZARD - Category 1

## Section 11. Toxicological information

### Information on the likely routes of exposure

#### Potential acute health effects

- Eye contact : Causes serious eye irritation.  
Inhalation : Harmful if inhaled. May cause respiratory irritation.  
Skin contact : Harmful in contact with skin. Causes skin irritation. Defatting to the skin.  
Ingestion : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- Eye contact : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact : Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

#### Delayed and immediate effects and also chronic effects from short and long term exposure

- Conclusion/Summary : There are no data available on the mixture itself. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

#### Short term exposure

- Potential immediate effects : There are no data available on the mixture itself.  
Potential delayed effects : There are no data available on the mixture itself.

#### Long term exposure

**Section 11. Toxicological information**

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

**Potential chronic health effects**

General : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : Suspected of damaging the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

**Numerical measures of toxicity****Acute toxicity estimates**

Route	ATE value
Oral	4174.2 mg/kg
Dermal	1300.5 mg/kg
Inhalation (gases)	6244.2 ppm
Inhalation (vapors)	11.05 mg/l
Inhalation (dusts and mists)	1.506 mg/l

**Section 12. Ecological information****Toxicity**

Product/ingredient name	Result	Species	Exposure
ethylbenzene	Acute LC50 150 to 200 mg/l Fresh water	Fish - Lepomis macrochirus - Young of the year	96 hours

**Persistence and degradability**

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylene	-	-	Readily
ethylbenzene	-	-	Readily
toluene	-	-	Readily

**Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
xylene	3.16	7.4 to 18.5	low
ethylbenzene	3.15	79.43	low
toluene	2.73	8.32	low

**Mobility in soil**

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.



**Section 12. Ecological information****Section 13. Disposal considerations**

## Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

**14. Transport information**

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
Transport hazard class (es)	3	3	3
Packing group	III	III	III
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.
Product RQ (lbs)	118.22	Not applicable.	Not applicable.
RQ substances	(xylene, ethylbenzene)	Not applicable.	Not applicable.

## Additional information

DOT : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

IMDG : None identified.

IATA : None identified.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Product code 19A334836

Date of issue 29 April 2016

Version 3

Product name AMERCOAT 65 THINNER US

### 14. Transport information

### Section 15. Regulatory information

#### United States

United States inventory (TSCA 8b) : All components are listed or exempted.

#### SARA 302/304

SARA 304 RQ : Not applicable.

#### Composition/information on ingredients

No products were found.

#### SARA 311/312

Classification : Fire hazard  
Immediate (acute) health hazard  
Delayed (chronic) health hazard

#### Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
xylene	Yes.	No.	No.	Yes.	Yes.
ethylbenzene	Yes.	No.	No.	Yes.	Yes.
toluene	Yes.	No.	No.	Yes.	Yes.

#### SARA 313

Supplier notification	Chemical name	CAS number	Concentration
	xylene	1330-20-7	60 - 100
	ethylbenzene	100-41-4	10 - 30

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

#### California Prop. 65

**WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

### Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 \* Flammability : 0 Physical hazards : 0

(\* ) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

**Section 16. Other information**

Health : 2      Flammability : 0      Instability      0

Date of previous issue : 3/11/2016

Organization that prepared : EHS  
the MSDS

Key to abbreviations : ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973  
as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations

Indicates information that has changed from previously issued version.

**Disclaimer**

*The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.*

Amercoat 385 Cure

By

Ameron

# SAFETY DATA SHEET



Date of issue/Date of revision : 1 May 2016  
Version 8

## Section 1. Identification

Product name : AMERCOAT 385 CURE US  
Product code : 00348378  
Other means of identification : Not available.  
Product type : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications, Used by spraying.  
Use of the substance/  
mixture : Coating.  
Uses advised against : Not applicable.

Manufacturer : PPG Industries, Inc.  
One PPG Place  
Pittsburgh, PA 15272  
Emergency telephone  
number : (412) 434-4515 (U.S.)  
(514) 645-1320 (Canada)  
01-800-00-21-400 (Mexico)

Technical Phone Number : 888-977-4762

## Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture :  FLAMMABLE LIQUIDS - Category 3  
SKIN CORROSION - Category 1B  
SERIOUS EYE DAMAGE - Category 1  
SKIN SENSITIZATION - Category 1  
CARCINOGENICITY - Category 2  
TOXIC TO REPRODUCTION (Fertility) - Category 2  
TOXIC TO REPRODUCTION (Unborn child) - Category 2  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 60.2%

### GHS label elements

## Section 2. Hazards identification

### Hazard pictograms



### Signal word

: Danger

### Hazard statements

: Flammable liquid and vapor.  
 Causes severe skin burns and eye damage.  
 May cause an allergic skin reaction.  
 Suspected of damaging fertility or the unborn child.  
 Suspected of causing cancer.  
 May cause respiratory irritation.

### Precautionary statements

#### Prevention

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

#### Response

: IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

#### Storage

: Store locked up. Store in a well-ventilated place. Keep cool.

#### Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

### Supplemental label elements

: Do not taste or swallow. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

### Hazards not otherwise classified

: Causes digestive tract burns. Prolonged or repeated contact may dry skin and cause irritation.

### Section 3. Composition/information on ingredients

Substance/mixture : Mixture  
Product name : AMERCOAT 385 CURE US

Ingredient name	%	CAS number
Alc , not containing asbestiform fibres	≥20 - ≤50	14807-96-6
Polyaminoamide	≥10 - ≤20	68082-29-1
Solvent naphtha (petroleum), light aromatic	≥5.0 - ≤11	64742-95-6
Solvent naphtha (petroleum), heavy arom.	≥5.0 - ≤8.1	64742-94-5
4-nonylphenol, branched	≥5.0 - ≤8.3	84852-15-3
1,2,4-trimethylbenzene	≥5.0 - ≤7.7	95-63-6
3,6-diazaoctanethylenediamin	≤1.8	112-24-3
naphthalene	<1.0	91-20-3
Phenol, 2-nonyl-, branched	<1.0	91672-41-2
ethylbenzene	<1.0	100-41-4
cumene	<1.0	98-82-8

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

#### Description of necessary first aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : May cause respiratory irritation.
- Skin contact** : Causes severe burns. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : Corrosive to the digestive tract. Causes burns.

##### Over-exposure signs/symptoms

## Section 4. First aid measures

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
dryness  
cracking  
blistering may occur  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
stomach pains  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.



## Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
metal oxide/oxides
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## Section 6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Special precautions** : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Do not store above the following temperature: 35°C (95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Talc, not containing asbestiform fibres  Polyaminoamide Solvent naphtha (petroleum), light aromatic Solvent naphtha (petroleum), heavy arom. 4-nonylphenol, branched 1,2,4-trimethylbenzene  3,6-diazaoctanethylenediamin  naphthalene  Phenol, 2-nonyl-, branched ethylbenzene  cumene	<b>ACGIH TLV (United States, 3/2015).</b> TWA: 2 mg/m <sup>3</sup> 8 hours. Form: Respirable <b>OSHA PEL Z3 (United States, 2/2013).</b> TWA: 20 mppcf 8 hours. Form: not containing asbestos None. None. None. None. <b>ACGIH TLV (United States, 3/2015).</b> TWA: 123 mg/m <sup>3</sup> 8 hours. TWA: 25 ppm 8 hours. <b>IPEL (PPG). Absorbed through skin.</b> TWA: 1 ppm <b>ACGIH TLV (United States, 3/2015).</b> <b>Absorbed through skin.</b> TWA: 52 mg/m <sup>3</sup> 8 hours. TWA: 10 ppm 8 hours. <b>OSHA PEL (United States, 2/2013).</b> TWA: 50 mg/m <sup>3</sup> 8 hours. TWA: 10 ppm 8 hours. None. <b>ACGIH TLV (United States, 3/2015).</b> TWA: 20 ppm 8 hours. <b>OSHA PEL (United States, 2/2013).</b> TWA: 435 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours. <b>ACGIH TLV (United States, 3/2015).</b> TWA: 50 ppm 8 hours. <b>OSHA PEL (United States, 2/2013).</b> <b>Absorbed through skin.</b> TWA: 245 mg/m <sup>3</sup> 8 hours. TWA: 50 ppm 8 hours.

#### Key to abbreviations

A	= Acceptable Maximum Peak
ACGIH	= American Conference of Governmental Industrial Hygienists.
C	= Ceiling Limit
F	= Fume
IPEL	= Internal Permissible Exposure Limit
OSHA	= Occupational Safety and Health Administration.
R	= Respirable
Z	= OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances

S	= Potential skin absorption
SR	= Respiratory sensitization
SS	= Skin sensitization
STEL	= Short term Exposure limit values
TD	= Total dust
TLV	= Threshold Limit Value
TWA	= Time Weighted Average

Consult local authorities for acceptable exposure limits.

## Section 8. Exposure controls/personal protection

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Chemical splash goggles and face shield.

### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Gloves** : nitrile neoprene

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

## Section 9. Physical and chemical properties

### Appearance

Physical state	: Liquid.
Color	: Not available.
Odor	: Characteristic.
Odor threshold	: Not available.
pH	: Not available.
Melting point	: Not available.
Boiling point	: >37.78°C (>100°F)
Flash point	: Closed cup: 47.78°C (118°F)
Material supports combustion.	: Yes.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Lower: 1.14% Upper: 6.98%
Evaporation rate	: 0.2 (butyl acetate = 1)
Vapor pressure	: 0.75 kPa (5.6 mm Hg) [room temperature]
Vapor density	: Not available.
Relative density	: 1.36
Density ( lbs / gal )	: 11.35
Solubility	: Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/water	: Not available.
Viscosity	: Kinematic (40°C (104°F)): >0.21 cm <sup>2</sup> /s (>21 cSt)
Volatility	: 45% (v/v), 28.979% (w/w)
% Solid. (w/w)	: 71.021

## Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.
Incompatible materials	: Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

## Section 10. Stability and reactivity

Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Solvent naphtha (petroleum), light aromatic	LD50 Dermal	Rabbit	3.48 g/kg	-
	LD50 Oral	Rat	8400 mg/kg	-
Solvent naphtha (petroleum), heavy arom.	LD50 Dermal	Rabbit	>1.693 g/kg	-
	LD50 Oral	Rat	3.2 g/kg	-
4-nonylphenol, branched	LD50 Dermal	Rabbit	2.14 g/kg	-
	LD50 Oral	Rat	0.58 g/kg	-
1,2,4-trimethylbenzene	LC50 Inhalation Vapor	Rat	18000 mg/m <sup>3</sup>	4 hours
	LD50 Oral	Rat	5 g/kg	-
3,6-diazaoctanethylenediamin	LD50 Dermal	Rabbit	805 mg/kg	-
	LD50 Oral	Rat	2500 mg/kg	-
naphthalene	LD50 Dermal	Rabbit	>20 g/kg	-
	LD50 Oral	Rat	490 mg/kg	-
ethylbenzene	LC50 Inhalation Vapor	Rat	4000 ppm	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-
cumene	LC50 Inhalation Vapor	Rat	39000 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	12.3 g/kg	-
	LD50 Oral	Rat	1400 mg/kg	-

**Conclusion/Summary** : There are no data available on the mixture itself.

#### Irritation/Corrosion

##### Conclusion/Summary

**Skin** : There are no data available on the mixture itself.

**Eyes** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

#### Sensitization

##### Conclusion/Summary

**Skin** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

#### Mutagenicity

**Conclusion/Summary** : There are no data available on the mixture itself.

#### Carcinogenicity

**Conclusion/Summary** : There are no data available on the mixture itself.

#### Classification

**Section 11. Toxicological information**

Product/ingredient name	OSHA	IARC	NTP
naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.
ethylbenzene	-	2B	-
cumene	-	2B	Reasonably anticipated to be a human carcinogen.

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4

NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen

OSHA: +

Not listed/not regulated: -

**Reproductive toxicity**

Conclusion/Summary : There are no data available on the mixture itself.

**Teratogenicity**

Conclusion/Summary : There are no data available on the mixture itself.

**Specific target organ toxicity (single exposure)**

Name	Category
Talc , not containing asbestiform fibres	Category 3
Solvent naphtha (petroleum), light aromatic	Category 3
Solvent naphtha (petroleum), heavy arom.	Category 3
1,2,4-trimethylbenzene	Category 3
cumene	Category 3

**Specific target organ toxicity (repeated exposure)**

Name	Category
naphthalene	Category 2
ethylbenzene	Category 2
cumene	Category 2

**Target organs**

: Contains material which causes damage to the following organs: brain, upper respiratory tract, skin, eyes, central nervous system (CNS).  
Contains material which may cause damage to the following organs: blood, kidneys, lungs, the reproductive system, liver, cardiovascular system.

**Aspiration hazard**

Name	Result
Solvent naphtha (petroleum), light aromatic	ASPIRATION HAZARD - Category 1
Solvent naphtha (petroleum), heavy arom.	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1
cumene	ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure****Potential acute health effects**

Eye contact : Causes serious eye damage.  
Inhalation : May cause respiratory irritation.  
Skin contact : Causes severe burns. Defatting to the skin. May cause an allergic skin reaction.  
Ingestion : Corrosive to the digestive tract. Causes burns.

**Over-exposure signs/symptoms**

## Section 11. Toxicological information

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
dryness  
cracking  
blistering may occur  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
stomach pains  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

### Delayed and immediate effects and also chronic effects from short and long term exposure

- Conclusion/Summary** : There are no data available on the mixture itself. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

#### Short term exposure

- Potential immediate effects** : There are no data available on the mixture itself.
- Potential delayed effects** : There are no data available on the mixture itself.

#### Long term exposure

- Potential immediate effects** : There are no data available on the mixture itself.
- Potential delayed effects** : There are no data available on the mixture itself.

#### Potential chronic health effects

- General** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.



## Section 11. Toxicological information

Carcinogenicity	: Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: Suspected of damaging the unborn child.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: Suspected of damaging fertility.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	2583.1 mg/kg
Dermal	2670.2 mg/kg
Inhalation (gases)	29836 ppm
Inhalation (vapors)	119.3 mg/l
Inhalation (dusts and mists)	9.945 mg/l

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Phenol, 2-nonyl-, branched ethylbenzene	Acute LC50 0.017 mg/l	Fish - Pleuronectes americanus	96 hours
	Acute LC50 150 to 200 mg/l Fresh water	Fish - Lepomis macrochirus - Young of the year	96 hours

### Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
ethylbenzene	-	-	Readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
4-nonylphenol, branched	-	251.19	low
1,2,4-trimethylbenzene	3.63	120.23	low
3,6-diazaoctanethylenediamin	-1.66 to -1.4	-	low
naphthalene	3.3	85.11	low
ethylbenzene	3.15	79.43	low
cumene	3.66	35.48	low

### Mobility in soil

Soil/water partition coefficient (K <sub>oc</sub> )	: Not available.
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## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

## 14. Transport information

	DOT	IMDG	IATA
UN number	UN3469	UN3469	UN3469
UN proper shipping name	PAINT, FLAMMABLE, CORROSIVE	PAINT, FLAMMABLE, CORROSIVE	PAINT, FLAMMABLE, CORROSIVE
Transport hazard class (es)	3 (8)	3 (8)	3 (8)
Packing group	III	III	III
Environmental hazards	No.	Yes.	No.
Marine pollutant substances	Not applicable.	(Solvent naphtha (petroleum), light aromatic, Solvent naphtha (petroleum), heavy aromatic)	Not applicable.
Product RQ (lbs)	10726.1	Not applicable.	Not applicable.
RQ substances	(xylene, naphthalene)	Not applicable.	Not applicable.

### Additional information

- DOT** : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Section 15. Regulatory information**United States

**United States inventory (TSCA 8b)** : All components are listed or exempted.

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : Fire hazard  
 Immediate (acute) health hazard  
 Delayed (chronic) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Isoc, not containing asbestiform fibres	No.	No.	No.	Yes.	No.
Polyaminoamide	No.	No.	No.	Yes.	No.
Solvent naphtha (petroleum), light aromatic	Yes.	No.	No.	Yes.	No.
Solvent naphtha (petroleum), heavy arom.	Yes.	No.	No.	Yes.	No.
4-nonylphenol, branched	No.	No.	No.	Yes.	Yes.
1,2,4-trimethylbenzene	Yes.	No.	No.	Yes.	No.
3,6-diazaoctanethylenediamin	No.	No.	No.	Yes.	No.
naphthalene	Yes.	No.	Yes.	Yes.	Yes.
Phenol, 2-nonyl-, branched	No.	No.	No.	Yes.	Yes.
ethylbenzene	Yes.	No.	No.	Yes.	Yes.
cumene	Yes.	No.	No.	Yes.	Yes.

SARA 313

Supplier notification	Chemical name	CAS number	Concentration
	4-nonylphenol, branched	84852-15-3	3 - 7
	1,2,4-trimethylbenzene	95-63-6	3 - 7
	naphthalene	91-20-3	0.1 - 1
	ethylbenzene	100-41-4	0.1 - 1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

**Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.**

California Prop. 65

**WARNING:** This product contains a chemical known to the State of California to cause cancer.

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

Health : 3 \* Flammability : 2 Physical hazards : 0

(\*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

### National Fire Protection Association (U.S.A.)

Health : 3 Flammability : 2 Instability : 0

Date of previous issue : 12/7/2015

Organization that prepared the MSDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations

Indicates information that has changed from previously issued version.

### Disclaimer

*The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.*

Amercoat 385 Resin

By

Ameron

# SAFETY DATA SHEET



Date of issue/Date of revision : 30 April 2016

Version 6

## Section 1. Identification

Product name : AMERCOAT 385 BLACK RESIN  
Product code : 00334373  
Other means of identification : Not available.  
Product type : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications, Used by spraying.  
Use of the substance/  
mixture : Coating.  
Uses advised against : Not applicable.

Manufacturer : PPG Industries, Inc.  
One PPG Place  
Pittsburgh, PA 15272

Emergency telephone number : (412) 434-4515 (U.S.)  
(514) 645-1320 (Canada)  
01-800-00-21-400 (Mexico)

Technical Phone Number : 888-977-4762

## Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture :  FLAMMABLE LIQUIDS - Category 3  
SKIN IRRITATION - Category 2  
EYE IRRITATION - Category 2A  
SKIN SENSITIZATION - Category 1  
CARCINOGENICITY - Category 2

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 41.1%

### GHS label elements

Hazard pictograms :



Signal word : Warning

## Section 2. Hazards identification

**Hazard statements** : Flammable liquid and vapor.  
Causes serious eye irritation.  
Causes skin irritation.  
May cause an allergic skin reaction.  
Suspected of causing cancer.

### Precautionary statements

**Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

**Response** : IF exposed or concerned: Get medical attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

**Storage** : Store locked up. Store in a well-ventilated place. Keep cool.

**Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Supplemental label elements** : Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

**Hazards not otherwise classified** : Prolonged or repeated contact may dry skin and cause irritation.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture  
**Product name** : AMERCOAT 385 BLACK RESIN

Ingredient name	%	CAS number
Epoxy resin (MW ≤ 700)	≥20 - ≤50	25068-38-6
heptan-2-one	≥5.0 - ≤9.9	110-43-0
Solvent naphtha (petroleum), heavy arom.	≥1.0 - ≤5.0	64742-94-5
Solvent naphtha (petroleum), light aromatic	≥1.0 - ≤5.0	64742-95-6
1,2,4-trimethylbenzene	≥1.0 - ≤3.3	95-63-6
3-butoxypropan-2-ol	≥1.0 - ≤4.6	5131-66-8
carbon black, respirable powder	≤1.0	1333-86-4
naphthalene	<1.0	91-20-3
cumene	<1.0	98-82-8

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

### Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

#### Description of necessary first aid measures

- Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

##### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking
- Ingestion** : No specific data.

#### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.



## Section 4. First aid measures

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

Suitable extinguishing media : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
halogenated compounds

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

## Section 6. Accidental release measures

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Special precautions** : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Do not store above the following temperature: 35°C (95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Epoxy resin (MW ≤ 700) heptan-2-one	None. <b>ACGIH TLV (United States, 3/2015).</b> TWA: 233 mg/m <sup>3</sup> 8 hours. TWA: 50 ppm 8 hours. <b>OSHA PEL (United States, 2/2013).</b> TWA: 465 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours.
Solvent naphtha (petroleum), heavy arom. Solvent naphtha (petroleum), light aromatic 1,2,4-trimethylbenzene	None. None. <b>ACGIH TLV (United States, 3/2015).</b> TWA: 123 mg/m <sup>3</sup> 8 hours. TWA: 25 ppm 8 hours.
3-butoxypropan-2-ol	<b>IPEL (PPG).</b> TWA: 50 ppm
carbon black, respirable powder	<b>ACGIH TLV (United States, 3/2015).</b> TWA: 3 mg/m <sup>3</sup> 8 hours. Form: Inhalable fraction <b>OSHA PEL (United States, 2/2013).</b> TWA: 3.5 mg/m <sup>3</sup> 8 hours.
naphthalene	<b>ACGIH TLV (United States, 3/2015).</b> <b>Absorbed through skin.</b> TWA: 52 mg/m <sup>3</sup> 8 hours. TWA: 10 ppm 8 hours. <b>OSHA PEL (United States, 2/2013).</b> TWA: 50 mg/m <sup>3</sup> 8 hours. TWA: 10 ppm 8 hours.
cumene	<b>ACGIH TLV (United States, 3/2015).</b> TWA: 50 ppm 8 hours. <b>OSHA PEL (United States, 2/2013).</b> <b>Absorbed through skin.</b> TWA: 245 mg/m <sup>3</sup> 8 hours. TWA: 50 ppm 8 hours.

#### Key to abbreviations

A	= Acceptable Maximum Peak	S	= Potential skin absorption
ACGIH	= American Conference of Governmental Industrial Hygienists.	SR	= Respiratory sensitization
C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit	TD	= Total dust
OSHA	= Occupational Safety and Health Administration.	TLV	= Threshold Limit Value
R	= Respirable	TWA	= Time Weighted Average
Z	= OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances		

#### Consult local authorities for acceptable exposure limits.

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

## Section 8. Exposure controls/personal protection

- Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

- Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection : Chemical splash goggles.
- Skin protection
- Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Gloves : butyl rubber
- Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

## Section 9. Physical and chemical properties

### Appearance

- Physical state : Liquid.
- Color : Black.
- Odor : Characteristic.
- Odor threshold : Not available.
- pH : Not available.

## Section 9. Physical and chemical properties

Melting point	: Not available.
Boiling point	: >37.78°C (>100°F)
Flash point	: Closed cup: 53.33°C (128°F)
Material supports combustion.	: Yes.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Lower: 1.07% Upper: 4.54%
Evaporation rate	: 0.25 (butyl acetate = 1)
Vapor pressure	: 0.49 kPa (3.7 mm Hg) [room temperature]
Vapor density	: Not available.
Relative density	: 1.32
Density ( lbs / gal )	: 11.02
Solubility	: Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/water	: Not available.
Viscosity	: Kinematic (40°C (104°F)): >0.21 cm <sup>2</sup> /s (>21 cSt)
Volatility	: 30% (v/v), 19.328% (w/w)
% Solid. (w/w)	: 80.672

## Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.
Incompatible materials	: Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
Hazardous decomposition products	: Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Epoxy resin (MW ≤ 700)	LD50 Dermal	Rabbit	>2 g/kg	-
	LD50 Oral	Rat	>2 g/kg	-
heptan-2-one	LC50 Inhalation Vapor	Rat	>16.7 mg/l	4 hours
	LD50 Dermal	Rabbit	10.206 g/kg	-
Solvent naphtha (petroleum), heavy arom.	LD50 Oral	Rat	1.6 g/kg	-
	LD50 Dermal	Rabbit	>1.693 g/kg	-
Solvent naphtha (petroleum), light aromatic	LD50 Oral	Rat	3.2 g/kg	-
	LD50 Dermal	Rabbit	3.48 g/kg	-
1,2,4-trimethylbenzene	LD50 Oral	Rat	8400 mg/kg	-
	LC50 Inhalation Vapor	Rat	18000 mg/m <sup>3</sup>	4 hours
3-butoxypropan-2-ol	LD50 Oral	Rat	5 g/kg	-
	LD50 Dermal	Rabbit	3100 mg/kg	-
carbon black, respirable powder	LD50 Oral	Rat	2.2 g/kg	-
	LD50 Dermal	Rabbit	>3 g/kg	-
naphthalene	LD50 Oral	Rat	>15400 mg/kg	-
	LD50 Dermal	Rabbit	>20 g/kg	-
cumene	LD50 Oral	Rat	490 mg/kg	-
	LC50 Inhalation Vapor	Rat	39000 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	12.3 g/kg	-
	LD50 Oral	Rat	1400 mg/kg	-

**Conclusion/Summary** : There are no data available on the mixture itself.

#### Irritation/Corrosion

##### Conclusion/Summary

**Skin** : There are no data available on the mixture itself.

**Eyes** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

#### Sensitization

##### Conclusion/Summary

**Skin** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

#### Mutagenicity

**Conclusion/Summary** : There are no data available on the mixture itself.

#### Carcinogenicity

**Conclusion/Summary** : There are no data available on the mixture itself.

#### Classification

**Section 11. Toxicological information**

Product/ingredient name	OSHA	IARC	NTP
carbon black, respirable powder	-	2B	-
naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.
cumene	-	2B	Reasonably anticipated to be a human carcinogen.

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4

NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen

OSHA: +

Not listed/not regulated: -

**Reproductive toxicity**

Conclusion/Summary : There are no data available on the mixture itself.

**Teratogenicity**

Conclusion/Summary : There are no data available on the mixture itself.

**Specific target organ toxicity (single exposure)**

Name	Category
Solvent naphtha (petroleum), heavy arom.	Category 3
Solvent naphtha (petroleum), light aromatic	Category 3
1,2,4-trimethylbenzene	Category 3
cumene	Category 3

**Specific target organ toxicity (repeated exposure)**

Name	Category
naphthalene	Category 2
cumene	Category 2

**Target organs**

: Contains material which causes damage to the following organs: brain, central nervous system (CNS).

Contains material which may cause damage to the following organs: blood, lungs, peripheral nervous system, upper respiratory tract, skin, eye, lens or cornea.

**Aspiration hazard**

Name	Result
Solvent naphtha (petroleum), heavy arom.	ASPIRATION HAZARD - Category 1
Solvent naphtha (petroleum), light aromatic	ASPIRATION HAZARD - Category 1
cumene	ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure****Potential acute health effects**

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

## Section 11. Toxicological information

Eye contact : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking

Ingestion : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

### Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

### Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

### Potential chronic health effects

General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates



Product name AMERCOAT 385 BLACK RESIN

**Section 11. Toxicological information**

Route	ATE value
Oral	9187.6 mg/kg
Dermal	10747.9 mg/kg
Inhalation (gases)	29860.2 ppm
Inhalation (vapors)	80.91 mg/l
Inhalation (dusts and mists)	9.953 mg/l

**Section 12. Ecological information**Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
heptan-2-one	1.98	-	low
1,2,4-trimethylbenzene	3.63	120.23	low
3-butoxypropan-2-ol	1.15	-	low
naphthalene	3.3	85.11	low
cumene	3.66	35.48	low

Mobility in soilSoil/water partition coefficient (K<sub>oc</sub>) : Not available.**Section 13. Disposal considerations**

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Disposal should be in accordance with applicable regional, national and local laws and regulations.**

Product name AMERCOAT 385 BLACK RESIN

**Section 13. Disposal considerations**

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

**14. Transport information**

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class (es)	3	3	3
Packing group	III	III	III
Environmental hazards	No.	Yes.	No.
Marine pollutant substances	Not applicable.	(Epoxy resin (MW ≤ 700), Solvent naphtha (petroleum), heavy aromatic)	Not applicable.
Product RQ (lbs)	20669.1	Not applicable.	Not applicable.
RQ substances	(naphthalene, xylene)	Not applicable.	Not applicable.

**Additional information**

- DOT** : This product may be re-classified as "Combustible Liquid," unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials in package sizes less than the product reportable quantity.
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Section 15. Regulatory information****United States**

**United States inventory (TSCA 8b)** : All components are listed or exempted.

**SARA 302/304**

**SARA 304 RQ** : Not applicable.

**Composition/information on ingredients**

No products were found.

**SARA 311/312**

**Classification** : Fire hazard  
 Immediate (acute) health hazard  
 Delayed (chronic) health hazard

Product name AMERCOAT 385 BLACK RESIN

**Section 15. Regulatory information****Composition/information on ingredients**

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
✓ epoxy resin (MW ≤ 700)	No.	No.	No.	Yes.	No.
heptan-2-one	Yes.	No.	No.	Yes.	No.
Solvent naphtha (petroleum), heavy arom.	Yes.	No.	No.	Yes.	No.
Solvent naphtha (petroleum), light aromatic	Yes.	No.	No.	Yes.	No.
1,2,4-trimethylbenzene	Yes.	No.	No.	Yes.	No.
3-butoxypropan-2-ol	Yes.	No.	No.	Yes.	No.
carbon black, respirable powder	Yes.	No.	No.	No.	Yes.
naphthalene	Yes.	No.	Yes.	Yes.	Yes.
cumene	Yes.	No.	No.	Yes.	Yes.

**SARA 313**

	<u>Chemical name</u>	<u>CAS number</u>	<u>Concentration</u>
Supplier notification	: 1,2,4-trimethylbenzene	95-63-6	1 - 5
	naphthalene	91-20-3	0.1 - 1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

**Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.**

**California Prop. 65**

**WARNING:** This product contains a chemical known to the State of California to cause cancer.

**Section 16. Other information****Hazardous Material Information System (U.S.A.)**

Health : 2 \* Flammability : 2 Physical hazards : 0

(\* ) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

**The customer is responsible for determining the PPE code for this material.**

**National Fire Protection Association (U.S.A.)**

Health : 2 Flammability : 2 Instability : 0

Date of previous issue : 12/8/2015

Organization that prepared the MSDS : EHS

## Section 16. Other information

**Key to abbreviations**

: ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973  
as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations

Indicates information that has changed from previously issued version.

**Disclaimer**

*The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.*

Amercoat 385PA Resin

By

Ameron

# SAFETY DATA SHEET



Date of issue/Date of revision : 28 April 2016

Version 6

## Section 1. Identification

Product name : AMERCOAT 385PA WHITE RESIN  
Product code : AT385A-3  
Other means of identification : Not available.  
Product type : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications.  
Use of the substance/mixture : Coating. Paints. Painting-related materials.  
Uses advised against : Not applicable.

Manufacturer : PPG Industries, Inc.  
One PPG Place  
Pittsburgh, PA 15272

Emergency telephone number : (412) 434-4515 (U.S.)  
(514) 645-1320 (Canada)  
01-800-00-21-400 (Mexico)

Technical Phone Number : 888-977-4762

## Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture :  FLAMMABLE LIQUIDS - Category 3  
SKIN IRRITATION - Category 2  
EYE IRRITATION - Category 2A  
SKIN SENSITIZATION - Category 1  
CARCINOGENICITY - Category 2

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 19.8%

### GHS label elements

Hazard pictograms :



Signal word : Warning

**Section 2. Hazards identification**

**Hazard statements** : Flammable liquid and vapor.  
 Causes serious eye irritation.  
 Causes skin irritation.  
 May cause an allergic skin reaction.  
 Suspected of causing cancer.

**Precautionary statements**

**Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

**Response** : IF exposed or concerned: Get medical attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

**Storage** : Store locked up. Store in a well-ventilated place. Keep cool.

**Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Supplemental label elements** : Sanding and grinding dusts may be harmful if inhaled. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

**Hazards not otherwise classified** : Prolonged or repeated contact may dry skin and cause irritation.

**Section 3. Composition/information on ingredients**

**Substance/mixture** : Mixture  
**Product name** : AMERCOAT 385PA WHITE RESIN

Ingredient name	%	CAS number
Epoxy resin (MW ≤ 700)	≥20 - ≤50	25068-38-6
titanium dioxide	≥20 - ≤50	13463-67-7
Solvent naphtha (petroleum), light aromatic	≥1.0 - ≤5.0	64742-95-6
Solvent naphtha (petroleum), heavy arom.	≥1.0 - ≤5.0	64742-94-5
1,2,4-trimethylbenzene	≥1.0 - ≤5.0	95-63-6
3-butoxypropan-2-ol	≥1.0 - ≤5.0	5131-66-8
naphthalene	<1.0	91-20-3

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

### Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

#### Description of necessary first aid measures

- Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

##### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking
- Ingestion** : No specific data.

#### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.



## Section 4. First aid measures

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

Suitable extinguishing media : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
phosphorus oxides  
halogenated compounds  
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

## Section 6. Accidental release measures

### Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Special precautions** : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

## Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 35°C (95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Epoxy resin (MW ≤ 700) titanium dioxide	None. <b>OSHA PEL (United States, 2/2013).</b> TWA: 15 mg/m <sup>3</sup> 8 hours. Form: Total dust <b>ACGIH TLV (United States, 3/2015).</b> TWA: 10 mg/m <sup>3</sup> 8 hours.
Solvent naphtha (petroleum), light aromatic Solvent naphtha (petroleum), heavy arom. 1,2,4-trimethylbenzene	None. None. <b>ACGIH TLV (United States, 3/2015).</b> TWA: 123 mg/m <sup>3</sup> 8 hours. TWA: 25 ppm 8 hours.
3-butoxypropan-2-ol	<b>IPEL (PPG).</b> TWA: 50 ppm
naphthalene	<b>ACGIH TLV (United States, 3/2015).</b> <b>Absorbed through skin.</b> TWA: 52 mg/m <sup>3</sup> 8 hours. TWA: 10 ppm 8 hours. <b>OSHA PEL (United States, 2/2013).</b> TWA: 50 mg/m <sup>3</sup> 8 hours. TWA: 10 ppm 8 hours.

#### Key to abbreviations

A = Acceptable Maximum Peak	S = Potential skin absorption
ACGIH = American Conference of Governmental Industrial Hygienists.	SR = Respiratory sensitization
C = Ceiling Limit	SS = Skin sensitization
F = Fume	STEL = Short term Exposure limit values
IPEL = Internal Permissible Exposure Limit	TD = Total dust
OSHA = Occupational Safety and Health Administration.	TLV = Threshold Limit Value
R = Respirable	TWA = Time Weighted Average
Z = OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances	

### Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

## Section 8. Exposure controls/personal protection

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Gloves** : butyl rubber
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.

## Section 9. Physical and chemical properties

Boiling point	: >37.78°C (>100°F)
Flash point	: Closed cup: 53.33°C (128°F)
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Lower: 1%
Evaporation rate	: 0.23 (butyl acetate = 1)
Vapor pressure	: 0.57 kPa (4.3 mm Hg) [room temperature]
Vapor density	: Not available.
Relative density	: 1.5
Density ( lbs / gal )	: 12.52
Solubility	: Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/water	: Not available.
Viscosity	: Kinematic (40°C (104°F)): >0.21 cm <sup>2</sup> /s (>21 cSt)
Volatility	: 29% (v/v), 17.56% (w/w)
% Solid. (w/w)	: 82.44

## Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.
Incompatible materials	: Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
Hazardous decomposition products	: Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

**Section 11. Toxicological information**Information on toxicological effectsAcute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Epoxy resin (MW ≤ 700)	LD50 Dermal	Rabbit	>2 g/kg	-
	LD50 Oral	Rat	>2 g/kg	-
titanium dioxide	LD50 Oral	Rat	>11 g/kg	-
	LD50 Dermal	Rabbit	3.48 g/kg	-
Solvent naphtha (petroleum), light aromatic	LD50 Oral	Rat	8400 mg/kg	-
	LD50 Dermal	Rabbit	>1.693 g/kg	-
Solvent naphtha (petroleum), heavy arom.	LD50 Oral	Rat	3.2 g/kg	-
	LC50 Inhalation Vapor	Rat	18000 mg/m <sup>3</sup>	4 hours
1,2,4-trimethylbenzene	LD50 Oral	Rat	5 g/kg	-
	LD50 Dermal	Rabbit	3100 mg/kg	-
3-butoxypropan-2-ol	LD50 Oral	Rat	2.2 g/kg	-
	LD50 Dermal	Rabbit	>20 g/kg	-
naphthalene	LD50 Oral	Rat	490 mg/kg	-

**Conclusion/Summary** : There are no data available on the mixture itself.

Irritation/CorrosionConclusion/Summary

**Skin** : There are no data available on the mixture itself.

**Eyes** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

SensitizationConclusion/Summary

**Skin** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

Mutagenicity

**Conclusion/Summary** : There are no data available on the mixture itself.

Carcinogenicity

**Conclusion/Summary** : There are no data available on the mixture itself.

Classification

Product/ingredient name	OSHA	IARC	NTP
titanium dioxide	-	2B	-
naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4

NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen

OSHA: +

Not listed/not regulated: -

Reproductive toxicity

**Conclusion/Summary** : There are no data available on the mixture itself.

Teratogenicity

**Section 11. Toxicological information**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Specific target organ toxicity (single exposure)**

Name	Category
Solvent naphtha (petroleum), light aromatic	Category 3
Solvent naphtha (petroleum), heavy arom.	Category 3
1,2,4-trimethylbenzene	Category 3

**Specific target organ toxicity (repeated exposure)**

Name	Category
naphthalene	Category 2

**Target organs** : Contains material which causes damage to the following organs: brain, eyes, central nervous system (CNS).  
Contains material which may cause damage to the following organs: blood, kidneys, lungs, upper respiratory tract, skin.

**Aspiration hazard**

Name	Result
Solvent naphtha (petroleum), light aromatic	ASPIRATION HAZARD - Category 1
Solvent naphtha (petroleum), heavy arom.	ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure****Potential acute health effects**

**Eye contact** : Causes serious eye irritation.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.  
**Ingestion** : No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

**Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness  
**Inhalation** : No specific data.  
**Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking  
**Ingestion** : No specific data.

**Delayed and immediate effects and also chronic effects from short and long term exposure**

**Conclusion/Summary** : There are no data available on the mixture itself. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than

**Section 11. Toxicological information**

expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

**Short term exposure**

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

**Long term exposure**

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

**Potential chronic health effects**

General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

**Numerical measures of toxicity****Acute toxicity estimates**

Route	ATE value
Oral	39412.6 mg/kg
Dermal	17168.8 mg/kg
Inhalation (gases)	175719.1 ppm
Inhalation (vapors)	702.9 mg/l
Inhalation (dusts and mists)	58.57 mg/l

**Section 12. Ecological information****Toxicity**

Product/ingredient name	Result	Species	Exposure
Titanium dioxide	Acute LC50 >100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours

**Persistence and degradability**

Not available.

**Bioaccumulative potential**



**Section 12. Ecological information**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<del>X</del> 2,4-trimethylbenzene	3.63	120.23	low
3-butoxypropan-2-ol	1.15	-	low
naphthalene	3.3	85.11	low

**Mobility in soil**

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

**Section 13. Disposal considerations**

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Disposal should be in accordance with applicable regional, national and local laws and regulations.**

**Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures**

**14. Transport information**

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class (es)	3	3	3
Packing group	III	III	III
Environmental hazards	No.	Yes.	No.
Marine pollutant substances	Not applicable.	(Epoxy resin (MW ≤ 700), trizinc bis(orthophosphate))	Not applicable.
Product RQ (lbs)	25702.3	Not applicable.	Not applicable.
RQ substances	(naphthalene)	Not applicable.	Not applicable.

**Additional information**

**14. Transport information**

- DOT** : This product may be re-classified as "Combustible Liquid," unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials in package sizes less than the product reportable quantity.
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Section 15. Regulatory information**United States

**United States Inventory (TSCA 8b)** : All components are listed or exempted.

SARA 302/304

**SARA 304 RQ** : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

**Classification** : Fire hazard  
Immediate (acute) health hazard  
Delayed (chronic) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Epoxy resin (MW ≤ 700)	No.	No.	No.	Yes.	No.
titanium dioxide	No.	No.	No.	No.	Yes.
Solvent naphtha (petroleum), light aromatic	Yes.	No.	No.	Yes.	No.
Solvent naphtha (petroleum), heavy arom.	Yes.	No.	No.	Yes.	No.
1,2,4-trimethylbenzene	Yes.	No.	No.	Yes.	No.
3-butoxypropan-2-ol	Yes.	No.	No.	Yes.	No.
naphthalene	Yes.	No.	Yes.	Yes.	Yes.

SARA 313

	<u>Chemical name</u>	<u>CAS number</u>	<u>Concentration</u>
<b>Supplier notification</b> :	trizinc bis(orthophosphate)	7779-90-0	5 - 10
	1,2,4-trimethylbenzene	95-63-6	1 - 5
	naphthalene	91-20-3	0.1 - 1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

Product code **AT385A-3**

Date of issue **28 April 2016**

Version **6**

Product name **AMERCOAT 385PA WHITE RESIN**

## Section 15. Regulatory information

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

### California Prop. 65

**WARNING:** This product contains a chemical known to the State of California to cause cancer.

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

Health : 2 \* Flammability : 2 Physical hazards : 0

(\* ) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

**The customer is responsible for determining the PPE code for this material.**

### National Fire Protection Association (U.S.A.)

Health : 2 Flammability : 2 Instability : 0

Date of previous issue : **12/12/2015**

Organization that prepared the MSDS : EHS

Key to abbreviations

: ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

UN = United Nations

Indicates information that has changed from previously issued version.

### Disclaimer

*The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.*

Amercoat 450 HS Resin

By

Ameron

# SAFETY DATA SHEET



Date of issue/Date of revision : 28 April 2016

Version 7

## Section 1. Identification

Product name : AMERCOAT 450HS BLACK RESIN  
Product code : AT45HS9  
Other means of identification : Not available.  
Product type : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications, Used by spraying.  
Use of the substance/  
mixture : Coating.  
Uses advised against : Not applicable.

Manufacturer : PPG Industries, Inc.  
One PPG Place  
Pittsburgh, PA 15272

Emergency telephone number : (412) 434-4515 (U.S.)  
(514) 645-1320 (Canada)  
01-800-00-21-400 (Mexico)

Technical Phone Number : 888-977-4762

## Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3  
CARCINOGENICITY - Category 1A  
TOXIC TO REPRODUCTION (Unborn child) - Category 2  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1  
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 69%

### GHS label elements

Hazard pictograms



Signal word : Danger

**Section 2. Hazards identification**

**Hazard statements** : Flammable liquid and vapor.  
 May cause cancer.  
 Suspected of damaging the unborn child.  
 Causes damage to organs through prolonged or repeated exposure.

**Precautionary statements**

**Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

**Response** : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

**Storage** : Store locked up. Store in a well-ventilated place. Keep cool.

**Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Supplemental label elements** : Sanding and grinding dusts may be harmful if inhaled. This product contains crystalline silica which can cause lung cancer or silicosis. The risk of cancer depends on the duration and level of exposure to dust from sanding surfaces or mist from spray applications. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

**Hazards not otherwise classified** : Prolonged or repeated contact may dry skin and cause irritation.

**Section 3. Composition/information on ingredients**

**Substance/mixture** : Mixture

**Product name** : AMERCOAT 450HS BLACK RESIN

Ingredient name	%	CAS number
n-butyl acetate	≥10 - ≤18	123-86-4
crystalline silica, respirable powder (<10 microns)	≥10 - ≤20	14808-60-7
carbon black, respirable powder	≥1.0 - ≤5.0	1333-86-4
Solvent naphtha (petroleum), heavy arom.	≤1.2	64742-94-5
bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	<1.0	41556-26-7
2-hydroxyethyl methacrylate	<1.0	868-77-9
naphthalene	<1.0	91-20-3
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	<1.0	82919-37-7
methyl methacrylate	<1.0	80-62-6
2-ethylhexanoic acid	<1.0	149-57-5

SUB codes represent substances without registered CAS Numbers.

### Section 3. Composition/information on ingredients

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

#### Description of necessary first aid measures

- Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation.
- Ingestion** : No known significant effects or critical hazards.

##### Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
irritation  
dryness  
cracking  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

#### Indication of immediate medical attention and special treatment needed, if necessary

## Section 4. First aid measures

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

**Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

**Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
metal oxide/oxides

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.



## Section 6. Accidental release measures

**For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Special precautions** : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

## Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 35°C (95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
n-butyl acetate	<b>ACGIH TLV (United States, 3/2015).</b> STEL: 200 ppm 15 minutes. TWA: 150 ppm 8 hours. <b>OSHA PEL (United States, 2/2013).</b> TWA: 710 mg/m <sup>3</sup> 8 hours. TWA: 150 ppm 8 hours.
crystalline silica, respirable powder (<10 microns)	<b>ACGIH TLV (United States, 3/2015).</b> TWA: 0.025 mg/m <sup>3</sup> 8 hours. Form: Respirable <b>OSHA PEL Z3 (United States, 2/2013).</b> TWA: 10 MG/M3 / (%SiO <sub>2</sub> +2) 8 hours. Form: Respirable TWA: 250 MPPCF / (%SiO <sub>2</sub> +5) 8 hours. Form: Respirable <b>OSHA PEL Z3 (United States).</b> TWA: 30 mg/m <sup>3</sup> Form: Total dust
carbon black, respirable powder	<b>ACGIH TLV (United States, 3/2015).</b> TWA: 3 mg/m <sup>3</sup> 8 hours. Form: Inhalable fraction <b>OSHA PEL (United States, 2/2013).</b> TWA: 3.5 mg/m <sup>3</sup> 8 hours.
Solvent naphtha (petroleum), heavy arom. bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate 2-hydroxyethyl methacrylate	None. None. <b>IPEL (PPG).</b> TWA: 1 ppm STEL: 3 ppm
naphthalene	<b>ACGIH TLV (United States, 3/2015).</b> <b>Absorbed through skin.</b> TWA: 52 mg/m <sup>3</sup> 8 hours. TWA: 10 ppm 8 hours. <b>OSHA PEL (United States, 2/2013).</b> TWA: 50 mg/m <sup>3</sup> 8 hours. TWA: 10 ppm 8 hours.
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate methyl methacrylate	None. <b>ACGIH TLV (United States, 3/2015). Skin sensitizer.</b>

**Section 8. Exposure controls/personal protection**

2-ethylhexanoic acid

STEL: 100 ppm 15 minutes.  
 TWA: 50 ppm 8 hours.  
**OSHA PEL (United States, 2/2013).**  
 TWA: 410 mg/m<sup>3</sup> 8 hours.  
 TWA: 100 ppm 8 hours.  
**ACGIH TLV (United States, 3/2015).**  
 TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Inhalable fraction and vapor

**Key to abbreviations**

A	= Acceptable Maximum Peak	S	= Potential skin absorption
ACGIH	= American Conference of Governmental Industrial Hygienists.	SR	= Respiratory sensitization
C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit	TD	= Total dust
OSHA	= Occupational Safety and Health Administration.	TLV	= Threshold Limit Value
R	= Respirable	TWA	= Time Weighted Average
Z	= OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances		

**Consult local authorities for acceptable exposure limits.**

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Individual protection measures**

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety glasses with side shields.

**Skin protection**

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

## Section 8. Exposure controls/personal protection

- Gloves** : For prolonged or repeated handling, use the following type of gloves:  
May be used: nitrile rubber, Chloroprene, polyvinyl alcohol (PVA), Viton®, butyl rubber
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Characteristic.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : >37.78°C (>100°F)
- Flash point** : Closed cup: 36.11°C (97°F)
- Material supports combustion.** : Yes.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Lower: 1.1%  
Upper: 3.03%
- Evaporation rate** : 0.81 (butyl acetate = 1)
- Vapor pressure** : 1.3 kPa (9.4 mm Hg) [room temperature]
- Vapor density** : Not available.
- Relative density** : 1.26
- Density ( lbs / gal )** : 10.52
- Solubility** : Insoluble in the following materials: cold water.
- Partition coefficient: n-octanol/water** : Not available.
- Viscosity** : Kinematic (40°C (104°F)): >0.21 cm<sup>2</sup>/s (>21 cSt)
- Volatility** : 34% (v/v), 24.623% (w/w)

## Section 9. Physical and chemical properties

% Solid. (w/w) : 75.377

## Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
n-butyl acetate	LC50 Inhalation Vapor	Rat	>21.1 mg/l	4 hours
	LC50 Inhalation Vapor	Rat	2000 ppm	4 hours
	LD50 Dermal	Rabbit	>17600 mg/kg	-
	LD50 Oral	Rat	10.768 g/kg	-
carbon black, respirable powder	LD50 Dermal	Rabbit	>3 g/kg	-
	LD50 Oral	Rat	>15400 mg/kg	-
Solvent naphtha (petroleum), heavy arom.	LD50 Dermal	Rabbit	>1.693 g/kg	-
	LD50 Oral	Rat	3.2 g/kg	-
bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	LD50 Oral	Rat	3.125 g/kg	-
	LD50 Oral	Rat	3.125 g/kg	-
2-hydroxyethyl methacrylate	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	5050 mg/kg	-
naphthalene	LD50 Dermal	Rabbit	>20 g/kg	-
	LD50 Oral	Rat	490 mg/kg	-
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	LD50 Oral	Rat	3.125 g/kg	-
	LD50 Oral	Rat	3.125 g/kg	-
methyl methacrylate	LC50 Inhalation Vapor	Rat	78000 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	7872 mg/kg	-
	LD50 Oral	Rat	1600 mg/kg	-
2-ethylhexanoic acid	LD50 Dermal	Rabbit	1.26 g/kg	-
	LD50 Oral	Rat	1600 mg/kg	-
	LD50 Oral	Rat	1600 mg/kg	-

**Section 11. Toxicological information**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Irritation/Corrosion****Conclusion/Summary**

**Skin** : There are no data available on the mixture itself.

**Eyes** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

**Sensitization****Conclusion/Summary**

**Skin** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

**Mutagenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Carcinogenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Classification**

Product/ingredient name	OSHA	IARC	NTP
crystalline silica, respirable powder (<10 microns)	-	1	Known to be a human carcinogen.
carbon black, respirable powder	-	2B	-
naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.
methyl methacrylate	-	3	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4

NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen

OSHA: +

Not listed/not regulated -

**Reproductive toxicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Teratogenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Specific target organ toxicity (single exposure)**

Name	Category
n-butyl acetate	Category 3
Solvent naphtha (petroleum), heavy arom.	Category 3
methyl methacrylate	Category 3

**Specific target organ toxicity (repeated exposure)**

Name	Category
crystalline silica, respirable powder (<10 microns)	Category 1
naphthalene	Category 2

## Section 11. Toxicological information

**Target organs** : Contains material which causes damage to the following organs: liver, spleen, brain, bone marrow.  
Contains material which may cause damage to the following organs: kidneys, lungs, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

### Aspiration hazard

Name	Result
Solvent naphtha (petroleum), heavy arom.	ASPIRATION HAZARD - Category 1

### Information on the likely routes of exposure

#### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : Defatting to the skin. May cause skin dryness and irritation.  
**Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

**Eye contact** : No specific data.  
**Inhalation** : Adverse symptoms may include the following:  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations  
**Skin contact** : Adverse symptoms may include the following:  
 irritation  
 dryness  
 cracking  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations  
**Ingestion** : Adverse symptoms may include the following:  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations

### Delayed and immediate effects and also chronic effects from short and long term exposure

**Conclusion/Summary** : There are no data available on the mixture itself. This product contains crystalline silica which can cause lung cancer or silicosis. The risk of cancer depends on the duration and level of exposure to dust from sanding surfaces or mist from spray applications. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

**Section 11. Toxicological information**Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : Causes damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : Suspected of damaging the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicityAcute toxicity estimates

Route	ATE value
Oral	88613.1 mg/kg
Dermal	30460.8 mg/kg

**Section 12. Ecological information**Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
n-butyl acetate	1.78	-	low
2-hydroxyethyl methacrylate	0.47	-	low
naphthalene	3.3	85.11	low
methyl methacrylate	1.38	-	low
2-ethylhexanoic acid	2.64	-	low

Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.



## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: **HANDLING AND STORAGE** and Section 8: **EXPOSURE CONTROLS/PERSONAL PROTECTION** for additional handling information and protection of employees. Section 6. **Accidental release measures**

## 14. Transport information

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class (es)	3	3	3
Packing group	III	III	III
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.
Product RQ (lbs)	28941.4	Not applicable.	Not applicable.
RQ substances	(n-butyl acetate)	Not applicable.	Not applicable.

### Additional information

**DOT** : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

**IMDG** : None identified.

**IATA** : None identified.

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Section 15. Regulatory information**United States

**United States inventory (TSCA 8b)** : All components are listed or exempted.

U.S. Federal regulations :

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : Fire hazard  
Immediate (acute) health hazard  
Delayed (chronic) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
n-butyl acetate	Yes.	No.	No.	Yes.	No.
crystalline silica, respirable powder (<10 microns)	No.	No.	No.	No.	Yes.
carbon black, respirable powder	Yes.	No.	No.	No.	Yes.
Solvent naphtha (petroleum), heavy arom.	Yes.	No.	No.	Yes.	No.
bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	No.	No.	No.	Yes.	No.
2-hydroxyethyl methacrylate	No.	No.	No.	Yes.	No.
naphthalene	Yes.	No.	Yes.	Yes.	Yes.
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	No.	No.	No.	Yes.	No.
methyl methacrylate	Yes.	No.	No.	Yes.	No.
2-ethylhexanoic acid	No.	No.	No.	Yes.	Yes.

SARA 313

	<u>Chemical name</u>	<u>CAS number</u>	<u>Concentration</u>
Supplier notification	: naphthalene	91-20-3	0.1 - 1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

**Additional environmental information** is contained on the **Environmental Data Sheet** for this product, which can be obtained from your PPG representative.

California Prop. 65

**WARNING:** This product contains a chemical known to the State of California to cause cancer.

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

Health : 2 \* Flammability : 3 Physical hazards : 0

(\* ) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

**The customer is responsible for determining the PPE code for this material.**

### National Fire Protection Association (U.S.A.)

Health : 2 Flammability : 3 Instability : 0

Date of previous issue : **12/17/2015**

Organization that prepared : EHS

the MSDS

Key to abbreviations

: ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973  
as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations

➤ Indicates information that has changed from previously issued version.

### Disclaimer

*The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.*

Amercoat 450 HS Cure

By

Ameron

# SAFETY DATA SHEET



Date of issue/Date of revision : 28 April 2016

Version 6

## Section 1. Identification

Product name : AMERCOAT 450HS CURE  
Product code : AT45HS-B  
Other means of identification : Not available.  
Product type : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications.  
Use of the substance/  
mixture : Coating.  
Uses advised against : Not applicable.

Manufacturer : PPG Industries, Inc.  
One PPG Place  
Pittsburgh, PA 15272

Emergency telephone number : (412) 434-4515 (U.S.)  
(514) 645-1320 (Canada)  
01-800-00-21-400 (Mexico)

Technical Phone Number : 888-977-4762

## Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3  
ACUTE TOXICITY (inhalation) - Category 4  
RESPIRATORY SENSITIZATION - Category 1  
SKIN SENSITIZATION - Category 1  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

### GHS label elements

Hazard pictograms :



**Section 2. Hazards identification**

Signal word	: Danger
Hazard statements	: Flammable liquid and vapor. Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause respiratory irritation. May cause drowsiness or dizziness.
<b>Precautionary statements</b>	
Prevention	: Wear protective gloves. Wear eye or face protection. Wear respiratory protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Contaminated work clothing must not be allowed out of the workplace.
Response	: <b>IF INHALED:</b> If breathing is difficult, remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or physician. <b>IF ON SKIN (or hair):</b> Take off immediately all contaminated clothing. Rinse skin with water or shower. <b>IF ON SKIN:</b> Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention.
Storage	: Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	: Moisture-sensitive material. Skin contact to isocyanate monomer may lead to allergic lung reaction. Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.
Hazards not otherwise classified	: Prolonged or repeated contact may dry skin and cause irritation.

**Section 3. Composition/information on ingredients**

Substance/mixture	: Mixture
Product name	: AMERCOAT 450HS CURE

Ingredient name	%	CAS number
Hexamethylene diisocyanate, oligomers	≥50 - <55	28182-81-2
n-butyl acetate	≥20 - ≤50	123-86-4
hexamethylene-di-isocyanate	<1.0	822-06-0

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

### Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

#### Description of necessary first aid measures

- Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.
- Ingestion** : Can cause central nervous system (CNS) depression.

##### Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
wheezing and breathing difficulties  
asthma  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking
- Ingestion** : No specific data.

## Section 4. First aid measures

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments : No specific treatment.
- Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

Suitable extinguishing media : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.



## Section 6. Accidental release measures

**For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

**Special provisions** : Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Place in a suitable container. The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0,880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13). Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools.

## Section 7. Handling and storage

<b>Special precautions</b>	<p>Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.</p> <p>Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.</p>
<b>Advice on general occupational hygiene</b>	<p>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</p>
<b>Conditions for safe storage, including any incompatibilities</b>	<p>Do not store above the following temperature: 35°C (95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.</p> <p>Precautions should be taken to minimize exposure to atmospheric humidity or water. CO<sub>2</sub> will be formed, which, in closed containers, could result in pressurization.</p>

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Hexamethylene diisocyanate, oligomers	<b>IPEL (PPG).</b> TWA: 0.5 mg/m <sup>3</sup> STEL: 1 mg/m <sup>3</sup>
n-butyl acetate	<b>ACGIH TLV (United States, 3/2015).</b> STEL: 200 ppm 15 minutes. TWA: 150 ppm 8 hours. <b>OSHA PEL (United States, 2/2013).</b> TWA: 710 mg/m <sup>3</sup> 8 hours. TWA: 150 ppm 8 hours.
hexamethylene-di-isocyanate	<b>ACGIH TLV (United States, 3/2015).</b> TWA: 0.03 mg/m <sup>3</sup> 8 hours. TWA: 0.005 ppm 8 hours. <b>OSHA PEL (United States, 2/2013).</b> <b>Absorbed through skin.</b> TWA: 5 mg/m <sup>3</sup> , (as CN) 8 hours.

#### Key to abbreviations

<p><b>A</b> = Acceptable Maximum Peak</p> <p><b>ACGIH</b> = American Conference of Governmental Industrial Hygienists.</p> <p><b>C</b> = Ceiling Limit</p> <p><b>F</b> = Fume</p> <p><b>IPEL</b> = Internal Permissible Exposure Limit</p> <p><b>OSHA</b> = Occupational Safety and Health Administration.</p>	<p><b>S</b> = Potential skin absorption</p> <p><b>SR</b> = Respiratory sensitization</p> <p><b>SS</b> = Skin sensitization</p> <p><b>STEL</b> = Short term Exposure limit values</p> <p><b>TD</b> = Total dust</p> <p><b>TLV</b> = Threshold Limit Value</p>
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## Section 8. Exposure controls/personal protection

R = Respirable

TWA = Time Weighted Average

Z = OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances

### Consult local authorities for acceptable exposure limits.

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety glasses with side shields.

#### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Gloves** : butyl rubber

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : By spraying: air-fed respirator. By other operations than spraying, in well ventilated areas, air-fed respirators could be replaced by a combination charcoal filter and particulate filter mask. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 8. Exposure controls/personal protection

Restrictions on use : Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.

## Section 9. Physical and chemical properties

### Appearance

Physical state	: Liquid.
Color	: Not available.
Odor	: Characteristic.
Odor threshold	: Not available.
pH	: Not available.
Melting point	: Not available.
Boiling point	: >37.78°C (>100°F)
Flash point	: Closed cup: 33.33°C (92°F)
Material supports combustion.	: Yes.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Lower: 1.4% Upper: 7.58%
Evaporation rate	: 1 (butyl acetate = 1)
Vapor pressure	: 1.5 kPa (11 mm Hg) [room temperature]
Vapor density	: Not available.
Relative density	: 1
Density ( lbs / gal )	: 8.35
Solubility	: Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/water	: Not available.
Viscosity	: Kinematic (40°C (104°F)): >0.21 cm <sup>2</sup> /s (>21 cSt)
Volatility	: 52% (v/v), 45.529% (w/w)
% Solid. (w/w)	: 54.471

## Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : In a fire, hazardous decomposition products may be produced.  
Refer to protective measures listed in sections 7 and 8.

## Section 10. Stability and reactivity

**Incompatible materials** : Keep away from: oxidizing agents, strong alkalis, strong acids, amines, alcohols, water. Uncontrolled exothermic reactions occur with amines and alcohols.

**Hazardous decomposition products** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen, hydrogen cyanide, monomeric isocyanates.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Hexamethylene diisocyanate, oligomers	LC50 Inhalation Dusts and mists	Rat	18500 mg/m <sup>3</sup>	1 hours
	LC50 Inhalation Dusts and mists	Rat	0.39 mg/l	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
n-butyl acetate	LD50 Oral	Rat - Female	>2500 mg/kg	-
	LC50 Inhalation Vapor	Rat	>21.1 mg/l	4 hours
	LC50 Inhalation Vapor	Rat	2000 ppm	4 hours
hexamethylene-di-isocyanate	LD50 Dermal	Rabbit	>17600 mg/kg	-
	LD50 Oral	Rat	10.768 g/kg	-
	LC50 Inhalation Dusts and mists	Rat	124 mg/m <sup>3</sup>	4 hours
hexamethylene-di-isocyanate	LC50 Inhalation Vapor	Rat	151 mg/m <sup>3</sup>	4 hours
	LC50 Inhalation Vapor	Rat	22 ppm	4 hours
	LD50 Dermal	Rabbit	0.57 g/kg	-
	LD50 Oral	Rat	0.71 g/kg	-

**Conclusion/Summary** : There are no data available on the mixture itself.

#### Irritation/Corrosion

##### Conclusion/Summary

**Skin** : There are no data available on the mixture itself.

**Eyes** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

#### Sensitization

##### Conclusion/Summary

**Skin** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

#### Mutagenicity

##### Conclusion/Summary

: There are no data available on the mixture itself.

#### Carcinogenicity

##### Conclusion/Summary

: There are no data available on the mixture itself.

#### Reproductive toxicity

##### Conclusion/Summary

: There are no data available on the mixture itself.

#### Teratogenicity

##### Conclusion/Summary

: There are no data available on the mixture itself.

#### Specific target organ toxicity (single exposure)

**Section 11. Toxicological information**

Name	Category
Hexamethylene diisocyanate, oligomers	Category 3
n-butyl acetate	Category 3
hexamethylene-di-isocyanate	Category 3

**Specific target organ toxicity (repeated exposure)**

Not available.

**Target organs**

: Contains material which causes damage to the following organs: brain.  
 Contains material which may cause damage to the following organs: upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

**Aspiration hazard**

Not available.

**Information on the likely routes of exposure****Potential acute health effects**

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.
- Ingestion** : Can cause central nervous system (CNS) depression.

**Over-exposure signs/symptoms**

- Eye contact** : No specific data.
- Inhalation** : Adverse symptoms may include the following:  
 respiratory tract irritation  
 coughing  
 wheezing and breathing difficulties  
 asthma  
 nausea or vomiting  
 headache  
 drowsiness/fatigue  
 dizziness/vertigo  
 unconsciousness
- Skin contact** : Adverse symptoms may include the following:  
 irritation  
 redness  
 dryness  
 cracking
- Ingestion** : No specific data.

**Delayed and immediate effects and also chronic effects from short and long term exposure**

## Section 11. Toxicological information

**Conclusion/Summary** : There are no data available on the mixture itself. Skin contact to isocyanate monomer may lead to allergic lung reaction. Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Repeated exposure may lead to permanent respiratory disability. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

### Short term exposure

**Potential immediate effects** : There are no data available on the mixture itself.

**Potential delayed effects** : There are no data available on the mixture itself.

### Long term exposure

**Potential immediate effects** : There are no data available on the mixture itself.

**Potential delayed effects** : There are no data available on the mixture itself.

### Potential chronic health effects

**General** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Inhalation (gases)	8293.5 ppm
Inhalation (vapors)	20.27 mg/l
Inhalation (dusts and mists)	2.764 mg/l

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Hexamethylene diisocyanate, oligomers	Acute EC50 >1000 mg/l	Algae - scenedesmus subspicatus	72 hours
	Acute EC50 >100 mg/l	Daphnia - daphnia magna	48 hours
	Acute LC50 >100 mg/l	Fish - Danio rerio (zebra fish)	96 hours

### Persistence and degradability

**Section 12. Ecological information**

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Hexamethylene diisocyanate, oligomers	-	-	Not readily

**Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Hexamethylene diisocyanate, oligomers	-	3.2	low
n-butyl acetate	1.78	-	low
hexamethylene-di-isocyanate	1.08	-	low

**Mobility in soil**

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

**Section 13. Disposal considerations**

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

**14. Transport information**

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class (es)	3	3	3
Packing group	III	III	III



**14. Transport information**

Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.
Product RQ (lbs)	11020.4	Not applicable.	Not applicable.
RQ substances	(n-butyl acetate, hexamethylene-di-isocyanate)	Not applicable.	Not applicable.

**Additional information**

- DOT** : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
- IMDG** : None identified.
- IATA** : None identified.

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Section 15. Regulatory information**United States

**United States inventory (TSCA 8b)** : All components are listed or exempted.

**U.S. Federal regulations** :

SARA 302/304

**SARA 304 RQ** : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

**Classification** : Fire hazard  
Immediate (acute) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Hexamethylene diisocyanate, oligomers	Yes.	No.	No.	Yes.	No.
n-butyl acetate	Yes.	No.	No.	Yes.	No.
hexamethylene-di-isocyanate	No.	No.	No.	Yes.	No.

**Additional environmental information** is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

Product code **AT45HS-B**

Date of issue **28 April 2016**

Version **6**

Product name **AMERCOAT 450HS CURE**

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

Health : 3 \* Flammability : 3 Physical hazards : 0

(\* ) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

**The customer is responsible for determining the PPE code for this material.**

### National Fire Protection Association (U.S.A.)

Health : 3 Flammability : 3 Instability : 0

Date of previous issue : 12/21/2015

Organization that prepared the MSDS : EHS

Key to abbreviations :

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

Indicates information that has changed from previously issued version.

### Disclaimer

*The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.*

Dimetcote 9 Powder

By

Ameron

# SAFETY DATA SHEET



Date of issue/Date of revision : 30 April 2016

Version 4

## Section 1. Identification

Product name : DIMETCOTE 9 POWDER  
Product code : 00281184  
Other means of identification : Not available.  
Product type : Powder.

### Relevant identified uses of the substance or mixture and uses advised against

Product use : Professional applications, Used by spraying.  
Use of the substance/  
mixture : Coating.  
Uses advised against : Not applicable.

Manufacturer : PPG Industries, Inc.  
One PPG Place  
Pittsburgh, PA 15272  
Emergency telephone number : (412) 434-4515 (U.S.)  
(514) 645-1320 (Canada)  
01-800-00-21-400 (Mexico)

Technical Phone Number : 888-977-4762

## Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : COMBUSTIBLE DUSTS

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 100%

### GHS label elements

Signal word : Warning  
Hazard statements : May form combustible dust concentrations in air.

### Precautionary statements

Prevention : Not applicable.  
Response : Not applicable.  
Storage : Not applicable.  
Disposal : Not applicable.

Product name DIMETCOTE 9 POWDER

## Section 2. Hazards identification

Supplemental label elements	Keep container tightly closed. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Sanding and grinding dusts may be harmful if inhaled. Prevent dust accumulation. Emits toxic fumes when heated.
Hazards not otherwise classified	Fine dust clouds may form explosive mixtures with air. Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

## Section 3. Composition/information on ingredients

Substance/mixture	Mixture
Product name	DIMETCOTE 9 POWDER

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

### Description of necessary first aid measures

Eye contact	: Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
Inhalation	: Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
Skin contact	: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
Ingestion	: If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

Eye contact	: Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
Inhalation	: Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
Skin contact	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

Eye contact	: Adverse symptoms may include the following: irritation redness
Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing
Skin contact	: No specific data.

## Section 4. First aid measures

Ingestion : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

Suitable extinguishing media : Use dry chemical powder.

Unsuitable extinguishing media :  Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

Specific hazards arising from the chemical : Fine dust clouds may form explosive mixtures with air. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:  
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

## Section 6. Accidental release measures

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

### Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Avoid release to the environment. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Storage temperature: 5 to 25°C (41 to 77°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Appropriate engineering controls** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety glasses with side shields.

#### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.



## Section 9. Physical and chemical properties

### Appearance

Physical state	: Solid.
Color	: Not available.
Odor	: Aromatic.
Odor threshold	: Not available.
pH	: Not available.
Melting point	: Not available.
Boiling point	: Not available.
Flash point	: Closed cup: Not applicable.
Material supports combustion.	: Yes.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Upper: 0%
Evaporation rate	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 7.14
Density ( lbs / gal )	: 59.59
Bulk Density (g/cm <sup>3</sup> )	: 7.1
Solubility	: Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/water	: Not available.
Viscosity	: Kinematic (40°C (104°F)): Not applicable.
Volatility	: 0% (v/v), 0% (w/w)
% Solid. (w/w)	: 100

## Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.
Incompatible materials	: Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

## Section 10. Stability and reactivity

**Hazardous decomposition products** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

**Conclusion/Summary** : There are no data available on the mixture itself.

#### Irritation/Corrosion

##### Conclusion/Summary

**Skin** : There are no data available on the mixture itself.

**Eyes** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

#### Sensitization

##### Conclusion/Summary

**Skin** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

#### Mutagenicity

**Conclusion/Summary** : There are no data available on the mixture itself.

#### Carcinogenicity

**Conclusion/Summary** : There are no data available on the mixture itself.

#### Reproductive toxicity

**Conclusion/Summary** : There are no data available on the mixture itself.

#### Teratogenicity

**Conclusion/Summary** : There are no data available on the mixture itself.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Target organs

: Contains material which may cause damage to the following organs: upper respiratory tract.

#### Aspiration hazard

Not available.

### Information on the likely routes of exposure

#### Potential acute health effects

**Eye contact** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

**Inhalation** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

**Skin contact** : No known significant effects or critical hazards.

## Section 11. Toxicological information

Ingestion : No known significant effects or critical hazards.

### Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:  
irritation  
redness

Inhalation : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing

Skin contact : No specific data.

Ingestion : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

### Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

### Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

### Potential chronic health effects

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

Not available.

### Persistence and degradability

Not available.

## Section 12. Ecological information

### Bioaccumulative potential

Not available.

### Mobility in soil

Soil/water partition coefficient ( $K_{oc}$ ) : Not available.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

## 14. Transport information

	DOT	IMDG	IATA
UN number	UN3077	UN3077	UN3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc powder - zinc dust (stabilized), zinc oxide)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc powder - zinc dust (stabilized), zinc oxide)
Transport hazard class (es)	9	9	9
Packing group	III	III	III
Environmental hazards	Yes.	Yes.	Yes.
Marine pollutant substances	Not applicable.	(Zinc powder - zinc dust (stabilized), zinc oxide)	Not applicable.
Product RQ (lbs)	1030.9	Not applicable.	Not applicable.
RQ substances	(Zinc powder - zinc dust (stabilized))	Not applicable.	Not applicable.

### Additional information

## 14. Transport information

- DOT : Non-bulk packages of this product are not regulated as hazardous materials in package sizes less than the product reportable quantity, unless transported by inland waterway. The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg.
- IMDG : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. The segregation group has been manually assigned based upon product analysis.
- IATA : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 15. Regulatory information

### United States

United States inventory (TSCA 8b) : All components are listed or exempted.

#### SARA 302/304

SARA 304 RQ : Not applicable.

#### Composition/information on ingredients

No products were found.

#### SARA 311/312

Classification : Fire hazard

#### Composition/information on ingredients

No products were found.

#### SARA 313

	<u>Chemical name</u>	<u>CAS number</u>	<u>Concentration</u>
Supplier notification	: Zinc powder - zinc dust (stabilized)	7440-66-6	60 - 100
	zinc oxide	1314-13-2	1 - 5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

**Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.**

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

Health : 1 Flammability : 0 Physical hazards : 1

(\* ) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

## Section 16. Other information

National Fire Protection Association (U.S.A.)

Health : 1 Flammability : 0 Instability : 1

Date of previous issue : 11/6/2015

Organization that prepared the MSDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations

Indicates information that has changed from previously issued version.

### Disclaimer

*The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.*

Dimetcote 9 Liquid

By

Ameron

# SAFETY DATA SHEET



Date of issue/Date of revision : 22 April 2016

Version 4

## Section 1. Identification

Product name : DIMETCOTE 9 LIQUID  
Product code : 97-965  
Other means of identification : Not available.  
Product type : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications.  
Use of the substance/mixture : Coating. Paints. Painting-related materials.  
Uses advised against : Not applicable.

Manufacturer : PPG Industries, Inc.  
One PPG Place  
Pittsburgh, PA 15272

Emergency telephone number : (412) 434-4515 (U.S.)  
(514) 645-1320 (Canada)  
01-800-00-21-400 (Mexico)

Technical Phone Number : 888-977-4762

## Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture :  FLAMMABLE LIQUIDS - Category 2  
EYE IRRITATION - Category 2A  
CARCINOGENICITY - Category 1A  
TOXIC TO REPRODUCTION (Unborn child) - Category 2  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
 Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 23.6%

### GHS label elements



## Section 2. Hazards identification

### Hazard pictograms



### Signal word

: Danger

### Hazard statements

: Highly flammable liquid and vapor.  
 Causes serious eye irritation.  
 May cause cancer.  
 Suspected of damaging the unborn child.  
 May cause drowsiness or dizziness.  
 May cause damage to organs through prolonged or repeated exposure.

### Precautionary statements

#### Prevention

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Wash hands thoroughly after handling.

#### Response

: Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

#### Storage

: Store locked up. Store in a well-ventilated place. Keep cool.

#### Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

### Supplemental label elements

: Sanding and grinding dusts may be harmful if inhaled. This product contains crystalline silica which can cause lung cancer or silicosis. The risk of cancer depends on the duration and level of exposure to dust from sanding surfaces or mist from spray applications. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

### Hazards not otherwise classified

: Prolonged or repeated contact may dry skin and cause irritation.

## Section 3. Composition/information on ingredients

### Substance/mixture

: Mixture

### Product name

: DIMETCOTE 9 LIQUID

### Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
Isopropyl alcohol	≥20 - ≤50	67-63-0
Silicic acid, ethyl ester	≥20 - ≤50	11099-06-2
1-methoxy-2-propanol	≥5.0 - ≤10	107-98-2
tetraethyl silicate	≥5.0 - ≤10	78-10-4
toluene	≥1.0 - ≤5.0	108-88-3
crystalline silica, respirable powder (<10 microns)	<1.0	14808-60-7

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

#### Description of necessary first aid measures

- Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation.
- Ingestion** : Can cause central nervous system (CNS) depression.

##### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
 pain or irritation  
 watering  
 redness

## Section 4. First aid measures

- Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
irritation  
dryness  
cracking  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

## Section 5. Fire-fighting measures

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
metal oxide/oxides
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Special precautions** : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Do not store above the following temperature: 35°C (95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Isopropyl alcohol	<b>ACGIH TLV (United States, 3/2015).</b> STEL: 400 ppm 15 minutes. TWA: 200 ppm 8 hours. <b>OSHA PEL (United States, 2/2013).</b> TWA: 980 mg/m <sup>3</sup> 8 hours. TWA: 400 ppm 8 hours.
Silicic acid, ethyl ester 1-methoxy-2-propanol	None. <b>ACGIH TLV (United States, 3/2015).</b> STEL: 369 mg/m <sup>3</sup> 15 minutes. STEL: 100 ppm 15 minutes. TWA: 184 mg/m <sup>3</sup> 8 hours. TWA: 50 ppm 8 hours.

## Section 8. Exposure controls/personal protection

tetraethyl silicate

**ACGIH TLV (United States, 3/2015).**TWA: 85 mg/m<sup>3</sup> 8 hours.

TWA: 10 ppm 8 hours.

**OSHA PEL (United States, 2/2013).**TWA: 850 mg/m<sup>3</sup> 8 hours.

TWA: 100 ppm 8 hours.

toluene

**OSHA PEL Z2 (United States, 2/2013).**

AMP: 500 ppm 10 minutes.

CEIL: 300 ppm

TWA: 200 ppm 8 hours.

**ACGIH TLV (United States, 3/2015).**

TWA: 20 ppm 8 hours.

crystalline silica, respirable powder (&lt;10 microns)

**ACGIH TLV (United States, 3/2015).**TWA: 0.025 mg/m<sup>3</sup> 8 hours. Form:

Respirable

**OSHA PEL Z3 (United States, 2/2013).**TWA: 10 MG/M3 / (%SiO<sub>2</sub>+2) 8 hours. Form:

Respirable

TWA: 250 MPPCF / (%SiO<sub>2</sub>+5) 8 hours.

Form: Respirable

**OSHA PEL Z3 (United States).**TWA: 30 mg/m<sup>3</sup> Form: Total dust

### Key to abbreviations

A	= Acceptable Maximum Peak
ACGIH	= American Conference of Governmental Industrial Hygienists.
C	= Ceiling Limit
F	= Fume
IPEL	= Internal Permissible Exposure Limit
OSHA	= Occupational Safety and Health Administration.
R	= Respirable
Z	= OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances

S	= Potential skin absorption
SR	= Respiratory sensitization
SS	= Skin sensitization
STEL	= Short term Exposure limit values
TD	= Total dust
TLV	= Threshold Limit Value
TWA	= Time Weighted Average

### Consult local authorities for acceptable exposure limits.

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

## Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Gloves** :  For prolonged or repeated handling, use the following type of gloves:  
Recommended: butyl rubber, nitrile rubber, natural rubber (latex)
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : >37.78°C (>100°F)
- Flash point** : Closed cup: 15.56°C (60°F)
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Lower: 1.8%

## Section 9. Physical and chemical properties

Evaporation rate	: 2.54 (butyl acetate = 1)
Vapor pressure	: 4 kPa (30.3 mm Hg) [room temperature]
Vapor density	: Not available.
Relative density	: 1.02
Density ( lbs / gal )	: 8.51
Solubility	: Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/water	: Not available.
Viscosity	: Kinematic (40°C (104°F)): >0.21 cm <sup>2</sup> /s (>21 cSt)
Volatility	: 76% (v/v), 60.65% (w/w)
% Solid. (w/w)	: 39.35

## Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.
Incompatible materials	: Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
Hazardous decomposition products	: Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Isopropyl alcohol	LC50 Inhalation Vapor	Rat	72600 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	12800 mg/kg	-
	LD50 Oral	Rat	4.396 g/kg	-
1-methoxy-2-propanol	LD50 Dermal	Rabbit	13 g/kg	-
	LD50 Oral	Rat	5.2 g/kg	-
	LC50 Inhalation Dusts and mists	Rat	10 to 16 mg/l	4 hours
tetraethyl silicate	LD50 Dermal	Rabbit	5.878 g/kg	-
	LD50 Oral	Rat	6270 mg/kg	-
	LC50 Inhalation Vapor	Rat	49 g/m <sup>3</sup>	4 hours
toluene	LC50 Inhalation Vapor	Rat	8000 ppm	4 hours
	LD50 Dermal	Rabbit	8.39 g/kg	-



**Section 11. Toxicological information**

	LD50 Oral	Rat	636 mg/kg	-
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**Conclusion/Summary** : There are no data available on the mixture itself.

**Irritation/Corrosion****Conclusion/Summary**

**Skin** : There are no data available on the mixture itself.

**Eyes** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

**Sensitization****Conclusion/Summary**

**Skin** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

**Mutagenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Carcinogenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Classification**

Product/ingredient name	OSHA	IARC	NTP
Isopropyl alcohol	-	3	-
toluene	-	3	-
crystalline silica, respirable powder (<10 microns)	-	1	Known to be a human carcinogen.

**Carcinogen Classification code:**

IARC: 1, 2A, 2B, 3, 4

NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen

OSHA: +

Not listed/not regulated: -

**Reproductive toxicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Teratogenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Specific target organ toxicity (single exposure)**

Name	Category
Isopropyl alcohol	Category 3
1-methoxy-2-propanol	Category 3
tetraethyl silicate	Category 3
toluene	Category 3

**Specific target organ toxicity (repeated exposure)**

Name	Category
1-methoxy-2-propanol	Category 2
toluene	Category 2
crystalline silica, respirable powder (<10 microns)	Category 1

## Section 11. Toxicological information

**Target organs** : Contains material which causes damage to the following organs: brain.  
Contains material which may cause damage to the following organs: blood, kidneys, lungs, the reproductive system, liver, heart, spleen, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea, stomach.

### Aspiration hazard

Name	Result
toluene	ASPIRATION HAZARD - Category 1

### Information on the likely routes of exposure

#### Potential acute health effects

**Eye contact** : Causes serious eye irritation.

**Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

**Skin contact** : Defatting to the skin. May cause skin dryness and irritation.

**Ingestion** : Can cause central nervous system (CNS) depression.

#### Over-exposure signs/symptoms

**Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

**Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

**Skin contact** : Adverse symptoms may include the following:  
irritation  
dryness  
cracking  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

**Ingestion** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

#### Delayed and immediate effects and also chronic effects from short and long term exposure

**Conclusion/Summary** : There are no data available on the mixture itself. This product contains crystalline silica which can cause lung cancer or silicosis. The risk of cancer depends on the duration and level of exposure to dust from sanding surfaces or mist from spray applications. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue,

## Section 11. Toxicological information

muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

### Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

### Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

### Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : Suspected of damaging the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	5385.1 mg/kg
Inhalation (gases)	44671.2 ppm
Inhalation (vapors)	109.2 mg/l

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
1-methoxy-2-propanol	Acute LC50 23300 mg/l Acute LC50 >4500 mg/l Fresh water	Daphnia Fish	48 hours 96 hours

### Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
toluene	-	-	Readily

### Bioaccumulative potential

Product name DIMETCOTE 9 LIQUID

**Section 12. Ecological information**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Isopropyl alcohol	0.05	-	low
toluene	2.73	8.32	low

**Mobility in soil**

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

**Section 13. Disposal considerations**

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

**14. Transport information**

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class (es)	3	3	3
Packing group	II	II	II
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.
Product RQ (lbs)	25002.6	Not applicable.	Not applicable.
RQ substances	(toluene)	Not applicable.	Not applicable.

Additional information

Product name DIMETCOTE 9 LIQUID

**14. Transport information**

DOT : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

IMDG : None identified.

IATA : None identified.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Section 15. Regulatory information**United States

United States inventory (TSCA 8b) : All components are listed or exempted.

U.S. Federal regulations :

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : Fire hazard  
Immediate (acute) health hazard  
Delayed (chronic) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Isopropyl alcohol	Yes.	No.	No.	Yes.	No.
Silicic acid, ethyl ester	No.	No.	No.	Yes.	No.
1-methoxy-2-propanol	Yes.	No.	No.	Yes.	Yes.
tetraethyl silicate	Yes.	No.	Yes.	Yes.	No.
toluene	Yes.	No.	No.	Yes.	Yes.
crystalline silica, respirable powder (<10 microns)	No.	No.	No.	No.	Yes.

SARA 313

	<u>Chemical name</u>	<u>CAS number</u>	<u>Concentration</u>
Supplier notification :	Isopropyl alcohol	67-63-0	15 - 40
	toluene	108-88-3	1 - 5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

**Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.**

California Prop. 65

Product name **DIMETCOTE 9 LIQUID**

## Section 15. Regulatory information

**WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

## Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 \* Flammability : 3 Physical hazards : 1

(\* ) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

**The customer is responsible for determining the PPE code for this material.**

National Fire Protection Association (U.S.A.)

Health : 2 Flammability : 3 Instability : 1

Date of previous issue : **7/9/2015**

Organization that prepared the MSDS : EHS

Key to abbreviations

: ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

UN = United Nations

Indicates information that has changed from previously issued version.

### Disclaimer

*The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.*

○ Wilkopon Activator (347.67B)

By

Wilko



# Safety Data Sheet

Date Printed: 13-May-2016

Version: A

## 1. IDENTIFICATION

Product Identifier: 347.67B  
Product Name: WILKOPON ACTIVATOR  
Other means of Identification  
SDS#: 347.67B SDS  
Customer and Customer Product Code:  
UN/ID No.: UN 1263

### Recommended use of the product and restrictions on use

**Recommended Use:** Protective Coating, this product is for use with Part A only.

### Details of the supplier of the safety data sheet

#### **Supplier Address**

Wilko Paint, Inc.  
2727 Ohio St.  
P.O. Box 4089  
Wichita, KS 67204

#### **Emergency Telephone Number**

**Company Phone Number:** Toll Free: **1-800-658-3799**  
**Emergency Telephone (24 hr):** Chemtrec: **1-800-424-9300**

## 2. HAZARDS IDENTIFICATION

**Physical State:** Liquid

#### **Classification**

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Germ cell mutagenicity	Category 1B
Flammable Liquids	Category 2

#### **Signal Word**

**Danger**



#### **Hazard Statements**

- Flammable liquid and vapor.
  - Harmful if swallowed.
  - Causes skin irritation.
  - Causes serious eye damage.
  - May cause respiratory irritation.
  - May cause drowsiness or dizziness.
- Other: Harmful if ingested or inhaled. See Sections 8 and 16 for more information.

#### **Precautionary Statements - Prevention**

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.

This product contains an ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected carcinogens. As with any chemicals, asthmatic sensitization can occur from single or repeated exposure. Strict observation of exposure limits is essential (See Section 8).



### Precautionary Statements - Response

- If exposed or concerned: Get medical advice/attention.
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

### Precautionary Statements - Storage

Store locked up and out of reach of children, in a well-ventilated place. Keep cool.

### Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant.

### Other Hazards

Harmful to aquatic life with long lasting effects.

## 3. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Chemical Name	CAS No	Weight - %
MICROCRYSTALLINE SILICA (QUARTZ)	14808-60-7	20-25
CRISTOBALITE	14464-46-1	05-10
Benzyl Alcohol	100-51-6	05-10
N-BUTYL ACETATE	123-86-4	05-10
XYLOL / XYLENE	1330-20-7	05-10
PROPYLENE GLYCOL METHYL ETHER	107-98-2	03-04
2,4,6-TRI(DIMETHYLAMINOMETHYL)PHENOL	90-72-2	< 03
Tertiary Butyl Acetate	540-88-5	< 02
ACETONE	67-64-1	< 02
N-BUTYL ALCOHOL	71-36-3	< 02
ETHYLBENZENE	100-41-4	< 02
TRIETHYLENETETRAMINE	112-24-3	< .5

\*\* If chemical name is "proprietary" or CAS No. is blank, and weight % is zero or listed as a range, then the specific chemical identity and/or percentage of composition is withheld as a trade secret and any exposure limits is listed in Section 8.

## 4. FIRST AID MEASURES

### First Aid Measures

- **General Advice** If exposed or concerned: Get medical advice/attention.
- **Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- **Skin Contact** Take off contaminated clothing. Wash skin with soap and water. Wash contaminated clothing before reuse.
- **Inhalation** Remove to fresh air. If not breathing, give artificial respiration.
- **Ingestion** Do not induce vomiting. Call a physician.

**Most important symptoms and effects** May cause skin and eye irritation. May cause gastrointestinal irritation, nausea, diarrhea, and vomiting. Loss of coordination.

**Indication of any immediate medical attention and special treatment needed** Loss of consciousness, fainting. Blurry or loss of vision.

**Notes to Physician** Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

### FLAMMABILITY CLASSIFICATION

FLAMMABLE LIQUID - NFPA CLASS 3 - Flammable liquid flash point below 100 °F.

### SUITABLE EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam.

### SPECIAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

**HAZARDOUS COMBUSTION PRODUCTS:** Carbon oxides

### SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus must be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

## 6. ACCIDENTAL RELEASE MEASURES

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Use personal protective equipment as required.
- Prevent further leakage or spillage if safe to do so.
- Remove all sources of ignition. Ventilate the area.
- Remove with inert absorbent and place into an appropriate container for disposal.

## 7. HANDLING AND STORAGE

### HANDLING

- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Use personal protection recommended in Section 8. Avoid breathing vapors or mists.
- During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.
- Consult NFPA Code. Use approved Bonding and Grounding procedures. Use spark-proof tools and explosion-proof equipment.

### STORAGE

- Keep container closed when not in use. Store in a dry, cool and well-ventilated place.
- Transfer only to approved containers with complete and appropriate labeling.
- Do not take internally.
- Keep out of the reach of children.
- Incompatible with strong oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### PRECAUTIONS TO BE TAKEN IN USING THIS PRODUCT

**NO person should use this product, or be in the area here it is being used, if they have chronic (long-term) lung or breathing problems or if they ever had a reaction to any one ingredients listed in the table below.**

- Use only with adequate ventilation.
- Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.
- Wash hands after using.
- This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 3) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 3, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m<sup>3</sup> (total dust), 3 mg/m<sup>3</sup> (respirable fraction), OSHA PEL 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction).

### EXPOSURE LIMITS

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
N-BUTYL ACETATE 123-86-4	TWA: 150 ppm TWA: 710 mg/m <sup>3</sup> STEL: 200 ppm STEL: 950 mg/m <sup>3</sup>	TWA: 150 ppm TWA: 710 mg/m <sup>3</sup> STEL: 200 ppm	IDLH: 1700 ppm TWA: 150 ppm TWA: 710 mg/m <sup>3</sup>
PROPYLENE GLYCOL METHYL ETHER 107-98-2	TWA: 100 ppm STEL: 150 ppm	TWA: 100 ppm STEL: 150 ppm	
2,4,6-TRI(DIMETHYLAMINOMETHYL)PHENOL 90-72-2		TWA: 100 ppm	
N-BUTYL ALCOHOL 71-36-3	TWA: 20 ppm	TWA: 100 ppm TWA: 300 mg/m <sup>3</sup>	TWA: 50 ppm TWA: 150 mg/m <sup>3</sup>
Tertiary Butyl Acetate 540-88-5	STEL: 200 ppm		
ACETONE 67-64-1	TWA: 750 ppm STEL: 1000 ppm	TWA: 750 ppm STEL: 1000 ppm	
XYLOL / XYLENE 1330-20-7	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 150 ppm STEL: 655 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 150 ppm STEL: 655 mg/m <sup>3</sup>	
ETHYLBENZENE 100-41-4	TWA: 100 ppm STEL: 125 ppm	TWA: 100 ppm STEL: 125 ppm	
MICROCRYSTALLINE SILICA (QUARTZ) 14808-60-7 (Carcinogen)* Mfg. Recommended TWA is 10 mg/m <sup>3</sup>	TWA: 0.025 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> total dust	
CRISTOBALITE 14464-46-1 (Carcinogen)*	TWA: 0.025 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> total dust	
Benzyl Alcohol 100-51-6 Mfg. Recommended TWA is 10 ppm Mfg. Recommended TWA is 44.200 mg/m <sup>3</sup>			
TRIETHYLENETETRAMINE 112-24-3 Mfg. Recommended TWA is 1 ppm			

\*This ingredient(s) is designated by either IARC, NTP, ACGIH or OSHA as probable or suspected carcinogen(s).

**Appropriate engineering controls** Apply technical measures to comply with the occupational exposure limits.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	Wear goggles or safety glasses with unperforated side shields.
<b>Skin and Body Protection</b>	Use solvent resistant gloves and apron or suitable protective clothing, additional use of barrier cream is recommended.
<b>Respiratory Protection</b>	<p>Apply in a spray booth with ventilation that is adequate to keep the TWA TLV below the stated limits as stated in the Section 8 table, otherwise use a positive pressure air supplied respirator (TL19C NIOSH/MSHA approved). If unavailable, a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 8 may be used as long as the TWA TLV are below stated limits. Follow respirator manufacturer's directions for use. Wear the respirator for the duration of spraying and until all vapors and mists are gone.</p> <p><b>ALL PERSONELL IN THE AREA WHERE THIS PRODUCT IS BEING USED MUST BE EQUIPPED WITH THE SAME RESPIRATOR PROTECTION RECOMMENDED FOR THE PAINTERS.</b></p> <p>Wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive, when sanding or abrading dried film.</p>

**General Hygiene Considerations:** Handle in accordance with good industrial hygiene and safety practice.

**OTHER PRECAUTIONS**

If this product is to be mixed with other components before use, read and follow warning labels on all components. Intentional misuse by deliberately concentrating and inhaling the vapors can be harmful or fatal.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid		
<b>Appearance</b>	Paint	<b>Odor</b>	Not determined
<b>Color</b>	See description	<b>Odor Threshold</b>	Not determined
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH</b>	Not determined		
<b>Melting Point/Freezing Point</b>	Not determined		
<b>Boiling Point/Boiling Range</b>	32-278 °C / 90-532 °F		
<b>Flash Point</b>	24 °C / 76 °F		
<b>Evaporation Rate</b>	Slower Than Ether		
<b>Flammability (Solid, Gas)</b>	N/A - Liquid		
<b>Upper Explosive Limit (UEL)</b>	Not determined		
<b>Lower Explosive Limit (LEL)</b>	0.90 %		
<b>Flammability Limit Vapor</b>	Not determined		
<b>Vapor Pressure</b>	Not determined		
<b>Vapor Density</b>	Heavier than air		
<b>Specific Gravity</b>	1.28		
<b>Water Solubility</b>	Not determined		
<b>Solubility in other solvents</b>	Not determined		
<b>Partition Coefficient Auto-</b>	Not determined		
<b>Ignition Temperature</b>	Not determined		
<b>Decomposition</b>	Not determined		
<b>Temperature Kinematic</b>	Not determined		
<b>Viscosity Dynamic</b>	Not determined		
<b>Viscosity</b>	Not determined		
<b>VOC</b>	2.05 #/gal or 246 gr/li	EPA Method 24	
<b>VOC Actual</b>	1.93 #/gal or 231 gr/li	Total VOC per gallon, as supplied	
<b>Wt/Gal</b>	10.63 #/gal		

## 10. STABILITY AND REACTIVITY

**Reactivity** Not reactive under normal conditions.  
**Chemical Stability** Stable under recommended storage conditions.  
**Possibility of Hazardous Reactions** None under normal processing.  
**Conditions to Avoid** Avoid all possible sources of ignition.  
**Incompatible Materials** Strong oxidizing agents.  
**Hazardous Decomposition Products** Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

There is no specific data available for this product.

## 12. ECOLOGICAL INFORMATION

There is no specific data available for this product.

**CAUTION:** Can be toxic to living organisms. Keep out of soil and water stream.  
**ECOTOXICITY EFFECTS:** Harmful to aquatic life with long lasting effects.

**MOBILITY:** Not available

**BIOACCUMULATIVE POTENTIAL:** Not available

**PERSISTENCE / DEGRADABILITY:** Not available

## 13. DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers. Disposal should be in accordance with applicable regional, national and local laws and regulations. Only EPA approved facility must handle incineration if this method of disposal is chosen.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations (Refer to above).

## 14. TRANSPORT INFORMATION

**NOTE** Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	

**IATA**

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	

**IMDG**

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	

## 15. REGULATORY INFORMATION

There is no specific data available for this product.

## 16. OTHER INFORMATION

NFPA	<b>Health Hazards</b> 2*	<b>Flammability</b> 3	<b>Instability</b> 1	<b>Special Hazards</b> Not Determined
HMIS	<b>Health Hazards</b> *2	<b>Flammability</b> 3	<b>Physical Hazards</b> 1	<b>Personal Protection</b> J,X**

Chronic Hazard Star Legend  
Personal Protection

\*2=Chronic Health Hazard.

\*\*J=Goggles, impermeable gloves, apron and vapor respirator required.

X=See your supervisor for guidance.

Issue Date:

Revision Date: 13-May-2016

Version: A

Revision Note: SDS format

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Wilkothane Enamel Hardener  
(050.23)

By

Wilko

# Safety Data Sheet

Date Printed: 21-Oct-2015

Version: A

## 1. IDENTIFICATION

Product Identifier: 050.23  
Product Name: ENAMEL HARDENER  
Other means of Identification  
SDS#: 050.23 SDS  
Customer and Customer Product Code:  
UN/ID No.: UN 1263

### Recommended use of the product and restrictions on use

**Recommended Use:** Protective Coating, this product is for use with Part A only.

### Details of the supplier of the safety data sheet

#### **Supplier Address**

Wilko Paint, Inc.  
2727 Ohio St.  
P.O. Box 4089  
Wichita, KS 67204

#### **Emergency Telephone Number**

**Company Phone Number:** Toll Free: **1-800-658-3799**  
**Emergency Telephone (24 hr):** Chemtrec: **1-800-424-9300**

## 2. HAZARDS IDENTIFICATION

**Physical State:** Liquid

### Classification

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Germ cell mutagenicity	Category 1B
Flammable Liquids	Category 2

### Signal Word

**Danger**



### Hazard Statements

- Flammable liquid and vapor.
- Harmful if swallowed.
- Causes skin irritation.
- Causes serious eye damage.
- May cause respiratory irritation.
- May cause drowsiness or dizziness.

Other: Harmful if ingested or inhaled. See Sections 8 and 16 for more information.

### Precautionary Statements - Prevention

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected carcinogens. As with any chemicals, asthmatic sensitization can occur from single or repeated exposure. Strict observation of exposure limits is essential (See Section 8).







**Appropriate engineering controls** Apply technical measures to comply with the occupational exposure limits.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	Wear goggles or safety glasses with unperforated side shields.
<b>Skin and Body Protection</b>	Use solvent resistant gloves and apron or suitable protective clothing, additional use of barrier cream is recommended.
<b>Respiratory Protection</b>	<p>Apply in a spray booth with ventilation that is adequate to keep the TWA TLV below the stated limits as stated in the Section 8 table, otherwise use a positive pressure air supplied respirator (TL19C NIOSH/MSHA approved). If unavailable, a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 8 may be used as long as the TWA TLV are below stated limits. Follow respirator manufacturer's directions for use. Wear the respirator for the duration of spraying and until all vapors and mists are gone.</p> <p><b>ALL PERSONELL IN THE AREA WHERE THIS PRODUCT IS BEING USED MUST BE EQUIPPED WITH THE SAME RESPIRATOR PROTECTION RECOMMENDED FOR THE PAINTERS.</b></p> <p>Wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive, when sanding or abrading dried film.</p>

**General Hygiene Considerations:** Handle in accordance with good industrial hygiene and safety practice.

**OTHER PRECAUTIONS**

If this product is to be mixed with other components before use, read and follow warning labels on all components. Intentional misuse by deliberately concentrating and inhaling the vapors can be harmful or fatal.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid		
<b>Appearance</b>	Paint	<b>Odor</b>	Not determined
<b>Color</b>	See description	<b>Odor Threshold</b>	Not determined
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH</b>	Not determined		
<b>Melting Point/Freezing Point</b>	Not determined		
<b>Boiling Point/Boiling Range</b>	110-140 °C / 230-284 °F		
<b>Flash Point</b>	24 °C / 76 °F		
<b>Evaporation Rate</b>	Slower Than Ether		
<b>Flammability (Solid, Gas)</b>	N/A - Liquid		
<b>Upper Explosive Limit (UEL)</b>	Not determined		
<b>Lower Explosive Limit (LEL)</b>	1.00 %		
<b>Flammability Limit Vapor</b>	Not determined		
<b>Vapor Pressure</b>	Not determined		
<b>Vapor Density</b>	Heavier than air		
<b>Specific Gravity</b>	0.96		
<b>Water Solubility</b>	Not determined		
<b>Solubility in other solvents</b>	Not determined		
<b>Partition Coefficient Auto-</b>	Not determined		
<b>Ignition Temperature</b>	Not determined		
<b>Decomposition</b>	Not determined		
<b>Temperature Kinematic</b>	Not determined		
<b>Viscosity Dynamic</b>	Not determined		
<b>Viscosity</b>	Not determined		
<b>VOC</b>	5.19 #/gal or 622 gr/li		EPA Method 24
<b>VOC Actual</b>	5.19 #/gal or 622 gr/li		Total VOC per gallon, as supplied
<b>Wt/Gal</b>	7.99 #/gal		

## 10. STABILITY AND REACTIVITY

**Reactivity** Not reactive under normal conditions.  
**Chemical Stability** Stable under recommended storage conditions.  
**Possibility of Hazardous Reactions** None under normal processing.  
**Conditions to Avoid** Avoid all possible sources of ignition.  
**Incompatible Materials** Strong oxidizing agents.  
**Hazardous Decomposition Products** Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

There is no specific data available for this product.

## 12. ECOLOGICAL INFORMATION

There is no specific data available for this product.

**CAUTION:** Can be toxic to living organisms. Keep out of soil and water stream.  
**ECOTOXICITY EFFECTS:** Harmful to aquatic life with long lasting effects.  
**MOBILITY:** Not available  
**BIOACCUMULATIVE POTENTIAL:** Not available  
**PERSISTANCE / DEGRADABILITY:** Not available

## 13. DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers. Disposal should be in accordance with applicable regional, national and local laws and regulations. Only EPA approved facility must handle incineration if this method of disposal is chosen.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations (Refer to above).

## 14. TRANSPORT INFORMATION

**NOTE** Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

**IATA**

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

**IMDG**

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

## 15. REGULATORY INFORMATION

There is no specific data available for this product.

## 16. OTHER INFORMATION

NFPA	<b>Health Hazards</b> 2*	<b>Flammability</b> 3	<b>Instability</b> 1	<b>Special Hazards</b> Not Determined
HMIS	<b>Health Hazards</b> *2	<b>Flammability</b> 3	<b>Physical Hazards</b> 1	<b>Personal Protection</b> J,X**

Chronic Hazard Star Legend  
Personal Protection

\*2=Chronic Health Hazard.

\*\*J=Goggles, impermeable gloves, apron and vapor respirator required.

X=See your supervisor for guidance.

Issue Date:

Revision Date: 9-Mar-2011

Version: A

Revision Note: SDS format

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

○ Wilkothane HS Primer (497.50)

By

Wilko

○

○

Paint

cont 060

# Safety Data Sheet

Date Printed: 13-May-2016

Version: A

## 1. IDENTIFICATION

Product Identifier: 497.50  
Product Name: PRIMER HS LF CI RED  
Other means of Identification  
SDS#: 497.50 SDS  
Customer and Customer Product Code:  
UN/ID No.: UN 1263

### Recommended use of the product and restrictions on use

**Recommended Use:** Protective Coating.

### Details of the supplier of the safety data sheet

#### **Supplier Address**

Wilko Paint, Inc.  
2727 Ohio St.  
P.O. Box 4089  
Wichita, KS 67204

#### Emergency Telephone Number

**Company Phone Number:** Toll Free: **1-800-658-3799**  
**Emergency Telephone (24 hr):** Chemtrec: **1-800-424-9300**

## 2. HAZARDS IDENTIFICATION

**Physical State:** Liquid

### Classification

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Germ cell mutagenicity	Category 1B
Flammable Liquids	Category 2

### Signal Word

**Danger**



### Hazard Statements

- Flammable liquid and vapor.
  - Harmful if swallowed.
  - Causes skin Irritation.
  - Causes serious eye damage.
  - May cause respiratory irritation.
  - May cause drowsiness or dizziness.
- Other: Harmful if ingested or inhaled. See Sections 8 and 16 for more information.

### Precautionary Statements - Prevention

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.

This product contains an ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected carcinogens. As with any chemicals, asthmatic sensitization can occur from single or repeated exposure. Strict observation of exposure limits is essential (See Section 8).





## 7. HANDLING AND STORAGE

### HANDLING

- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Use personal protection recommended in Section 8. Avoid breathing vapors or mists.
- During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.
- Consult NFPA Code. Use approved Bonding and Grounding procedures. Use spark-proof tools and explosion-proof equipment.

### STORAGE

- Keep container closed when not in use. Store in a dry, cool and well-ventilated place.
- Transfer only to approved containers with complete and appropriate labeling.
- Do not take internally.
- Keep out of the reach of children.
- Incompatible with strong oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### PRECAUTIONS TO BE TAKEN IN USING THIS PRODUCT

**NO person should use this product, or be in the area here it is being used, if they have chronic (long-term) lung or breathing problems or if they ever had a reaction to any one ingredients listed in the table below.**

- Use only with adequate ventilation.
- Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.
- Wash hands after using.
- This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 3) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 3, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m<sup>3</sup> (total dust), 3 mg/m<sup>3</sup> (respirable fraction), OSHA PEL 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction).

### EXPOSURE LIMITS

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
MINERAL SPIRITS 64741-41-9	TWA: 100 ppm STEL: 200 ppm	TWA: 500 ppm TWA: 2900 mg/m <sup>3</sup> TVA: 100 ppm TVA: 525 mg/m <sup>3</sup>	TWA: 350 mg/m <sup>3</sup>
TOLUOL / TOLUENE 108-88-3	TWA: 100 ppm STEL: 150 ppm	TWA: 200 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm	
METHYL ETHYL KETONE 78-93-3	TWA: 200 ppm STEL: 300 ppm	TWA: 200 ppm TWA: 590 mg/m <sup>3</sup> STEL: 300 ppm	
Aliphatic Petroleum Distillates 64742-88-7		TWA: 100 ppm TWA: 350 mg/m <sup>3</sup>	
MICROCRYSTALLINE SILICA (QUARTZ) 14808-60-7 (Carcinogen)* Mfg. Recommended TWA is 10 mg/m <sup>3</sup>	TWA: 0.025 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> total dust	

\*This ingredient(s) is designated by either IARC, NTP, ACGIH or OSHA as probable or suspected carcinogen(s).

**Appropriate engineering controls** Apply technical measures to comply with the occupational exposure limits.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	Wear goggles or safety glasses with unperforated side shields.
<b>Skin and Body Protection</b>	Use solvent resistant gloves and apron or suitable protective clothing, additional use of barrier cream is recommended.
<b>Respiratory Protection</b>	<p>Apply in a spray booth with ventilation that is adequate to keep the TWA TLV below the stated limits as stated in the Section 8 table, otherwise use a positive pressure air supplied respirator (TL19C NIOSH/MSHA approved). If unavailable, a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 8 may be used as long as the TWA TLV are below stated limits. Follow respirator manufacturer's directions for use. Wear the respirator for the duration of spraying and until all vapors and mists are gone.</p> <p><b>ALL PERSONELL IN THE AREA WHERE THIS PRODUCT IS BEING USED MUST BE EQUIPPED WITH THE SAME RESPIRATOR PROTECTION RECOMMENDED FOR THE PAINTERS.</b></p> <p>Wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive, when sanding or abrading dried film.</p>

**General Hygiene Considerations:** Handle in accordance with good industrial hygiene and safety practice.

**OTHER PRECAUTIONS**

If this product is to be mixed with other components before use, read and follow warning labels on all components. Intentional misuse by deliberately concentrating and inhaling the vapors can be harmful or fatal.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid	<b>Odor</b>	Not determined
<b>Appearance</b>	Paint	<b>Odor Threshold</b>	Not determined
<b>Color</b>	See description		
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH</b>	Not determined		
<b>Melting Point/Freezing Point</b>	Not determined		
<b>Boiling Point/Boiling Range</b>	55-245 °C / 131-473 °F		
<b>Flash Point</b>	39 °C / 103 °F		
<b>Evaporation Rate</b>	Slower Than Ether		
<b>Flammability (Solid, Gas)</b>	N/A - Liquid		
<b>Upper Explosive Limit (UEL)</b>	Not determined		
<b>Lower Explosive Limit (LEL)</b>	0.70 %		
<b>Flammability Limit Vapor</b>	Not determined		
<b>Vapor Pressure</b>	Not determined		
<b>Vapor Density</b>	Heavier than air		
<b>Specific Gravity</b>	1.34		
<b>Water Solubility</b>	Not determined		
<b>Solubility in other solvents</b>	Not determined		
<b>Partition Coefficient Auto-</b>	Not determined		
<b>Ignition Temperature</b>	Not determined		
<b>Decomposition</b>	Not determined		
<b>Temperature Kinematic</b>	Not determined		
<b>Viscosity Dynamic</b>	Not determined		
<b>Viscosity</b>	Not determined		
<b>VOC</b>	3.41 #/gal or 409 gr/li		EPA Method 24
<b>VOC Actual</b>	3.37 #/gal or 404 gr/li		Total VOC per gallon, as supplied
<b>Wt/Gal</b>	11.18 #/Gal		

## 10. STABILITY AND REACTIVITY

**Reactivity** Not reactive under normal conditions.

**Chemical Stability** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions** None under normal processing.

**Conditions to Avoid** Avoid all possible sources of ignition.

**Incompatible Materials** Strong oxidizing agents.

**Hazardous Decomposition Products** Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

There is no specific data available for this product.

## 12. ECOLOGICAL INFORMATION

There is no specific data available for this product.

**CAUTION:** Can be toxic to living organisms. Keep out of soil and water stream.

**ECOTOXICITY EFFECTS:** Harmful to aquatic life with long lasting effects.

**MOBILITY:** Not available

**BIOACCUMULATIVE POTENTIAL:** Not available

**PERSISTANCE / DEGRADABILITY:** Not available

## 13. DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers. Disposal should be in accordance with applicable regional, national and local laws and regulations. Only EPA approved facility must handle incineration if this method of disposal is chosen.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations (Refer to above).

## 14. TRANSPORT INFORMATION

### NOTE

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

### IATA

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

### IMDG

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

## 15. REGULATORY INFORMATION

There is no specific data available for this product.

## 16. OTHER INFORMATION

NFPA	<b>Health Hazards</b> 2*	<b>Flammability</b> 3	<b>Instability</b> 1	<b>Special Hazards</b> Not Determined
HMIS	<b>Health Hazards</b> *2	<b>Flammability</b> 2	<b>Physical Hazards</b> 1	<b>Personal Protection</b> J,X**

Chronic Hazard Star Legend  
Personal Protection

\*2=Chronic Health Hazard.

\*\*J=Goggles, impermeable gloves, apron and vapor respirator required.

X=See your supervisor for guidance.

Issue Date: 20-May-1983  
Revision Date: 13-May-2016  
Version: A  
Revision Note: SDS format

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Wilkothane HS Aluminum  
(729.935)

By

Wilko

# Safety Data Sheet

Date Printed: 13-May-2016

Version: A

## 1. IDENTIFICATION

Product Identifier: 729.935  
Product Name: WILKOTHANE HS LEAFING ALUMINUM  
Other means of Identification  
SDS#: 729.935 SDS  
Customer and Customer Product Code:  
UN/ID No.: UN 1263

### Recommended use of the product and restrictions on use

**Recommended Use:** Protective Coating.

### Details of the supplier of the safety data sheet

#### **Supplier Address**

Wilko Paint, Inc.  
2727 Ohio St.  
P.O. Box 4089  
Wichita, KS 67204

### Emergency Telephone Number

**Company Phone Number:** Toll Free: **1-800-658-3799**  
**Emergency Telephone (24 hr):** Chemtrec: **1-800-424-9300**

## 2. HAZARDS IDENTIFICATION

**Physical State:** Liquid

### Classification

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Germ cell mutagenicity	Category 1B
Flammable Liquids	Category 2

### Signal Word

**Danger**



### Hazard Statements

- Flammable liquid and vapor.
  - Harmful if swallowed.
  - Causes skin irritation.
  - Causes serious eye damage.
  - May cause respiratory irritation.
  - May cause drowsiness or dizziness.
- Other: Harmful if ingested or inhaled. See Sections 8 and 16 for more information.

### Precautionary Statements - Prevention

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected carcinogens. As with any chemicals, asthmatic sensitization can occur from single or repeated exposure. Strict observation of exposure limits is essential (See Section 8).



## 7. HANDLING AND STORAGE

### HANDLING

- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Use personal protection recommended in Section 8. Avoid breathing vapors or mists.
- During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.
- Consult NFPA Code. Use approved Bonding and Grounding procedures. Use spark-proof tools and explosion-proof equipment.

### STORAGE

- Keep container closed when not in use. Store in a dry, cool and well-ventilated place.
- Transfer only to approved containers with complete and appropriate labeling.
- Do not take internally.
- Keep out of the reach of children.
- Incompatible with strong oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### PRECAUTIONS TO BE TAKEN IN USING THIS PRODUCT

**NO person should use this product, or be in the area here it is being used, if they have chronic (long-term) lung or breathing problems or if they ever had a reaction to any one ingredients listed in the table below.**

- Use only with adequate ventilation.
- Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.
- Wash hands after using.
- This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 3) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 3, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m<sup>3</sup> (total dust), 3 mg/m<sup>3</sup> (respirable fraction), OSHA PEL 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction).

### EXPOSURE LIMITS

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
METHYL ETHYL KETONE 78-93-3	TWA: 200 ppm STEL: 300 ppm	TWA: 200 ppm TWA: 590 mg/m <sup>3</sup> STEL: 300 ppm	
METHOXY PROPANOL ACETATE 108-65-6		TWA: 100 ppm	
XYLOL / XYLENE 1330-20-7	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 150 ppm STEL: 655 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 150 ppm STEL: 655 mg/m <sup>3</sup>	
ETHYLBENZENE 100-41-4	TWA: 100 ppm STEL: 125 ppm	TWA: 100 ppm STEL: 125 ppm	
Aluminum 7429-90-5		TWA: 10 mg/m <sup>3</sup> total dust	
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm TWA: 133 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
DISTILLATES, HYDROTRATED LIGHT 64742-47-8	TWA: 200 mg/m <sup>3</sup>	TWA: 500 ppm TWA: 2000 mg/m <sup>3</sup>	
NAPHTHA, HYDROTRATED HEAVY 64742-48-9		TWA: 500 ppm TWA: 2000 mg/m <sup>3</sup>	



**Appropriate engineering controls** Apply technical measures to comply with the occupational exposure limits.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	Wear goggles or safety glasses with unperforated side shields.
<b>Skin and Body Protection</b>	Use solvent resistant gloves and apron or suitable protective clothing, additional use of barrier cream is recommended.
<b>Respiratory Protection</b>	<p>Apply in a spray booth with ventilation that is adequate to keep the TWA TLV below the stated limits as stated in the Section 8 table, otherwise use a positive pressure air supplied respirator (TL19C NIOSH/MSHA approved). If unavailable, a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 8 may be used as long as the TWA TLV are below stated limits. Follow respirator manufacturer's directions for use. Wear the respirator for the duration of spraying and until all vapors and mists are gone.</p> <p><b>ALL PERSONELL IN THE AREA WHERE THIS PRODUCT IS BEING USED MUST BE EQUIPPED WITH THE SAME RESPIRATOR PROTECTION RECOMMENDED FOR THE PAINTERS.</b></p> <p>Wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive, when sanding or abrading dried film.</p>

**General Hygiene Considerations:** Handle in accordance with good industrial hygiene and safety practice.

**OTHER PRECAUTIONS**

If this product is to be mixed with other components before use, read and follow warning labels on all components. Intentional misuse by deliberately concentrating and inhaling the vapors can be harmful or fatal.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid		
<b>Appearance</b>	Paint	<b>Odor</b>	Not determined
<b>Color</b>	See description	<b>Odor Threshold</b>	Not determined
<b>Property</b>	<b>Values</b>		<b>Remarks • Method</b>
<b>pH</b>	Not determined		
<b>Melting Point/Freezing Point</b>	Not determined		
<b>Boiling Point/Boiling Range</b>	79-245 °C / 174-473 °F		
<b>Flash Point</b>	28 °C / 82 °F		
<b>Evaporation Rate</b>	Slower Than Ether		
<b>Flammability (Solid, Gas)</b>	N/A - Liquid		
<b>Upper Explosive Limit (UEL)</b>	Not determined		
<b>Lower Explosive Limit (LEL)</b>	1.00 %		
<b>Flammability Limit Vapor</b>	Not determined		
<b>Vapor Pressure</b>	Not determined		
<b>Vapor Density</b>	Heavier than air		
<b>Specific Gravity</b>	1.14		
<b>Water Solubility</b>	Not determined		
<b>Solubility in other solvents</b>	Not determined		
<b>Partition Coefficient Auto-</b>	Not determined		
<b>Ignition Temperature</b>	Not determined		
<b>Decomposition</b>	Not determined		
<b>Temperature Kinematic</b>	Not determined		
<b>Viscosity Dynamic</b>	Not determined		
<b>Viscosity</b>	Not determined		
<b>VOC</b>	2.81 #/gal or 337 gr/li		EPA Method 24
<b>VOC Actual</b>	2.81 #/gal or 337 gr/li		Total VOC per gallon, as supplied
<b>Wt/Gal</b>	9.53 #/gal		

## 10. STABILITY AND REACTIVITY

**Reactivity** Not reactive under normal conditions.

**Chemical Stability** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions** None under normal processing.

**Conditions to Avoid** Avoid all possible sources of ignition.

**Incompatible Materials** Strong oxidizing agents.

**Hazardous Decomposition Products** Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

There is no specific data available for this product.

## 12. ECOLOGICAL INFORMATION

There is no specific data available for this product.

**CAUTION:** Can be toxic to living organisms. Keep out of soil and water stream.

**ECOTOXICITY EFFECTS:** Harmful to aquatic life with long lasting effects.

**MOBILITY:** Not available

**BIOACCUMULATIVE POTENTIAL:** Not available

**PERSISTENCE / DEGRADABILITY:** Not available

## 13. DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers. Disposal should be in accordance with applicable regional, national and local laws and regulations. Only EPA approved facility must handle incineration if this method of disposal is chosen.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations (Refer to above).

## 14. TRANSPORT INFORMATION

**NOTE** Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

### IATA

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

### IMDG

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

## 15. REGULATORY INFORMATION

There is no specific data available for this product.

## 16. OTHER INFORMATION

NFPA	<b>Health Hazards</b> 2*	<b>Flammability</b> 3	<b>Instability</b> 1	<b>Special Hazards</b> Not Determined
HMIS	<b>Health Hazards</b> *2	<b>Flammability</b> 3	<b>Physical Hazards</b> 1	<b>Personal Protection</b> J,X**

Chronic Hazard Star Legend  
Personal Protection

\*2=Chronic Health Hazard.

\*\*J=Goggles, impermeable gloves, apron and vapor respirator required.

X=See your supervisor for guidance.

Issue Date: 7-Jan-1998  
Revision Date: 13-May-2016  
Version: A  
Revision Note: SDS format

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

○ Wilkothane HS White (721.52)

By

Wilko

○

○

# Safety Data Sheet

Date Printed: 13-May-2016

Version: A

## 1. IDENTIFICATION

Product Identifier: 721.52  
Product Name: WILKOTHANE HS WHITE  
Other means of Identification  
SDS#: 721.52 SDS  
Customer and Customer Product Code:  
UN/ID No.: UN 1263

### Recommended use of the product and restrictions on use

**Recommended Use:** Protective Coating.

### Details of the supplier of the safety data sheet

#### **Supplier Address**

Wilko Paint, Inc.  
2727 Ohio St.  
P.O. Box 4089  
Wichita, KS 67204

#### **Emergency Telephone Number**

**Company Phone Number:** Toll Free: **1-800-658-3799**  
**Emergency Telephone (24 hr):** Chemtrec: **1-800-424-9300**

## 2. HAZARDS IDENTIFICATION

**Physical State:** Liquid

#### **Classification**

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Germ cell mutagenicity	Category 1B
Flammable Liquids	Category 2

#### **Signal Word**

**Danger**



#### **Hazard Statements**

- Flammable liquid and vapor.
  - Harmful if swallowed.
  - Causes skin irritation.
  - Causes serious eye damage.
  - May cause respiratory irritation.
  - May cause drowsiness or dizziness.
- Other: Harmful if ingested or inhaled. See Sections 8 and 16 for more information.

#### **Precautionary Statements - Prevention**

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.

This product contains an ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected carcinogens. As with any chemicals, asthmatic sensitization can occur from single or repeated exposure. Strict observation of exposure limits is essential (See Section 8).



## 7. HANDLING AND STORAGE

### HANDLING

- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Use personal protection recommended in Section 8. Avoid breathing vapors or mists.
- During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.
- Consult NFPA Code. Use approved Bonding and Grounding procedures. Use spark-proof tools and explosion-proof equipment.

### STORAGE

- Keep container closed when not in use. Store in a dry, cool and well-ventilated place.
- Transfer only to approved containers with complete and appropriate labeling.
- Do not take internally.
- Keep out of the reach of children.
- Incompatible with strong oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### PRECAUTIONS TO BE TAKEN IN USING THIS PRODUCT

**NO person should use this product, or be in the area here it is being used, if they have chronic (long-term) lung or breathing problems or if they ever had a reaction to any one ingredients listed in the table below.**

- Use only with adequate ventilation.
- Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.
- Wash hands after using.
- This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 3) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 3, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m<sup>3</sup> (total dust), 3 mg/m<sup>3</sup> (respirable fraction), OSHA PEL 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction).

### EXPOSURE LIMITS

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
N-BUTYL ACETATE 123-86-4	TWA: 150 ppm TWA: 710 mg/m <sup>3</sup> STEL: 200 ppm STEL: 950 mg/m <sup>3</sup>	TWA: 150 ppm TWA: 710 mg/m <sup>3</sup> STEL: 200 ppm	IDLH: 1700 ppm TWA: 150 ppm TWA: 710 mg/m <sup>3</sup>
METHOXY PROPANOL ACETATE 108-65-6		TWA: 100 ppm	
PENTYL PROPIONATE 624-54-4		TWA: 100 ppm	
METHYL AMYL KETONE 110-43-0	TWA: 50 ppm TWA: 133 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 465 mg/m <sup>3</sup>
XYLOL / XYLENE 1330-20-7	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 150 ppm STEL: 655 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 150 ppm STEL: 655 mg/m <sup>3</sup>	
TITANIUM DIOXIDE (IARC 2B CLASIFICACION) 13463-67-7 (Carcinogen)*	TWA: 10 mg/m <sup>3</sup> total dust	TWA: 15 mg/m <sup>3</sup> total dust	
1-Nitropropane 108-03-2	TWA: 25 ppm	TWA: 25 ppm TWA: 90 mg/m <sup>3</sup>	

\*This ingredient(s) is designated by either IARC, NTP, ACGIH or OSHA as probable or suspected carcinogen(s).

**Appropriate engineering controls** Apply technical measures to comply with the occupational exposure limits.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	Wear goggles or safety glasses with unperforated side shields.
<b>Skin and Body Protection</b>	Use solvent resistant gloves and apron or suitable protective clothing, additional use of barrier cream is recommended.
<b>Respiratory Protection</b>	<p>Apply in a spray booth with ventilation that is adequate to keep the TWA TLV below the stated limits as stated in the Section 8 table, otherwise use a positive pressure air supplied respirator (TL19C NIOSH/MSHA approved). If unavailable, a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 8 may be used as long as the TWA TLV are below stated limits. Follow respirator manufacturer's directions for use. Wear the respirator for the duration of spraying and until all vapors and mists are gone.</p> <p><b>ALL PERSONELL IN THE AREA WHERE THIS PRODUCT IS BEING USED MUST BE EQUIPPED WITH THE SAME RESPIRATOR PROTECTION RECOMMENDED FOR THE PAINTERS.</b></p> <p>Wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive, when sanding or abrading dried film.</p>

**General Hygiene Considerations:** Handle in accordance with good industrial hygiene and safety practice.

**OTHER PRECAUTIONS**

If this product is to be mixed with other components before use, read and follow warning labels on all components. Intentional misuse by deliberately concentrating and inhaling the vapors can be harmful or fatal.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid		
<b>Appearance</b>	Paint	<b>Odor</b>	Not determined
<b>Color</b>	See description	<b>Odor Threshold</b>	Not determined
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH</b>	Not determined		
<b>Melting Point/Freezing Point</b>	Not determined		
<b>Boiling Point/Boiling Range</b>	46-196 °C / 114-385 °F		
<b>Flash Point</b>	39 °C / 102 °F		
<b>Evaporation Rate</b>	Slower Than Ether		
<b>Flammability (Solid, Gas)</b>	N/A - Liquid		
<b>Upper Explosive Limit (UEL)</b>	Not determined		
<b>Lower Explosive Limit (LEL)</b>	0.70 %		
<b>Flammability Limit Vapor</b>	Not determined		
<b>Vapor Pressure</b>	Not determined		
<b>Vapor Density</b>	Heavier than air		
<b>Specific Gravity</b>	1.42		
<b>Water Solubility</b>	Not determined		
<b>Solubility in other solvents</b>	Not determined		
<b>Partition Coefficient Auto-</b>	Not determined		
<b>Ignition Temperature</b>	Not determined		
<b>Decomposition</b>	Not determined		
<b>Temperature Kinematic</b>	Not determined		
<b>Viscosity Dynamic</b>	Not determined		
<b>Viscosity</b>	Not determined		
<b>VOC</b>	2.80 #/gal or 336 gr/li	EPA Method 24	
<b>VOC Actual</b>	2.80 #/gal or 336 gr/li	Total VOC per gallon, as supplied	
<b>Wt/Gal</b>	11.80 #/gal		



## 10. STABILITY AND REACTIVITY

**Reactivity** Not reactive under normal conditions.  
**Chemical Stability** Stable under recommended storage conditions.  
**Possibility of Hazardous Reactions** None under normal processing.  
**Conditions to Avoid** Avoid all possible sources of ignition.  
**Incompatible Materials** Strong oxidizing agents.  
**Hazardous Decomposition Products** Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

There is no specific data available for this product.

## 12. ECOLOGICAL INFORMATION

There is no specific data available for this product.

**CAUTION:** Can be toxic to living organisms. Keep out of soil and water stream.  
**ECOTOXICITY EFFECTS:** Harmful to aquatic life with long lasting effects.  
**MOBILITY:** Not available  
**BIOACCUMULATIVE POTENTIAL:** Not available  
**PERSISTENCE / DEGRADABILITY:** Not available

## 13. DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers. Disposal should be in accordance with applicable regional, national and local laws and regulations. Only EPA approved facility must handle incineration if this method of disposal is chosen.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations (Refer to above).

## 14. TRANSPORT INFORMATION

**NOTE** Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

<b>IATA</b>	
UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

<b>IMDG</b>	
UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

## 15. REGULATORY INFORMATION

There is no specific data available for this product.

## 16. OTHER INFORMATION

NFPA	<b>Health Hazards</b> 2*	<b>Flammability</b> 3	<b>Instability</b> 1	<b>Special Hazards</b> Not Determined
HMIS	<b>Health Hazards</b> *2	<b>Flammability</b> 2	<b>Physical Hazards</b> 1	<b>Personal Protection</b> J,X**

Chronic Hazard Star Legend  
Personal Protection

\*2=Chronic Health Hazard.

\*\*J=Goggles, impermeable gloves, apron and vapor respirator required.

X=See your supervisor for guidance.

Issue Date: 5-Jun-1990  
Revision Date: 29-Apr-2016  
Version: A  
Revision Note: SDS format

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Wilkothane HS Clear (720.29)

By

Wilko

# Safety Data Sheet

Date Printed: 13-May-2016

Version: A

## 1. IDENTIFICATION

Product Identifier: 720.29  
Product Name: WILKOTHANE HS CLEAR MR  
Other means of Identification  
SDS#: 720.29 SDS  
Customer and Customer Product Code:  
UN/ID No.: UN 1263

### Recommended use of the product and restrictions on use

**Recommended Use:** Protective Coating.

### Details of the supplier of the safety data sheet

#### **Supplier Address**

Wilko Paint, Inc.  
2727 Ohio St.  
P.O. Box 4089  
Wichita, KS 67204

#### **Emergency Telephone Number**

**Company Phone Number:** Toll Free: **1-800-658-3799**  
**Emergency Telephone (24 hr):** Chemtrec: **1-800-424-9300**

## 2. HAZARDS IDENTIFICATION

**Physical State:** Liquid

### Classification

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Germ cell mutagenicity	Category 1B
Flammable Liquids	Category 2

### Signal Word

**Danger**



### Hazard Statements

- Flammable liquid and vapor.
  - Harmful if swallowed.
  - Causes skin irritation.
  - Causes serious eye damage
  - May cause respiratory irritation.
  - May cause drowsiness or dizziness.
- Other: Harmful if ingested or inhaled. See Sections 8 and 16 for more information.

### Precautionary Statements - Prevention

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected carcinogens. As with any chemicals, asthmatic sensitization can occur from single or repeated exposure. Strict observation of exposure limits is essential (See Section 8).





**Appropriate engineering controls** Apply technical measures to comply with the occupational exposure limits.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	Wear goggles or safety glasses with unperforated side shields.
<b>Skin and Body Protection</b>	Use solvent resistant gloves and apron or suitable protective clothing, additional use of barrier cream is recommended.
<b>Respiratory Protection</b>	<p>Apply in a spray booth with ventilation that is adequate to keep the TWA TLV below the stated limits as stated in the Section 8 table, otherwise use a positive pressure air supplied respirator (TL19C NIOSH/MSHA approved). If unavailable, a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 8 may be used as long as the TWA TLV are below stated limits. Follow respirator manufacturer's directions for use. Wear the respirator for the duration of spraying and until all vapors and mists are gone.</p> <p><b>ALL PERSONELL IN THE AREA WHERE THIS PRODUCT IS BEING USED MUST BE EQUIPPED WITH THE SAME RESPIRATOR PROTECTION RECOMMENDED FOR THE PAINTERS.</b></p> <p>Wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive, when sanding or abrading dried film.</p>

**General Hygiene Considerations:** Handle in accordance with good industrial hygiene and safety practice.

**OTHER PRECAUTIONS**

If this product is to be mixed with other components before use, read and follow warning labels on all components. Intentional misuse by deliberately concentrating and inhaling the vapors can be harmful or fatal.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid	<b>Odor</b>	Not determined
<b>Appearance</b>	Paint	<b>Odor Threshold</b>	Not determined
<b>Color</b>	See description		
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH</b>	Not determined		
<b>Melting Point/Freezing Point</b>	Not determined		
<b>Boiling Point/Boiling Range</b>	56-169 °C / 132-337 °F		
<b>Flash Point</b>	24 °C / 76 °F		
<b>Evaporation Rate</b>	Slower Than Ether		
<b>Flammability (Solid, Gas)</b>	N/A - Liquid		
<b>Upper Explosive Limit (UEL)</b>	Not determined		
<b>Lower Explosive Limit (LEL)</b>	1.00 %		
<b>Flammability Limit Vapor</b>	Not determined		
<b>Vapor Pressure</b>	Not determined		
<b>Vapor Density</b>	Heavier than air		
<b>Specific Gravity</b>	0.99		
<b>Water Solubility</b>	Not determined		
<b>Solubility in other solvents</b>	Not determined		
<b>Partition Coefficient Auto-</b>	Not determined		
<b>Ignition Temperature</b>	Not determined		
<b>Decomposition</b>	Not determined		
<b>Temperature Kinematic</b>	Not determined		
<b>Viscosity Dynamic</b>	Not determined		
<b>Viscosity</b>	Not determined		
<b>VOC</b>	3.77 #/gal or 452 gr/li		EPA Method 24
<b>VOC Actual</b>	3.65 #/gal or 437 gr/li		Total VOC per gallon, as supplied
<b>Wt/Gal</b>	8.26 #/gal		

## 10. STABILITY AND REACTIVITY

**Reactivity** Not reactive under normal conditions.

**Chemical Stability** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions** None under normal processing.

**Conditions to Avoid** Avoid all possible sources of ignition.

**Incompatible Materials** Strong oxidizing agents.

**Hazardous Decomposition Products** Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

There is no specific data available for this product.

## 12. ECOLOGICAL INFORMATION

There is no specific data available for this product.

**CAUTION:** Can be toxic to living organisms. Keep out of soil and water stream.

**ECOTOXICITY EFFECTS:** Harmful to aquatic life with long lasting effects.

**MOBILITY:** Not available

**BIOACCUMULATIVE POTENTIAL:** Not available

**PERSISTENCE / DEGRADABILITY:** Not available

## 13. DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers. Disposal should be in accordance with applicable regional, national and local laws and regulations. Only EPA approved facility must handle incineration if this method of disposal is chosen.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations (Refer to above).

## 14. TRANSPORT INFORMATION

**NOTE** Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

**IATA**

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

**IMDG**

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III



## 15. REGULATORY INFORMATION

There is no specific data available for this product.

## 16. OTHER INFORMATION

NFPA	<b>Health Hazards</b> 2*	<b>Flammability</b> 3	<b>Instability</b> 1	<b>Special Hazards</b> Not Determined
HMIS	<b>Health Hazards</b> *2	<b>Flammability</b> 3	<b>Physical Hazards</b> 1	<b>Personal Protection</b> J,X**

Chronic Hazard Star Legend  
Personal Protection

\*2=Chronic Health Hazard.

\*\*J=Goggles, impermeable gloves, apron and vapor respirator required.

X=See your supervisor for guidance.

Issue Date: 18-Jun-1993  
Revision Date: 13-May-2016  
Version: A  
Revision Note: SDS format

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Silalkyd HS White (821.04)

By

Wilko

# Safety Data Sheet

Date Printed: 13-May-2016

Version: A

## 1. IDENTIFICATION

Product Identifier: 821.04  
Product Name: SILALKYD HS WHITE  
Other means of Identification  
SDS#: 821.04 SDS  
Customer and Customer Product Code:  
UN/ID No.: UN 1263

### Recommended use of the product and restrictions on use

**Recommended Use:** Protective Coating.

### Details of the supplier of the safety data sheet

#### **Supplier Address**

Wilko Paint, Inc.  
2727 Ohio St.  
P.O. Box 4089  
Wichita, KS 67204

#### **Emergency Telephone Number**

**Company Phone Number:** Toll Free: **1-800-658-3799**  
**Emergency Telephone (24 hr):** Chemtrec: **1-800-424-9300**

## 2. HAZARDS IDENTIFICATION

**Physical State:** Liquid

### Classification

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Germ cell mutagenicity	Category 1B
Flammable Liquids	Category 2

### Signal Word

**Danger**



### Hazard Statements

- Flammable liquid and vapor.
  - Harmful if swallowed.
  - Causes skin irritation.
  - Causes serious eye damage.
  - May cause respiratory irritation.
  - May cause drowsiness or dizziness.
- Other: Harmful if ingested or inhaled. See Sections 8 and 16 for more information.

### Precautionary Statements - Prevention

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.

This product contains an ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected carcinogens. As with any chemicals, asthmatic sensitization can occur from single or repeated exposure. Strict observation of exposure limits is essential (See Section 8).

**Precautionary Statements - Response**

- If exposed or concerned: Get medical advice/attention.
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**Precautionary Statements - Storage**

Store locked up and out of reach of children, in a well-ventilated place. Keep cool.

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant.

**Other Hazards**

Harmful to aquatic life with long lasting effects.

**3. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS**

Chemical Name	CAS No	Weight - %
TITANIUM DIOXIDE (IARC 2B CLASIFICACION)	13463-67-7	20-25
DISTILLATES, HYDROTRATED LIGHT	64742-47-8	15-20
MINERAL SPIRITS	64741-41-9	05-10
Aliphatic Petroleum Distillates	64742-88-7	03-04
XYLOL / XYLENE	1330-20-7	< 01

\*\* If chemical name is "proprietary" or CAS No. is blank, and weight % is zero or listed as a range, then the specific chemical identity and/or percentage of composition is withheld as a trade secret and any exposure limits is listed in Section 8.

**4. FIRST AID MEASURES**

**First Aid Measures**

- **General Advice** If exposed or concerned: Get medical advice/attention.
- **Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- **Skin Contact** Take off contaminated clothing. Wash skin with soap and water. Wash contaminated clothing before reuse.
- **Inhalation** Remove to fresh air. If not breathing, give artificial respiration.
- **Ingestion** Do not induce vomiting. Call a physician.

**Most important symptoms and effects** May cause skin and eye irritation. May cause gastrointestinal irritation, nausea, diarrhea, and vomiting. Loss of coordination.

**Indication of any immediate medical attention and special treatment needed** Loss of consciousness, fainting. Blurry or loss of vision.

**Notes to Physician** Treat symptomatically.

**5. FIRE FIGHTING MEASURES**

**FLAMMABILITY CLASSIFICATION**

FLAMMABLE LIQUID - NFPA CLASS 2 - Combustible liquid flash point of 100° to 200° F.

**SUITABLE EXTINGUISHING MEDIA**

Carbon Dioxide, Dry Chemical, Foam.

**SPECIAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat. Application to hot surfaces requires special precautions. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

**HAZARDOUS COMBUSTION PRODUCTS:** Carbon oxides

**SPECIAL FIRE FIGHTING PROCEDURES**

Full protective equipment including self-contained breathing apparatus must be used. Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

**6. ACCIDENTAL RELEASE MEASURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

- Use personal protective equipment as required.
- Prevent further leakage or spillage if safe to do so.
- Remove all sources of ignition. Ventilate the area.
- Remove with inert absorbent and place into an appropriate container for disposal.



**Appropriate engineering controls** Apply technical measures to comply with the occupational exposure limits.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	Wear goggles or safety glasses with unperforated side shields.
<b>Skin and Body Protection</b>	Use solvent resistant gloves and apron or suitable protective clothing, additional use of barrier cream is recommended.
<b>Respiratory Protection</b>	<p>Apply in a spray booth with ventilation that is adequate to keep the TWA TLV below the stated limits as stated in the Section 8 table, otherwise use a positive pressure air supplied respirator (TL19C NIOSH/MSHA approved). If unavailable, a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 8 may be used as long as the TWA TLV are below stated limits. Follow respirator manufacturer's directions for use. Wear the respirator for the duration of spraying and until all vapors and mists are gone.</p> <p><b>ALL PERSONELL IN THE AREA WHERE THIS PRODUCT IS BEING USED MUST BE EQUIPPED WITH THE SAME RESPIRATOR PROTECTION RECOMMENDED FOR THE PAINTERS.</b></p> <p>Wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive, when sanding or abrading dried film.</p>

**General Hygiene Considerations:** Handle in accordance with good industrial hygiene and safety practice.

**OTHER PRECAUTIONS**

If this product is to be mixed with other components before use, read and follow warning labels on all components. Intentional misuse by deliberately concentrating and inhaling the vapors can be harmful or fatal.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid		
<b>Appearance</b>	Paint	<b>Odor</b>	Not determined
<b>Color</b>	See description	<b>Odor Threshold</b>	Not determined
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH</b>	Not determined		
<b>Melting Point/Freezing Point</b>	Not determined		
<b>Boiling Point/Boiling Range</b>	82-245 °C / 180-473 °F		
<b>Flash Point</b>	39 °C / 103 °F		
<b>Evaporation Rate</b>	Slower Than Ether		
<b>Flammability (Solid, Gas)</b>	N/A - Liquid		
<b>Upper Explosive Limit (UEL)</b>	Not determined		
<b>Lower Explosive Limit (LEL)</b>	0.70 %		
<b>Flammability Limit Vapor</b>	Not determined		
<b>Vapor Pressure</b>	Not determined		
<b>Vapor Density</b>	Heavier than air		
<b>Specific Gravity</b>	1.20		
<b>Water Solubility</b>	Not determined		
<b>Solubility in other solvents</b>	Not determined		
<b>Partition Coefficient Auto-</b>	Not determined		
<b>Ignition Temperature</b>	Not determined		
<b>Decomposition</b>	Not determined		
<b>Temperature Kinematic</b>	Not determined		
<b>Viscosity Dynamic</b>	Not determined		
<b>Viscosity</b>	Not determined		
<b>VOC</b>	3.20 #/gal or 383 gr/li	EPA Method 24	
<b>VOC Actual</b>	3.20 #/gal or 383 gr/li	Total VOC per gallon, as supplied	
<b>Wt/Gal</b>	9.96 #/gal		

## 10. STABILITY AND REACTIVITY

**Reactivity** Not reactive under normal conditions.  
**Chemical Stability** Stable under recommended storage conditions.  
**Possibility of Hazardous Reactions** None under normal processing.  
**Conditions to Avoid** Avoid all possible sources of ignition.  
**Incompatible Materials** Strong oxidizing agents.  
**Hazardous Decomposition Products** Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

There is no specific data available for this product.

## 12. ECOLOGICAL INFORMATION

There is no specific data available for this product.

**CAUTION:** Can be toxic to living organisms. Keep out of soil and water stream.  
**ECOTOXICITY EFFECTS:** Harmful to aquatic life with long lasting effects.  
**MOBILITY:** Not available  
**BIOACCUMULATIVE POTENTIAL:** Not available  
**PERSISTANCE / DEGRADABILITY:** Not available

## 13. DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers. Disposal should be in accordance with applicable regional, national and local laws and regulations. Only EPA approved facility must handle incineration if this method of disposal is chosen.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations (Refer to above).

## 14. TRANSPORT INFORMATION

**NOTE** Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

### IATA

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

### IMDG

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

## 15. REGULATORY INFORMATION

There is no specific data available for this product.

## 16. OTHER INFORMATION

NFPA	<b>Health Hazards</b> 2*	<b>Flammability</b> 3	<b>Instability</b> 1	<b>Special Hazards</b> Not Determined
HMIS	<b>Health Hazards</b> *2	<b>Flammability</b> 2	<b>Physical Hazards</b> 1	<b>Personal Protection</b> J,X**

Chronic Hazard Star Legend  
Personal Protection

\*2=Chronic Health Hazard.

\*\*J=Goggles, impermeable gloves, apron and vapor respirator required.

X=See your supervisor for guidance.

Issue Date: 30-Jun-1983  
Revision Date: 13-May-2016  
Version: A  
Revision Note: SDS format

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet



Silicone Aluminum (829.01)

By

Wilko

# Safety Data Sheet

Date Printed: 13-May-2016

Version: A

## 1. IDENTIFICATION

Product Identifier: 829.01  
Product Name: MODIFIED SILICONE ALUMINUM  
Other means of Identification  
SDS#: 829.01 SDS  
Customer and Customer Product Code:  
UN/ID No.: UN 1263

### Recommended use of the product and restrictions on use

**Recommended Use:** Protective Coating.

### Details of the supplier of the safety data sheet

#### **Supplier Address**

Wilko Paint, Inc.  
2727 Ohio St.  
P.O. Box 4089  
Wichita, KS 67204

#### **Emergency Telephone Number**

**Company Phone Number:** Toll Free: **1-800-658-3799**  
**Emergency Telephone (24 hr):** Chemtrec: **1-800-424-9300**

## 2. HAZARDS IDENTIFICATION

**Physical State:** Liquid

### **Classification**

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Germ cell mutagenicity	Category 1B
Flammable Liquids	Category 2

### **Signal Word**

**Danger**



### **Hazard Statements**

- Flammable liquid and vapor.
  - Harmful if swallowed.
  - Causes skin irritation.
  - Causes serious eye damage.
  - May cause respiratory irritation.
  - May cause drowsiness or dizziness.
- Other: Harmful if ingested or inhaled. See Sections 8 and 16 for more information.

### **Precautionary Statements - Prevention**

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected carcinogens. As with any chemicals, asthmatic sensitization can occur from single or repeated exposure. Strict observation of exposure limits is essential (See Section 8).



## 7. HANDLING AND STORAGE

### HANDLING

- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Use personal protection recommended in Section 8. Avoid breathing vapors or mists.
- During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.
- Consult NFPA Code. Use approved Bonding and Grounding procedures. Use spark-proof tools and explosion-proof equipment.

### STORAGE

- Keep container closed when not in use. Store in a dry, cool and well-ventilated place.
- Transfer only to approved containers with complete and appropriate labeling.
- Do not take internally.
- Keep out of the reach of children.
- Incompatible with strong oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### PRECAUTIONS TO BE TAKEN IN USING THIS PRODUCT

**NO person should use this product, or be in the area here it is being used, if they have chronic (long-term) lung or breathing problems or if they ever had a reaction to any one ingredients listed in the table below.**

- Use only with adequate ventilation.
- Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.
- Wash hands after using.
- This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 3) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 3, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m<sup>3</sup> (total dust), 3 mg/m<sup>3</sup> (respirable fraction), OSHA PEL 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction).

### EXPOSURE LIMITS

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Aluminum 7429-90-5		TWA: 10 mg/m <sup>3</sup> total dust	
XYLOL / XYLENE 1330-20-7	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 150 ppm STEL: 655 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 150 ppm STEL: 655 mg/m <sup>3</sup>	
ETHYLBENZENE 100-41-4	TWA: 100 ppm STEL: 125 ppm	TWA: 100 ppm STEL: 125 ppm	
TOLUOL / TOLUENE 108-88-3	TWA: 100 ppm STEL: 150 ppm	TWA: 200 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm	
DISTILLATES, HYDROTRATED LIGHT 64742-47-8	TWA: 200 mg/m <sup>3</sup>	TWA: 500 ppm TWA: 2000 mg/m <sup>3</sup>	
NAPTHA, HYDROTRATED HEAVY 64742-48-9		TWA: 500 ppm TWA: 2000 mg/m <sup>3</sup>	

**Appropriate engineering controls** Apply technical measures to comply with the occupational exposure limits.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	Wear goggles or safety glasses with unperforated side shields.
<b>Skin and Body Protection</b>	Use solvent resistant gloves and apron or suitable protective clothing, additional use of barrier cream is recommended.
<b>Respiratory Protection</b>	<p>Apply in a spray booth with ventilation that is adequate to keep the TWA TLV below the stated limits as stated in the Section 8 table, otherwise use a positive pressure air supplied respirator (TL19C NIOSH/MSHA approved). If unavailable, a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 8 may be used as long as the TWA TLV are below stated limits. Follow respirator manufacturer's directions for use. Wear the respirator for the duration of spraying and until all vapors and mists are gone.</p> <p><b>ALL PERSONELL IN THE AREA WHERE THIS PRODUCT IS BEING USED MUST BE EQUIPPED WITH THE SAME RESPIRATOR PROTECTION RECOMMENDED FOR THE PAINTERS.</b></p> <p>Wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive, when sanding or abrading dried film.</p>

**General Hygiene Considerations:** Handle in accordance with good industrial hygiene and safety practice.

**OTHER PRECAUTIONS**

If this product is to be mixed with other components before use, read and follow warning labels on all components. Intentional misuse by deliberately concentrating and inhaling the vapors can be harmful or fatal.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid	<b>Odor</b>	Not determined
<b>Appearance</b>	Paint	<b>Odor Threshold</b>	Not determined
<b>Color</b>	See description		
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH</b>	Not determined		
<b>Melting Point/Freezing Point</b>	Not determined		
<b>Boiling Point/Boiling Range</b>	110-245 °C / 230-473 °F		
<b>Flash Point</b>	28 °C / 82 °F		
<b>Evaporation Rate</b>	Slower Than Ether		
<b>Flammability (Solid, Gas)</b>	N/A - Liquid		
<b>Upper Explosive Limit (UEL)</b>	Not determined		
<b>Lower Explosive Limit (LEL)</b>	1.00 %		
<b>Flammability Limit Vapor</b>	Not determined		
<b>Vapor Pressure</b>	Not determined		
<b>Vapor Density</b>	Heavier than air		
<b>Specific Gravity</b>	1.02		
<b>Water Solubility</b>	Not determined		
<b>Solubility in other solvents</b>	Not determined		
<b>Partition Coefficient Auto-Ignition Temperature</b>	Not determined		
<b>Decomposition</b>	Not determined		
<b>Temperature Kinematic</b>	Not determined		
<b>Viscosity Dynamic</b>	Not determined		
<b>Viscosity</b>	Not determined		
<b>VOC</b>	5.05 #/gal or 605 gr/li		EPA Method 24
<b>VOC Actual</b>	5.05 #/gal or 605 gr/li		Total VOC per gallon, as supplied
<b>Wt/Gal</b>	8.49 #/gal		

## 10. STABILITY AND REACTIVITY

**Reactivity** Not reactive under normal conditions.

**Chemical Stability** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions** None under normal processing.

**Conditions to Avoid** Avoid all possible sources of ignition.

**Incompatible Materials** Strong oxidizing agents.

**Hazardous Decomposition Products** Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

There is no specific data available for this product.

## 12. ECOLOGICAL INFORMATION

There is no specific data available for this product.

**CAUTION:** Can be toxic to living organisms. Keep out of soil and water stream.

**ECOTOXICITY EFFECTS:** Harmful to aquatic life with long lasting effects.

**MOBILITY:** Not available

**BIOACCUMULATIVE POTENTIAL:** Not available

**PERSISTANCE / DEGRADABILITY:** Not available

## 13. DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers. Disposal should be in accordance with applicable regional, national and local laws and regulations. Only EPA approved facility must handle incineration if this method of disposal is chosen.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations (Refer to above).

## 14. TRANSPORT INFORMATION

**NOTE** Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

### IATA

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

### IMDG

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

## 15. REGULATORY INFORMATION

There is no specific data available for this product.

## 16. OTHER INFORMATION

NFPA	<b>Health Hazards</b> 2*	<b>Flammability</b> 3	<b>Instability</b> 1	<b>Special Hazards</b> Not Determined
HMIS	<b>Health Hazards</b> *2	<b>Flammability</b> 3	<b>Physical Hazards</b> 1	<b>Personal Protection</b> J,X**

Chronic Hazard Star Legend  
Personal Protection

\*2=Chronic Health Hazard.

\*\*J=Goggles, impermeable gloves, apron and vapor respirator required.

X=See your supervisor for guidance.

Issue Date:

Revision Date: 13-May-2016

Version: A

Revision Note: SDS format

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

No. 2 Synthetic Thinner

By

Wilko



# Safety Data Sheet

Date Printed: 21-Oct-2015

Version: A

## 1. IDENTIFICATION

Product Identifier: NO.2  
Product Name: SYNTHETIC THINNER  
Other means of Identification  
SDS#: NO.2 SDS  
Customer and Customer Product Code:  
UN/ID No.: UN 1263

### Recommended use of the product and restrictions on use

**Recommended Use:** Protective Coating.

### Details of the supplier of the safety data sheet

#### **Supplier Address**

Wilko Paint, Inc.  
2727 Ohio St.  
P.O. Box 4089  
Wichita, KS 67204

#### **Emergency Telephone Number**

**Company Phone Number:** Toll Free: **1-800-658-3799**  
**Emergency Telephone (24 hr):** Chemtrec: **1-800-424-9300**

## 2. HAZARDS IDENTIFICATION

**Physical State:** Liquid

### **Classification**

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Germ cell mutagenicity	Category 1B
Flammable Liquids	Category 2

### **Signal Word**

**Danger**



### **Hazard Statements**

- Flammable liquid and vapor.
- Harmful if swallowed.
- Causes skin irritation.
- Causes serious eye damage.
- May cause respiratory irritation.
- May cause drowsiness or dizziness.

Other: Harmful if ingested or inhaled. See Sections 8 and 16 for more information.

### **Precautionary Statements - Prevention**

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected carcinogens. As with any chemicals, asthmatic sensitization can occur from single or repeated exposure. Strict observation of exposure limits is essential (See Section 8).





**Appropriate engineering controls** Apply technical measures to comply with the occupational exposure limits.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	Wear goggles or safety glasses with unperforated side shields.
<b>Skin and Body Protection</b>	Use solvent resistant gloves and apron or suitable protective clothing, additional use of barrier cream is recommended.
<b>Respiratory Protection</b>	<p>Apply in a spray booth with ventilation that is adequate to keep the TWA TLV below the stated limits as stated in the Section 8 table, otherwise use a positive pressure air supplied respirator (TL19C NIOSH/MSHA approved). If unavailable, a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 8 may be used as long as the TWA TLV are below stated limits. Follow respirator manufacturer's directions for use. Wear the respirator for the duration of spraying and until all vapors and mists are gone.</p> <p><b>ALL PERSONELL IN THE AREA WHERE THIS PRODUCT IS BEING USED MUST BE EQUIPPED WITH THE SAME RESPIRATOR PROTECTION RECOMMENDED FOR THE PAINTERS.</b></p> <p>Wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive, when sanding or abrading dried film.</p>

**General Hygiene Considerations:** Handle in accordance with good industrial hygiene and safety practice.

**OTHER PRECAUTIONS**

If this product is to be mixed with other components before use, read and follow warning labels on all components. Intentional misuse by deliberately concentrating and inhaling the vapors can be harmful or fatal.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid		
<b>Appearance</b>	Paint	<b>Odor</b>	Not determined
<b>Color</b>	See description	<b>Odor Threshold</b>	Not determined
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH</b>	Not determined		
<b>Melting Point/Freezing Point</b>	Not determined		
<b>Boiling Point/Boiling Range</b>	110-178 °C / 230-353 °F		
<b>Flash Point</b>	28 °C / 82 °F		
<b>Evaporation Rate</b>	Slower Than Ether		
<b>Flammability (Solid, Gas)</b>	N/A - Liquid		
<b>Upper Explosive Limit (UEL)</b>	Not determined		
<b>Lower Explosive Limit (LEL)</b>	1.00 %		
<b>Flammability Limit Vapor</b>	Not determined		
<b>Vapor Pressure</b>	Not determined		
<b>Vapor Density</b>	Heavier than air		
<b>Specific Gravity</b>	0.82		
<b>Water Solubility</b>	Not determined		
<b>Solubility in other solvents</b>	Not determined		
<b>Partition Coefficient Auto-</b>	Not determined		
<b>Ignition Temperature</b>	Not determined		
<b>Decomposition</b>	Not determined		
<b>Temperature Kinematic</b>	Not determined		
<b>Viscosity Dynamic</b>	Not determined		
<b>Viscosity</b>	Not determined		
<b>VOC</b>	6.80 #/gal or 815 gr/li	EPA Method 24	
<b>VOC Actual</b>	6.80 #/gal or 815 gr/li	Total VOC per gallon, as supplied	
<b>Wt/Gal</b>	6.80 #/gal		

## 10. STABILITY AND REACTIVITY

**Reactivity** Not reactive under normal conditions.  
**Chemical Stability** Stable under recommended storage conditions.  
**Possibility of Hazardous Reactions** None under normal processing.  
**Conditions to Avoid** Avoid all possible sources of ignition.  
**Incompatible Materials** Strong oxidizing agents.  
**Hazardous Decomposition Products** Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

There is no specific data available for this product.

## 12. ECOLOGICAL INFORMATION

There is no specific data available for this product.

**CAUTION:** Can be toxic to living organisms. Keep out of soil and water stream.  
**ECOTOXICITY EFFECTS:** Harmful to aquatic life with long lasting effects.  
**MOBILITY:** Not available  
**BIOACCUMULATIVE POTENTIAL:** Not available  
**PERSISTENCE / DEGRADABILITY:** Not available

## 13. DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers. Disposal should be in accordance with applicable regional, national and local laws and regulations. Only EPA approved facility must handle incineration if this method of disposal is chosen.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations (Refer to above).

## 14. TRANSPORT INFORMATION

**NOTE** Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

**IATA**

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

**IMDG**

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	III

## 15. REGULATORY INFORMATION

There is no specific data available for this product.

## 16. OTHER INFORMATION

NFPA	<b>Health Hazards</b> 2*	<b>Flammability</b> 3	<b>Instability</b> 1	<b>Special Hazards</b> Not Determined
HMIS	<b>Health Hazards</b> *2	<b>Flammability</b> 3	<b>Physical Hazards</b> 1	<b>Personal Protection</b> J,X**

Chronic Hazard Star Legend  
Personal Protection

\*2=Chronic Health Hazard.

\*\*J=Goggles, impermeable gloves, apron and vapor respirator required.

X=See your supervisor for guidance.

Issue Date:

Revision Date: 27-Apr-2009

Version: A

Revision Note: SDS format

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

No. 25 Spray Thinner

By

Wilko

# Safety Data Sheet

Date Printed: 21-Oct-2015

Version: A

## 1. IDENTIFICATION

Product Identifier: NO.25  
Product Name: SPRAY THINNER TT-N-95 TY II  
Other means of Identification  
SDS#: NO.25 SDS  
Customer and Customer Product Code:  
UN/ID No.: UN 1263

### Recommended use of the product and restrictions on use

**Recommended Use:** Protective Coating.

### Details of the supplier of the safety data sheet

#### **Supplier Address**

Wilko Paint, Inc.  
2727 Ohio St.  
P.O. Box 4089  
Wichita, KS 67204

#### **Emergency Telephone Number**

**Company Phone Number:** Toll Free: **1-800-658-3799**  
**Emergency Telephone (24 hr):** Chemtrec: **1-800-424-9300**

## 2. HAZARDS IDENTIFICATION

**Physical State:** Liquid

### Classification

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Germ cell mutagenicity	Category 1B
Flammable Liquids	Category 2

### Signal Word

**Danger**



### Hazard Statements

- Flammable liquid and vapor.
- Harmful if swallowed.
- Causes skin irritation.
- Causes serious eye damage.
- May cause respiratory irritation.
- May cause drowsiness or dizziness.

Other: Harmful if ingested or inhaled. See Sections 8 and 16 for more information.

### Precautionary Statements - Prevention

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected carcinogens. As with any chemicals, asthmatic sensitization can occur from single or repeated exposure. Strict observation of exposure limits is essential (See Section 8).







**Appropriate engineering controls** Apply technical measures to comply with the occupational exposure limits.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	Wear goggles or safety glasses with unperforated side shields.
<b>Skin and Body Protection</b>	Use solvent resistant gloves and apron or suitable protective clothing, additional use of barrier cream is recommended.
<b>Respiratory Protection</b>	<p>Apply in a spray booth with ventilation that is adequate to keep the TWA TLV below the stated limits as stated in the Section 8 table, otherwise use a positive pressure air supplied respirator (TL19C NIOSH/MSHA approved). If unavailable, a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 8 may be used as long as the TWA TLV are below stated limits. Follow respirator manufacturer's directions for use. Wear the respirator for the duration of spraying and until all vapors and mists are gone.</p> <p><b>ALL PERSONELL IN THE AREA WHERE THIS PRODUCT IS BEING USED MUST BE EQUIPPED WITH THE SAME RESPIRATOR PROTECTION RECOMMENDED FOR THE PAINTERS.</b></p> <p>Wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive, when sanding or abrading dried film.</p>

**General Hygiene Considerations:** Handle in accordance with good industrial hygiene and safety practice.

**OTHER PRECAUTIONS**

If this product is to be mixed with other components before use, read and follow warning labels on all components. Intentional misuse by deliberately concentrating and inhaling the vapors can be harmful or fatal.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid		
<b>Appearance</b>	Paint	<b>Odor</b>	Not determined
<b>Color</b>	See description	<b>Odor Threshold</b>	Not determined
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH</b>	Not determined		
<b>Melting Point/Freezing Point</b>	Not determined		
<b>Boiling Point/Boiling Range</b>	118-143 °C / 245-290 °F		
<b>Flash Point</b>	14 °C / 57 °F		
<b>Evaporation Rate</b>	Slower Than Ether		
<b>Flammability (Solid, Gas)</b>	N/A - Liquid		
<b>Upper Explosive Limit (UEL)</b>	Not determined		
<b>Lower Explosive Limit (LEL)</b>	1.20 %		
<b>Flammability Limit Vapor</b>	Not determined		
<b>Vapor Pressure</b>	Not determined		
<b>Vapor Density</b>	Heavier than air		
<b>Specific Gravity</b>	0.74		
<b>Water Solubility</b>	Not determined		
<b>Solubility in other solvents</b>	Not determined		
<b>Partition Coefficient Auto-</b>	Not determined		
<b>Ignition Temperature</b>	Not determined		
<b>Decomposition</b>	Not determined		
<b>Temperature Kinematic</b>	Not determined		
<b>Viscosity Dynamic</b>	Not determined		
<b>Viscosity</b>	Not determined		
<b>VOC</b>	6.20 #/gal or 743 gr/li	EPA Method 24	
<b>VOC Actual</b>	6.20 #/gal or 743 gr/li	Total VOC per gallon, as supplied	
<b>Wt/Gal</b>	6.20 #/gal		

## 10. STABILITY AND REACTIVITY

**Reactivity** Not reactive under normal conditions.

**Chemical Stability** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions** None under normal processing

**Conditions to Avoid** Avoid all possible sources of ignition.

**Incompatible Materials** Strong oxidizing agents.

**Hazardous Decomposition Products** Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

There is no specific data available for this product.

## 12. ECOLOGICAL INFORMATION

There is no specific data available for this product.

**CAUTION:** Can be toxic to living organisms. Keep out of soil and water stream.

**ECOTOXICITY EFFECTS:** Harmful to aquatic life with long lasting effects.

**MOBILITY:** Not available

**BIOACCUMULATIVE POTENTIAL:** Not available

**PERSISTENCE / DEGRADABILITY:** Not available

## 13. DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers. Disposal should be in accordance with applicable regional, national and local laws and regulations. Only EPA approved facility must handle incineration if this method of disposal is chosen.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations (Refer to above).

## 14. TRANSPORT INFORMATION

**NOTE** Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	II

**IATA**

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	II

**IMDG**

UN/ID No	UN 1263
Proper Shipping Name	Paint
Hazard Class	3
Packing Group	II

## 15. REGULATORY INFORMATION

There is no specific data available for this product.

## 16. OTHER INFORMATION

NFPA	<b>Health Hazards</b> 2*	<b>Flammability</b> 3	<b>Instability</b> 1	<b>Special Hazards</b> Not Determined
HMIS	<b>Health Hazards</b> *2	<b>Flammability</b> 3	<b>Physical Hazards</b> 1	<b>Personal Protection</b> J,X**

Chronic Hazard Star Legend  
Personal Protection

\*2=Chronic Health Hazard.

\*\*J=Goggles, impermeable gloves, apron and vapor respirator required.

X=See your supervisor for guidance.

Issue Date:

Revision Date: 28-May-2009

Version: A

Revision Note: SDS format

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Carboguard 890 (A)

By

Carboline



**Safety Data Sheet**  
prepared to UN GHS Revision 3

## 1. Identification of the Substance/Mixture and the Company/Undertaking

- 1.1 Product Identifier 0986A1NL
- Product Name: CARBOGUARD 890 PART A Revision Date: 10/20/2015  
Supersedes Date: 06/05/2015
- 1.2 Relevant identified uses of the substance or mixture and uses advised against Component of multicomponent industrial coatings - Industrial use.
- 1.3 Details of the supplier of the safety data sheet
- Manufacturer: Carboline Company  
2150 Schuetz Road  
St. Louis, MO USA 63146
- Regulatory / Technical Information:  
Contact Carboline Technical Services at  
1-800-848-4645
- Datasheet Produced by: Schlereth, Ken - ehs@stoncor.com
- 1.4 Emergency telephone number: CHEMTREC 1-800-424-9300 (Inside US)  
CHEMTREC +1 703 5273887 (Outside US)  
HEALTH - Pittsburgh Poison Control 1-412-681-6669

## 2. Hazard Identification

### 2.1 Classification of the substance or mixture

Hazardous to the aquatic environment, Chronic, category 2  
Carcinogenicity, category 1A  
Eye Irritation, category 2  
Flammable Liquid, category 3  
STOT, single exposure, category 1  
STOT, single exposure, category 3, RTI  
Skin Irritation, category 2  
Skin Sensitizer, category 1

## 2.2 Label elements

### Symbol(s) of Product



### Signal Word

Danger

### Named Chemicals on Label

PARA-XYLENE, MICROCRYSTALLINE SILICA, EPOXY RESIN

### GHS HAZARD STATEMENTS

Flammable Liquid, category 3	H226	Flammable liquid and vapour.
Skin Irritation, category 2	H315	Causes skin irritation.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.
Eye Irritation, category 2	H319	Causes serious eye irritation.
STOT, single exposure, category 3, RTI	H335	May cause respiratory irritation.
Carcinogenicity, category 1A	H350-1A	May cause cancer.
STOT, single exposure, category 1	H370	Causes damage to organs.
Hazardous to the aquatic environment, Chronic, category 2	H411	Toxic to aquatic life with long lasting effects.

### GHS PRECAUTION PHRASES

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Wear respiratory protection.
P302+352	IF ON SKIN: Wash with plenty of soap and water.
P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P307+311	IF exposed, call a POISON CENTER or doctor/physician.
P308+313	IF exposed or concerned: Get medical advice/attention
P314	Get medical advice/attention if you feel unwell.
P332+313	If skin irritation occurs: Get medical advice/attention.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.
P403+233	Store in a well-ventilated place. Keep container tightly closed.

## 2.3 Other hazards

No Information

### Results of PBT and vPvB assessment:

The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.



### 3. Composition/Information On Ingredients

#### 3.2 Mixtures

##### Hazardous Ingredients

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>%</u>
25068-38-6	EPOXY RESIN	25-50
13463-67-7	TITANIUM DIOXIDE	25-50
14808-60-7	MICROCRYSTALLINE SILICA	10-25
25036-25-3	EPOXY RESIN	10-25
68515-43-5	1,2-BENZENEDICARBOXYLIC ACID, DI-C9-11-BRANCHED AND LINEAR ALKYL ESTERS	10-25
1333-86-4	CARBON BLACK	2.5-10
108-38-3	META-XYLENE	2.5-10
108-65-6	1-METHOXY-2-PROPANOL ACETATE	2.5-10
64742-95-6	AROMATIC HYDROCARBON	1.0-2.5
78-93-3	METHYL ETHYL KETONE	1.0-2.5
106-42-3	PARA-XYLENE	1.0-2.5
100-41-4	ETHYL BENZENE	1.0-2.5
95-47-6	ORTHO-XYLENE	1.0-2.5
68987-63-3	COPPER COMPOUNDS	<0.1

<u>CAS-No.</u>	<u>GHS Symbols</u>	<u>GHS Hazard Statements</u>	<u>M-Factors</u>
25068-38-6	GHS07-GHS09	H315-317-319-335-411	0
13463-67-7			0
14808-60-7	GHS08	H350-370	0
25036-25-3	GHS07	H315-317-319	0
68515-43-5			0
1333-86-4	GHS08	H351	0
108-38-3	GHS02-GHS07	H226-312-315-332	0
108-65-6	GHS02	H226	0
64742-95-6	GHS02-GHS08-GHS09	H226-411	0
78-93-3	GHS02-GHS07	H225-319-336	0
106-42-3	GHS02-GHS07-GHS08	H226-312-315-332-335-371	0
100-41-4	GHS02-GHS07	H225-332	0
95-47-6	GHS02-GHS07	H226-312-315-332	0
68987-63-3			0

Additional Information: The text for GHS Hazard Statements shown above (if any) is given in Section 16.

### 4. First-aid Measures

#### 4.1 Description of First Aid Measures

**AFTER INHALATION:** Give oxygen or artificial respiration if needed. Remove person to fresh air. If signs/symptoms continue, get medical attention.

**AFTER SKIN CONTACT:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If skin irritation persists, call a physician.

**AFTER EYE CONTACT:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**AFTER INGESTION:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, call a poison control centre or doctor immediately.

#### 4.2 Most important symptoms and effects, both acute and delayed

Harmful if swallowed. Irritating to eyes and skin. Risk of serious damage to the lungs (by aspiration). Vapours may cause drowsiness and dizziness.

#### 4.3 Indication of any immediate medical attention and special treatment needed

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.

When symptoms persist or in all cases of doubt seek medical advice.

## 5. Fire-fighting Measures

### 5.1 Extinguishing Media:

Carbon Dioxide, Dry Chemical, Foam, Water Fog

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Flammable liquid. Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. Provide adequate ventilation. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Electrical installations / working materials must comply with the technological safety standards. Wear shoes with conductive soles.

### 5.2 Special hazards arising from the substance or mixture

No Information

### 5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. Cool containers / tanks with water spray. Flammable.

## 6. Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. Evacuate personnel to safe areas. Remove all sources of ignition. Remove all sources of ignition. To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. Wear personal protective equipment.

### 6.2 Environmental precautions

Do not allow material to contaminate ground water system. Prevent product from entering drains.

### 6.3 Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

### 6.4 Reference to other sections

Please refer to disposal requirements or country specific disposal requirements for this material. See Section 13 for further information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**INSTRUCTIONS FOR SAFE HANDLING :** Keep containers dry and tightly closed to avoid moisture absorption and contamination. Prepare the working solution as given on the label(s) and/or the user instructions. Do not breathe vapours or spray mist. Ensure all equipment is electrically grounded before beginning transfer operations. Do not use sparking tools. Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation/personal protection.

**PROTECTION AND HYGIENE MEASURES :** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke.

### 7.2 Conditions for safe storage, including any incompatibilities

**CONDITIONS TO AVOID:** Heat, flames and sparks.

**STORAGE CONDITIONS:** Keep container closed when not in use. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.

### 7.3 Specific end use(s)

No specific advice for end use available.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

#### Ingredients with Occupational Exposure Limits (US)

Name	%	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING	OEL Note
EPOXY RESIN	25-50	N/E	N/E	N/E	N/E	
TITANIUM DIOXIDE	25-50	10 MGM3	N/E	10 MGM3	N/E	
MICROCRYSTALLINE SILICA	10-25	0.025 MG/M3 (respirable)	N/E	0.1 MG/M3	N/E	
EPOXY RESIN	10-25	N/E	N/E	N/E	N/E	
1,2-BENZENEDICARBOXYLIC ACID, DI-C9-11-BRANCHED AND LINEAR ALKYL ESTERS	10-25	N/E	N/E	N/E	N/E	
CARBON BLACK	2.5-10	3.0 MG/M3	N/E	3.5 MG/M3	N/E	
META-XYLENE	2.5-10	100 PPM	150 PPM	435 MG/M3	N/E	
1-METHOXY-2-PROPANOL ACETATE	2.5-10	N/E	N/E	N/E	N/E	
AROMATIC HYDROCARBON	1.0-2.5	N/E	N/E	N/E	N/E	
METHYL ETHYL KETONE	1.0-2.5	200 PPM	300 PPM	590 MGM3	N/E	
PARA-XYLENE	1.0-2.5	100 PPM	150 PPM	435 MGM3	N/E	
ETHYL BENZENE	1.0-2.5	20 PPM	N/E	435 MGM3	N/E	
ORTHO-XYLENE	1.0-2.5	100 PPM	150 PPM	435 MG/M3	N/E	
COPPER COMPOUNDS	<0.1	N/E	N/E	N/E	N/E	

**FURTHER INFORMATION:** Refer to the regulatory exposure limits for the workforce enforced in each country.

### 8.2 Exposure controls

#### Personal Protection

**RESPIRATORY PROTECTION:** In order to avoid inhalation of spray-mist and sanding dust, all spraying and sanding must be done wearing adequate respirator. Use only with ventilation to keep levels below exposure guidelines reported in this document. User should test and monitor exposure levels to ensure all personnel are below guidelines. If not sure, or not able to monitor, use State or federally approved supplied air respirator. For silica containing coatings in a liquid state, and/or if no exposure limits are established above, air-supplied respirators are generally not required.

**EYE PROTECTION:** Safety glasses with side-shields.

**HAND PROTECTION:** Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Impervious gloves. Request information on glove permeation properties from the glove supplier.

**OTHER PROTECTIVE EQUIPMENT:** Ensure that eyewash stations and safety showers are close to the workstation location. Lightweight protective clothing

**ENGINEERING CONTROLS:** Avoid contact with skin, eyes and clothing. Ensure adequate ventilation, especially in confined areas.

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

Appearance:	Viscous Yellow Liquid
Physical State	Liquid
Odor	Epoxy
Odor threshold	Not Determined
pH	Not Determined
Melting point / freezing point (°C)	Not Determined

<b>Boiling point/range (°C)</b>	173 F (78 C) - 500 F (260 C)
<b>Flash Point, (°C)</b>	32
<b>Evaporation rate</b>	Slower than Ether
<b>Flammability (solid, gas)</b>	Not determined
<b>Upper/lower flammability or explosive limits</b>	0.5 - 7.0
<b>Vapour Pressure, mmHg</b>	Not Determined
<b>Vapour density</b>	Heavier than Air
<b>Relative density</b>	Not determined
<b>Solubility in / Miscibility with water</b>	Not Determined
<b>Partition coefficient: n-octanol/water</b>	Not determined
<b>Auto-ignition temperature (°C)</b>	Not determined
<b>Decomposition temperature (°C)</b>	Not determined
<b>Viscosity</b>	Not Determined
<b>Explosive properties</b>	Not determined
<b>Oxidising properties</b>	Not determined

**9.2 Other information**

<b>VOC Content g/l:</b>	214
<b>Specific Gravity (g/cm3)</b>	app. 1.29 (varies by color)

## 10. Stability and Reactivity

**10.1 Reactivity**

No reactivity hazards known under normal storage and use conditions.

**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

Hazardous polymerisation does not occur.

**10.4 Conditions to avoid**

Heat, flames and sparks.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

#### Acute Toxicity:

Oral LD50: N/D  
Inhalation LC50: N/D

Irritation: Unknown

Corrosivity: Unknown

Sensitization: Unknown

Repeated dose toxicity: Unknown

Carcinogenicity: Unknown

Mutagenicity: Unknown

Toxicity for reproduction: Unknown

If no information is available above under Acute Toxicity then the acute effects of this product have not been tested. Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
25068-38-6	EPOXY RESIN	11400 mg/kg, rat, oral	23000 mg/kg, dermal, rabbit	>20 mL/kg skin, sensitizer
13463-67-7	TITANIUM DIOXIDE	25000 mg/m <sup>3</sup> , oral (rat)		Not Available
14808-60-7	MICROCRYSTALLINE SILICA	Not Available	Not Available	Not Available
25036-25-3	EPOXY RESIN	>2000 mg/kg, oral, rat	>2000 mg/kg, dermal, rat	Not Available
68515-43-5	1,2-BENZENEDICARBOXYLIC ACID, DI-C9-11-BRANCHED AND LINEAR ALKYL ESTERS	>5000 MG/KG, ORAL, RAT		Not Available
1333-86-4	CARBON BLACK	8000 mg/kg oral, rat		Not Available
108-38-3	META-XYLENE	Not Available		Not Available
108-65-6	1-METHOXY-2-PROPANOL ACETATE	8532 mg/kg, oral (rat)	>5000 mg/kg	101 ppm/4 hr, rat, inh
64742-95-6	AROMATIC HYDROCARBON	4700 mg/kg, oral, rat		3670 ppm/8 hours, rat, inhalation
78-93-3	METHYL ETHYL KETONE	2194 mg/kg rat, oral		34.5 mg/L 4 hour rat, inhalation
106-42-3	PARA-XYLENE	Not Available		Not Available
100-41-4	ETHYL BENZENE	3500 mg/kg rat, oral	>5000 mg/l, dermal rabbit	17.2 mg/L Inh, Rat, 4Hr
95-47-6	ORTHO-XYLENE	Not Available		Not Available

#### Additional Information:

Harmful if swallowed. Irritating to eyes and skin. Risk of serious damage to the lungs (by aspiration). Vapours may cause drowsiness and dizziness.

## 12. Ecological Information

### 12.1 Toxicity:

EC50 48hr (Daphnia):	Unknown
IC50 72hr (Algae):	Unknown
LC50 96hr (fish):	Unknown

12.2 Persistence and degradability: Unknown

12.3 Bioaccumulative potential: Unknown

12.4 Mobility in soil: Unknown

12.5 Results of PBT and vPvB assessment: The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

12.6 Other adverse effects: Unknown

CAS-No.	Chemical Name	EC50 48hr	IC50 72hr	LC50 96hr
25068-38-6	EPOXY RESIN	2.1 mg/l (daphnia)	11 mg/l (algae)	1.3 mg/l (fish)
13463-67-7	TITANIUM DIOXIDE	No information	No information	No information
14808-60-7	MICROCRYSTALLINE SILICA	No information	No information	No information
25036-25-3	EPOXY RESIN	No information	No information	No information
68515-43-5	1,2-BENZENEDICARBOXYLIC ACID, DI-C9-11-BRANCHED AND LINEAR ALKYL ESTERS	No information	No information	No information
1333-86-4	CARBON BLACK	No information	No information	No information
108-38-3	META-XYLENE	No information	No information	No information
108-65-6	1-METHOXY-2-PROPANOL ACETATE	No information	No information	No information
64742-95-6	AROMATIC HYDROCARBON	No information	No information	No information
78-93-3	METHYL ETHYL KETONE	308 mg/l (Daphnia magna)	No information	2993 mg/l (Pimephales promelas)
106-42-3	PARA-XYLENE	No information	No information	No information
100-41-4	ETHYL BENZENE	No information	No information	No information
95-47-6	ORTHO-XYLENE	No information	No information	No information
68987-63-3	COPPER COMPOUNDS	No information	No information	No information

## 13. Disposal Considerations

13.1 WASTE TREATMENT METHODS: Do not burn, or use a cutting torch on, the empty drum. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**14. Transport Information**

14.1	UN number	1263
14.2	UN proper shipping name	Paint
	Technical name	N/A
14.3	Transport hazard class(es)	3
	Subsidiary shipping hazard	N/A
14.4	Packing group	III
14.5	Environmental hazards	Marine Pollutant: Yes (Epoxy resin)
14.6	Special precautions for user	Unknown
	EmS-No.:	F-E, S-E
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code	Unknown

**15. Regulatory Information**

15.1 Safety, health and environmental regulations/legislation for the substance or mixture:

**U.S. Federal Regulations: As follows -****CERCLA - Sara Hazard Category**

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

**Sara Section 313:**

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS-No.</u>
META-XYLENE	108-38-3
PARA-XYLENE	106-42-3
ETHYL BENZENE	100-41-4
ORTHO-XYLENE	95-47-6
COPPER COMPOUNDS	68987-63-3

**Toxic Substances Control Act:**

All components of this product are either listed on the TSCA Inventory or are exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

<u>Chemical Name</u>	<u>CAS-No.</u>
----------------------	----------------

No TSCA 12(b) components exist in this product.

**U.S. State Regulations: As follows -****New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

<u>Chemical Name</u>	<u>CAS-No.</u>
----------------------	----------------

No NJ Right-To-Know components exist in this product.

**Pennsylvania Right-To-Know**

The following non-hazardous ingredients are present in the product at greater than 3%.

<u>Chemical Name</u>	<u>CAS-No.</u>
YELLOW PIGMENT	31837-42-0
IRON OXIDE	1332-37-2

**California Proposition 65:**

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

<u>Chemical Name</u>	<u>CAS-No.</u>
TITANIUM DIOXIDE	13463-67-7
MICROCRYSTALLINE SILICA	14808-60-7
CARBON BLACK	1333-86-4
ETHYL BENZENE	100-41-4
CUMENE	98-82-8
BENZENE	71-43-2

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards.

<u>Chemical Name</u>	<u>CAS-No.</u>
TOLUENE	108-88-3
BENZENE	71-43-2

**International Regulations: As follows -****\* Canadian DSL:**

No Information

**15.2 Chemical Safety Assessment:**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**16. Other Information****Text for GHS Hazard Statements shown in Section 3 describing each ingredient:**

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H350	May cause cancer.
H351	Suspected of causing cancer.
H370	Causes damage to organs.
H371	May cause damage to organs.
H411	Toxic to aquatic life with long lasting effects.

**Reasons for revision**

No Information

No Information



Carboguard 890 (B)

By

Carboline



**Safety Data Sheet**  
prepared to UN GHS Revision 3

## 1. Identification of the Substance/Mixture and the Company/Undertaking

- 1.1 **Product Identifier** 0986B1NL
- Product Name:** CARBOGUARD 890 PART B **Revision Date:** 09/29/2015
- Supersedes Date:** 08/13/2015
- 1.2 **Relevant identified uses of the substance or mixture and uses advised against** Component of multicomponent industrial coatings - Industrial use.
- 1.3 **Details of the supplier of the safety data sheet**
- Manufacturer:** Carboline Company  
2150 Schuetz Road  
St. Louis, MO USA 63146
- Regulatory / Technical Information:**  
Contact Carboline Technical Services at  
1-800-848-4645
- Datasheet Produced by:** Burst, Chris - ehs@stoncor.com
- 1.4 **Emergency telephone number:** CHEMTREC 1-800-424-9300 (Inside US)  
CHEMTREC +1 703 5273887 (Outside US)  
HEALTH - Pittsburgh Poison Control 1-412-681-6669

## 2. Hazard Identification

### 2.1 Classification of the substance or mixture

Acute Toxicity, Oral, category 4  
Acute Toxicity, Inhalation, category 4  
Carcinogenicity, category 1A  
Flammable Liquid, category 2  
Reproductive Toxicity, category 2  
STOT, single exposure, category 1  
Skin Corrosion, category 1  
Skin Sensitizer, category 1

## 2.2 Label elements

### Symbol(s) of Product



### Signal Word

Danger

### Named Chemicals on Label

N-BUTANOL, ORTHO-XYLENE, ETHYL BENZENE, BENZYL ALCOHOL, PARA-XYLENE, META-XYLENE, TOLUENE, ISOPHORONEDIAMINE, MICROCRYSTALLINE SILICA

### GHS HAZARD STATEMENTS

Flammable Liquid, category 2	H225	Highly flammable liquid and vapour.
Acute Toxicity, Oral, category 4	H302	Harmful if swallowed.
Skin Corrosion, category 1	H314-1	Causes severe skin burns and eye damage.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.
Acute Toxicity, Inhalation, category 4	H332	Harmful if inhaled.
Carcinogenicity, category 1A	H350-1A	May cause cancer.
Reproductive Toxicity, category 2	H361	Suspected of damaging fertility or the unborn child.
STOT, single exposure, category 1	H370	Causes damage to organs.

### GHS PRECAUTION PHRASES

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P235	Keep cool.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Wear respiratory protection.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+352	IF ON SKIN: Wash with plenty of soap and water.
P303+361+353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P307+311	IF exposed, call a POISON CENTER or doctor/physician.
P308+313	IF exposed or concerned: Get medical advice/attention
P308+P313	IF exposed or concerned: Get medical advice/attention
P314	Get medical advice/attention if you feel unwell.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P403+233	Store in a well-ventilated place. Keep container tightly closed.

**2.3 Other hazards**

No Information

**Results of PBT and vPvB assessment:**

The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

**3. Composition/Information On Ingredients****3.2 Mixtures****Hazardous Ingredients**

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>%</u>
14808-60-7	MICROCRYSTALLINE SILICA	50-75
100-51-6	BENZYL ALCOHOL	2.5-10
2855-13-2	ISOPHORONEDIAMINE	2.5-10
108-38-3	META-XYLENE	2.5-10
108-88-3	TOLUENE	2.5-10
67-63-0	ISOPROPANOL	2.5-10
64742-95-6	AROMATIC HYDROCARBON	2.5-10
68002-19-7	MODIFIED UREA-FORMALDEHYDE RESIN	1.0-2.5
106-42-3	PARA-XYLENE	1.0-2.5
100-41-4	ETHYL BENZENE	1.0-2.5
71-36-3	N-BUTANOL	1.0-2.5
95-47-6	ORTHO-XYLENE	1.0-2.5

<u>CAS-No.</u>	<u>GHS Symbols</u>	<u>GHS Hazard Statements</u>	<u>M-Factors</u>
14808-60-7	GHS08	H350-370	0
100-51-6	GHS07	H302-312-319-332	0
2855-13-2	GHS05-GHS07	H302-312-314-317-412	0
108-38-3	GHS02-GHS07	H226-312-315-332	0
108-88-3	GHS02-GHS07-GHS08	H225-315-319-336-361-373	0
67-63-0	GHS02-GHS07	H225-319-336	0
64742-95-6	GHS02-GHS08-GHS09	H226-411	0
68002-19-7		H413	0
106-42-3	GHS02-GHS07-GHS08	H226-312-315-332-335-371	0
100-41-4	GHS02-GHS07	H225-332	0
71-36-3	GHS02-GHS05-GHS07	H226-302-315-318-335-336	0
95-47-6	GHS02-GHS07	H226-312-315-332	0

**Additional Information:** The text for GHS Hazard Statements shown above (if any) is given in Section 16.

**4. First-aid Measures****4.1 Description of First Aid Measures**

**AFTER INHALATION:** Give oxygen or artificial respiration if needed. Remove person to fresh air. If signs/symptoms continue, get medical attention.

**AFTER SKIN CONTACT:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If skin irritation persists, call a physician.

**AFTER EYE CONTACT:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**AFTER INGESTION:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, call a poison control centre or doctor immediately.

**4.2 Most important symptoms and effects, both acute and delayed**

Harmful if swallowed. Irritating to eyes and skin. Risk of serious damage to the lungs (by aspiration). Vapours may cause drowsiness and dizziness.

**4.3 Indication of any immediate medical attention and special treatment needed**

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.

When symptoms persist or in all cases of doubt seek medical advice.

## 5. Fire-fighting Measures

### 5.1 Extinguishing Media:

Carbon Dioxide, Dry Chemical, Foam, Water Fog

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Flammable liquid. Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. Provide adequate ventilation. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Electrical installations / working materials must comply with the technological safety standards. Wear shoes with conductive soles.

### 5.2 Special hazards arising from the substance or mixture

No Information

### 5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. Cool containers / tanks with water spray. Flammable.

## 6. Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. Evacuate personnel to safe areas. Remove all sources of ignition. To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. Wear personal protective equipment.

### 6.2 Environmental precautions

Do not allow material to contaminate ground water system. Prevent product from entering drains.

### 6.3 Methods and material for containment and cleaning up

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

### 6.4 Reference to other sections

Please refer to disposal requirements or country specific disposal requirements for this material. See Section 13 for further information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**INSTRUCTIONS FOR SAFE HANDLING :** Keep containers dry and tightly closed to avoid moisture absorption and contamination. Prepare the working solution as given on the label(s) and/or the user instructions. Do not breathe vapours or spray mist. Ensure all equipment is electrically grounded before beginning transfer operations. Do not use sparking tools. Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation/personal protection.

**PROTECTION AND HYGIENE MEASURES :** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke.

### 7.2 Conditions for safe storage, including any incompatibilities

**CONDITIONS TO AVOID:** Heat, flames and sparks.

**STORAGE CONDITIONS:** Keep container closed when not in use. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.

### 7.3 Specific end use(s)

No specific advice for end use available.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

#### Ingredients with Occupational Exposure Limits (US)

Name	%	ACGIH TLV- TWA	ACGIH TLV- STEL	OSHA PEL- TWA	OSHA PEL- CEILING	OEL Note
MICROCRYSTALLINE SILICA	50-75	0.025 MG/M3 (respirable)	N/E	0.1 MG/M3	N/E	
BENZYL ALCOHOL	2.5-10	N/E	N/E	N/E	N/E	
ISOPHORONEDIAMINE	2.5-10	N/E	N/E	N/E	N/E	
META-XYLENE	2.5-10	100 PPM	150 PPM	435 MG/M3	N/E	
TOLUENE	2.5-10	20 PPM	N/E	375 MGM3	N/E	
ISOPROPANOL	2.5-10	200 PPM	400 PPM	980 MGM3	N/E	
AROMATIC HYDROCARBON	2.5-10	N/E	N/E	N/E	N/E	
MODIFIED UREA-FORMALDEHYDE RESIN	1.0-2.5	N/E	N/E	N/E	N/E	
PARA-XYLENE	1.0-2.5	100 PPM	150 PPM	435 MGM3	N/E	
ETHYL BENZENE	1.0-2.5	20 PPM	N/E	435 MGM3	N/E	
N-BUTANOL	1.0-2.5	20 PPM	50 ppm	300.0 MG/M3	150 MGM3	
ORTHO-XYLENE	1.0-2.5	100 PPM	150 PPM	435 MG/M3	N/E	

**FURTHER INFORMATION:** Refer to the regulatory exposure limits for the workforce enforced in each country.

### 8.2 Exposure controls

#### Personal Protection

**RESPIRATORY PROTECTION:** In order to avoid inhalation of spray-mist and sanding dust, all spraying and sanding must be done wearing adequate respirator. Use only with ventilation to keep levels below exposure guidelines reported in this document. User should test and monitor exposure levels to ensure all personnel are below guidelines. If not sure, or not able to monitor, use State or federally approved supplied air respirator. For silica containing coatings in a liquid state, and/or if no exposure limits are established above, air-supplied respirators are generally not required.

**EYE PROTECTION:** Safety glasses with side-shields.

**HAND PROTECTION:** Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Impervious gloves. Request information on glove permeation properties from the glove supplier.

**OTHER PROTECTIVE EQUIPMENT:** Ensure that eyewash stations and safety showers are close to the workstation location. Lightweight protective clothing

**ENGINEERING CONTROLS:** Avoid contact with skin, eyes and clothing. Ensure adequate ventilation, especially in confined areas.

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

Appearance:	Viscous Liquid
Physical State	Liquid
Odor	Solvent
Odor threshold	N/D
pH	N/D
Melting point / freezing point (°C)	N/D
Boiling point/range (°C)	176 F (80 C) - 500 F (260 C)
Flash Point, (°C)	22
Evaporation rate	

	Slower than Ether
<b>Flammability (solid, gas)</b>	Not determined
<b>Upper/lower flammability or explosive limits</b>	0.5 - 12.0
<b>Vapour Pressure, mmHg</b>	N/D
<b>Vapour density</b>	Heavier than Air
<b>Relative density</b>	Not determined
<b>Solubility in / Miscibility with water</b>	N/D
<b>Partition coefficient: n-octanol/water</b>	Not determined
<b>Auto-ignition temperature (°C)</b>	Not determined
<b>Decomposition temperature (°C)</b>	Not determined
<b>Viscosity</b>	Unknown
<b>Explosive properties</b>	Not determined
<b>Oxidising properties</b>	Not determined
<b>9.2 Other information</b>	
<b>VOC Content g/l:</b>	214
<b>Specific Gravity (g/cm3)</b>	1.6

## 10. Stability and Reactivity

### 10.1 Reactivity

No reactivity hazards known under normal storage and use conditions.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

Hazardous polymerisation does not occur.

### 10.4 Conditions to avoid

Heat, flames and sparks.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

#### Acute Toxicity:

Oral LD50: N/D

Inhalation LC50: N/D

Irritation: Unknown

Corrosivity: Unknown

Sensitization: Unknown

Repeated dose toxicity: Unknown

Carcinogenicity: Unknown

Mutagenicity: Unknown

Toxicity for reproduction: Unknown

If no information is available above under Acute Toxicity then the acute effects of this product have not been tested. Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
14808-60-7	MICROCRYSTALLINE SILICA	Not Available	Not Available	Not Available
100-51-6	BENZYL ALCOHOL	1230 mg/kg rat, oral	2000 mg/kg, dermal, rabbit	1000 ppm / 8 hrs rat, inhalation
2855-13-2	ISOPHORONEDIAMINE	500 mg/kg oral		Not Available
108-38-3	META-XYLENE	Not Available		Not Available
108-88-3	TOLUENE	5000 mg/kg rat oral	12267 mg/kg, dermal, rabbit	8000 ppm/4 hrs, rat, inhalation
67-63-0	ISOPROPNOL	4720 mg/kg rat, oral	12800 mg/kg, dermal, rabbit	22500 ppm/8hrs rat, inhalation
64742-95-6	AROMATIC HYDROCARBON	4700 mg/kg, oral, rat		3670 ppm/8 hours, rat, inhalation
68002-19-7	MODIFIED UREA-FORMALDEHYDE RESIN	5000 mg/kg, oral, rat		Not Available
106-42-3	PARA-XYLENE	Not Available		Not Available
100-41-4	ETHYL BENZENE	3500 mg/kg rat, oral	>5000 mg/l, dermal rabbit	17.2 mg/L Inh, Rat, 4Hr
71-36-3	N-BUTANOL	790 mg/kg rat, oral	3400 mg/kg, dermal, rabbit	8000 ppm / 4hrs rat, inhalation
95-47-6	ORTHO-XYLENE	Not Available		Not Available

#### Additional Information:

Harmful if swallowed. Irritating to eyes and skin. Risk of serious damage to the lungs (by aspiration). Vapours may cause drowsiness and dizziness.



## 12. Ecological Information

### 12.1 Toxicity:

EC50 48hr (Daphnia):	Unknown
IC50 72hr (Algae):	Unknown
LC50 96hr (fish):	Unknown

12.2 Persistence and degradability: Unknown

12.3 Bioaccumulative potential: Unknown

12.4 Mobility in soil: Unknown

12.5 Results of PBT and vPvB assessment: The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

12.6 Other adverse effects: Unknown

CAS-No.	Chemical Name	EC50 48hr	IC50 72hr	LC50 96hr
14808-60-7	MICROCRYSTALLINE SILICA	No information	No information	No information
100-51-6	BENZYL ALCOHOL	No information	700 mg/l (Algae)	10 mg/l (Fish)
2855-13-2	ISOPHORONEDIAMINE	No information	No information	No information
108-38-3	META-XYLENE	No information	No information	No information
108-88-3	TOLUENE	6 mg/l (Daphnia magna)	12.5 mg/L (Algae)	5.8 mg/L (Fish)
67-63-0	ISOPROPRANOL	No information	No information	No information
64742-95-6	AROMATIC HYDROCARBON	No information	No information	No information
68002-19-7	MODIFIED UREA-FORMALDEHYDE RESIN	No information	No information	No information
106-42-3	PARA-XYLENE	No information	No information	No information
100-41-4	ETHYL BENZENE	No information	No information	No information
71-36-3	N-BUTANOL	1328 mg/l (Daphnia magna)	225 mg/l (Algae)	1376 mg/l (Fathead minnow)
95-47-6	ORTHO-XYLENE	No information	No information	No information

## 13. Disposal Considerations

13.1 **WASTE TREATMENT METHODS:** Do not burn, or use a cutting torch on, the empty drum. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**14. Transport Information**

14.1	UN number	UN 1263
14.2	UN proper shipping name	Paint
	Technical name	N/A
14.3	Transport hazard class(es)	3
	Subsidiary shipping hazard	N/A
14.4	Packing group	II
14.5	Environmental hazards	Unknown
14.6	Special precautions for user	Unknown
	EmS-No.:	F-E, S-E
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code	Unknown

**15. Regulatory Information**

15.1 Safety, health and environmental regulations/legislation for the substance or mixture:

**U.S. Federal Regulations: As follows -****CERCLA - Sara Hazard Category**

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

**Sara Section 313:**

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS-No.</u>
META-XYLENE	108-38-3
TOLUENE	108-88-3
ISOPROPANOL	67-63-0
PARA-XYLENE	106-42-3
ETHYL BENZENE	100-41-4
N-BUTANOL	71-36-3
ORTHO-XYLENE	95-47-6

**Toxic Substances Control Act:**

All components of this product are either listed on the TSCA Inventory or are exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

<u>Chemical Name</u>	<u>CAS-No.</u>
MODIFIED UREA-FORMALDEHYDE RESIN	68002-19-7

**U.S. State Regulations: As follows -****New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

<u>Chemical Name</u>	<u>CAS-No.</u>
----------------------	----------------

No NJ Right-To-Know components exist in this product.

**Pennsylvania Right-To-Know**

The following non-hazardous ingredients are present in the product at greater than 3%.

<u>Chemical Name</u>	<u>CAS-No.</u>
AMINE ADDUCT	CONFIDENTIAL

**California Proposition 65:**

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

<u>Chemical Name</u>	<u>CAS-No.</u>
MICROCRYSTALLINE SILICA	14808-60-7
ETHYL BENZENE	100-41-4
FORMALDEHYDE	50-00-0
CUMENE	98-82-8
BENZENE	71-43-2

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards.

<u>Chemical Name</u>	<u>CAS-No.</u>
TOLUENE	108-88-3
BENZENE	71-43-2

**International Regulations: As follows -****\* Canadian DSL:**

No Information

**15.2 Chemical Safety Assessment:**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**16. Other Information**

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H370	Causes damage to organs.
H371	May cause damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

**Reasons for revision**

No Information

No Information

Carboline Thinner No. 2

By

Carboline



**Safety Data Sheet**  
prepared to UN GHS Revision 3

## 1. Identification of the Substance/Mixture and the Company/Undertaking

- 1.1 **Product Identifier** 0522S1NL
- Product Name:** THINNER 2 **Revision Date:** 07/01/2015
- Supercedes Date:** 05/30/2015
- 1.2 **Relevant identified uses of the substance or mixture and uses advised against** Thinner for industrial coatings - Industrial use
- 1.3 **Details of the supplier of the safety data sheet**
- Manufacturer:** Carboline Company  
2150 Schuetz Road  
St. Louis, MO USA 63146
- Regulatory / Technical Information:**  
Contact Carboline Technical Services at  
1-800-848-4645
- Datasheet Produced by:** Burst, Chris - ehs@stoncor.com
- 1.4 **Emergency telephone number:** CHEMTREC 1-800-424-9300 (Inside US)  
CHEMTREC +1 703 5273887 (Outside US)  
HEALTH - Pittsburgh Poison Control 1-412-681-6669

## 2. Hazard Identification

### 2.1 Classification of the substance or mixture

Aspiration Hazard, category 1  
 Eye Irritation, category 2  
 Flammable Liquid, category 2  
 Reproductive Toxicity, category 2  
 STOT, repeated exposure, category 2  
 STOT, single exposure, category 3, NE  
 Skin Irritation, category 2

## 2.2 Label elements

### Symbol(s) of Product



### Signal Word

Danger

### Named Chemicals on Label

METHYL ETHYL KETONE, TOLUENE

### GHS HAZARD STATEMENTS

Flammable Liquid, category 2	H225	Highly flammable liquid and vapour.
Aspiration Hazard, category 1	H304	May be fatal if swallowed and enters airways.
Skin Irritation, category 2	H315	Causes skin irritation.
Eye Irritation, category 2	H319	Causes serious eye irritation.
STOT, single exposure, category 3, NE	H336	May cause drowsiness or dizziness.
Reproductive Toxicity, category 2	H361	Suspected of damaging fertility or the unborn child.
STOT, repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.

### GHS PRECAUTION PHRASES

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P235	Keep cool.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Wear respiratory protection.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention
P314	Get medical advice/attention if you feel unwell.
P331	Do NOT induce vomiting.
P332+313	If skin irritation occurs: Get medical advice/attention.
P403+233	Store in a well-ventilated place. Keep container tightly closed.

## 2.3 Other hazards

Not applicable

### Results of PBT and vPvB assessment:

The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

## 3. Composition/Information On Ingredients

### 3.2 Mixtures

#### Hazardous Ingredients

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>%</u>
108-88-3	TOLUENE	75-100
78-93-3	METHYL ETHYL KETONE	10-25

<u>CAS-No.</u>	<u>GHS Symbols</u>	<u>GHS Hazard Statements</u>	<u>M-Factors</u>
108-88-3	GHS02-GHS07-GHS08	H225-315-319-336-361-373	0
78-93-3	GHS02-GHS07	H225-319-336	0

Additional Information: The text for GHS Hazard Statements shown above (if any) is given in Section 16.

## 4. First-aid Measures

### 4.1 Description of First Aid Measures

**AFTER INHALATION:** Give oxygen or artificial respiration if needed. Remove person to fresh air. If signs/symptoms continue, get medical attention.

**AFTER SKIN CONTACT:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If skin irritation persists, call a physician.

**AFTER EYE CONTACT:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**AFTER INGESTION:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, call a poison control centre or doctor immediately.

### 4.2 Most important symptoms and effects, both acute and delayed

Harmful if swallowed. Irritating to eyes and skin. Risk of serious damage to the lungs (by aspiration). Vapours may cause drowsiness and dizziness.

### 4.3 Indication of any immediate medical attention and special treatment needed

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.

## 5. Fire-fighting Measures

### 5.1 Extinguishing Media:

Carbon Dioxide, Dry Chemical, Foam, Water Fog

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Flammable liquid. Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. Provide adequate ventilation. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Electrical installations / working materials must comply with the technological safety standards. Wear shoes with conductive soles.

### 5.2 Special hazards arising from the substance or mixture

No Information

### 5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. Cool containers / tanks with water spray. Flammable.

## 6. Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. Evacuate personnel to safe areas. Remove all sources of ignition. To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. Wear personal protective equipment.

### 6.2 Environmental precautions

Do not allow material to contaminate ground water system. Prevent product from entering drains.

### 6.3 Methods and material for containment and cleaning up

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Contain spillage, soak up with

non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

#### 6.4 Reference to other sections

Please refer to disposal requirements or country specific disposal requirements for this material. See Section 13 for further information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**INSTRUCTIONS FOR SAFE HANDLING :** Keep containers dry and tightly closed to avoid moisture absorption and contamination. Prepare the working solution as given on the label(s) and/or the user instructions. Do not breathe vapours or spray mist. Ensure all equipment is electrically grounded before beginning transfer operations. Do not use sparking tools. Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation/personal protection.

**PROTECTION AND HYGIENE MEASURES :** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke.

### 7.2 Conditions for safe storage, including any incompatibilities

**CONDITIONS TO AVOID:** Heat, flames and sparks.

**STORAGE CONDITIONS:** Keep container closed when not in use. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.

### 7.3 Specific end use(s)

No specific advice for end use available.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

#### Ingredients with Occupational Exposure Limits (US)

Name	%	ACGIH TLV- TWA	ACGIH TLV- STEL	OSHA PEL- TWA	OSHA PEL- CEILING	OEL Note
TOLUENE	75-100	20 PPM	N/E	375 MGM3	N/E	
METHYL ETHYL KETONE	10-25	200 PPM	300 PPM	590 MGM3	N/E	

**FURTHER INFORMATION:** Refer to the regulatory exposure limits for the workforce enforced in each country.

### 8.2 Exposure controls

#### Personal Protection

**RESPIRATORY PROTECTION:** In order to avoid inhalation of spray-mist and sanding dust, all spraying and sanding must be done wearing adequate respirator. Use only with ventilation to keep levels below exposure guidelines reported in this document. User should test and monitor exposure levels to ensure all personnel are below guidelines. If not sure, or not able to monitor, use State or federally approved supplied air respirator. For silica containing coatings in a liquid state, and/or if no exposure limits are established above, air-supplied respirators are generally not required.

**EYE PROTECTION:** Safety glasses with side-shields.

**HAND PROTECTION:** Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Impervious gloves Request information on glove permeation properties from the glove supplier.

**OTHER PROTECTIVE EQUIPMENT:** Ensure that eyewash stations and safety showers are close to the workstation location. Lightweight protective clothing

**ENGINEERING CONTROLS:** Avoid contact with skin, eyes and clothing. Ensure adequate ventilation, especially in confined areas.

## 9. Physical and Chemical Properties



**9.1 Information on basic physical and chemical properties**

Appearance:	Clear Liquid
Physical State	Liquid
Odor	Solvent
Odor threshold	N/D
pH	N/D
Melting point / freezing point (°C)	N/D
Boiling point/range (°C)	173 F (78 C) - 232 F (111 C)
Flash Point, (°C)	-4
Evaporation rate	Slower Than Ether
Flammability (solid, gas)	Not determined
Upper/lower flammability or explosive limits	1.3 - 10.1
Vapour Pressure, mmHg	36.3
Vapour density	Heavier than Air
Relative density	Not determined
Solubility in / Miscibility with water	N/D
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature (°C)	Not determined
Decomposition temperature (°C)	Not determined
Viscosity	Unknown
Explosive properties	Not determined
Oxidising properties	Not determined

**9.2 Other Information**

VOC Content g/l:	850
Specific Gravity (g/cm <sup>3</sup> )	0.85

**10. Stability and Reactivity****10.1 Reactivity**

No reactivity hazards known under normal storage and use conditions.

**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

Hazardous polymerisation does not occur.

**10.4 Conditions to avoid**

Heat, flames and sparks.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

#### Acute Toxicity:

Oral LD50: N/D

Inhalation LC50: N/D

Irritation: Unknown

Corrosivity: Unknown

Sensitization: Unknown

Repeated dose toxicity: Unknown

Carcinogenicity: Unknown

Mutagenicity: Unknown

Toxicity for reproduction: Unknown

If no information is available above under Acute Toxicity then the acute effects of this product have not been tested. Data on individual components are tabulated below:

CAS-No.	Chemical Name	Oral LD50	Dermal LD50	Vapor LC50
108-88-3	TOLUENE	5000 mg/kg rat oral	12267 mg/kg, dermal, rabbit	8000 ppm/4 hrs, rat, inhalation
78-93-3	METHYL ETHYL KETONE	2194 mg/kg rat, oral		34.5 mg/L/ 4 hour rat, inhalation

#### Additional Information:

Harmful if swallowed. Irritating to eyes and skin. Risk of serious damage to the lungs (by aspiration). Vapours may cause drowsiness and dizziness.

## 12. Ecological Information

### 12.1 Toxicity:

EC50 48hr (Daphnia): Unknown

IC50 72hr (Algae): Unknown

LC50 96hr (fish): Unknown

12.2 Persistence and degradability: Unknown

12.3 Bioaccumulative potential: Unknown

12.4 Mobility in soil: Unknown

12.5 Results of PBT and vPvB assessment: The product does not meet the criteria for PBT/vPvB in accordance with Annex XIII.

12.6 Other adverse effects: Unknown

CAS-No.	Chemical Name	EC50 48hr	IC50 72hr	LC50 96hr
108-88-3	TOLUENE	6 mg/l (Daphnia magna)	12.5 mg/L (Algae)	5.8 mg/L (Fish)
78-93-3	METHYL ETHYL KETONE	308 mg/l (Daphnia magna)	No information	2993 mg/l (Pimephales promelas)

### 13. Disposal Considerations

13.1 **WASTE TREATMENT METHODS:** Do not burn, or use a cutting torch on, the empty drum. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport Information

14.1 UN number	UN1263
14.2 UN proper shipping name	Paint Related Material
Technical name	N/A
14.3 Transport hazard class(es)	3
Subsidiary shipping hazard	N/A
14.4 Packing group	II
14.5 Environmental hazards	Unknown
14.6 Special precautions for user	Unknown
EmS-No.:	F-E, S-E
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code	Unknown

### 15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation for the substance or mixture:

#### U.S. Federal Regulations: As follows -

##### CERCLA - Sara Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

##### Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS-No.
TOLUENE	108-88-3

##### Toxic Substances Control Act:

All components of this product are either listed on the TSCA Inventory or are exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA 12(b) components exist in this product.

**U.S. State Regulations: As follows -**

**New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

No NJ Right-To-Know components exist in this product.

**Pennsylvania Right-To-Know**

The following non-hazardous ingredients are present in the product at greater than 3%.

No PA Right-To-Know components exist in this product.

**California Proposition 65:**

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

No Proposition 65 Carcinogens exist in this product.

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards.

<u>Chemical Name</u>	<u>CAS-No.</u>
TOLUENE	108-88-3

**International Regulations: As follows -**

**\* Canadian DSL:**

No Information

**15.2 Chemical Safety Assessment:**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**16. Other Information**

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

**Reasons for revision**

No Information

No Information

Carboline Thinner No. 25

By

Carboline



**Safety Data Sheet**  
prepared to UN GHS Revision 3

## 1. Identification of the Substance/Mixture and the Company/Undertaking

- 1.1 **Product Identifier** 0525S1NL
- Product Name:** THINNER 25 **Revision Date:** 06/18/2015
- Relevant identified uses of the substance or mixture and uses advised against** Thinner for industrial coatings - **Supercedes Date:** 05/30/2015  
Industrial use
- 1.3 **Details of the supplier of the safety data sheet**
- Manufacturer:** Carboline Company  
2150 Schuetz Road  
St. Louis, MO USA 63146
- Regulatory / Technical Information:**  
Contact Carboline Technical Services at  
1-800-848-4645
- Datasheet Produced by:** Schlereth, Ken - ehs@stoncor.com
- 1.4 **Emergency telephone number:** CHEMTREC 1-800-424-9300 (Inside US)  
CHEMTREC +1 703 5273887 (Outside US)  
HEALTH - Pittsburgh Poison Control 1-412-681-6669

## 2. Hazard Identification

### 2.1 Classification of the substance or mixture

Hazardous to the aquatic environment, Chronic, category 3  
 Eye Irritation, category 2  
 Flammable Liquid, category 3  
 STOT, repeated exposure, category 2  
 STOT, single exposure, category 3, RTI  
 Skin Irritation, category 2

## 2.2 Label elements

### Symbol(s) of Product



### Signal Word

Warning

### Named Chemicals on Label

1,2,4 TRIMETHYLBENZENE, CUMENE, ETHYL BENZENE, 1,3,5-TRIMETHYLBENZENE, XYLENE, TRIMETHYLBENZENE

### GHS HAZARD STATEMENTS

Flammable Liquid, category 3	H226	Flammable liquid and vapour.
Skin Irritation, category 2	H315	Causes skin irritation.
Eye Irritation, category 2	H319	Causes serious eye irritation.
STOT, single exposure, category 3, RT1	H335	May cause respiratory irritation.
STOT, repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.
Hazardous to the aquatic environment, Chronic, category 3	H412	Harmful to aquatic life with long lasting effects.

### GHS PRECAUTION PHRASES

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P314	Get medical advice/attention if you feel unwell.
P332+313	If skin irritation occurs: Get medical advice/attention.
P403+233	Store in a well-ventilated place. Keep container tightly closed.

## 2.3 Other hazards

Not applicable

### Results of PBT and vPvB assessment:

The product does not meet the criteria for PBT/vPvB in accordance with Annex XIII.

## 3. Composition/Information On Ingredients

### 3.2 Mixtures

#### Hazardous Ingredients

CAS-No.	Chemical Name	%
1330-20-7	XYLENE	25-50
108-65-6	1-METHOXY-2-PROPANOL ACETATE	10-25
64742-95-6	AROMATIC HYDROCARBON	10-25
100-41-4	ETHYL BENZENE	10-25
95-63-6	1,2,4 TRIMETHYLBENZENE	2.5-10

98-82-8 CUMENE  
 25551-13-7 TRIMETHYLBENZENE  
 108-67-8 1,3,5-TRIMETHYLBENZENE

2.5-10  
 2.5-10  
 2.5-10

CAS-No.	GHS Symbols	GHS Hazard Statements	M-Factors
1330-20-7	GHS02-GHS07	H226-312-315-319-332-335	0
108-65-6	GHS02	H226	0
64742-95-6	GHS02-GHS08-GHS09	H226-411	0
100-41-4	GHS02-GHS07-GHS08	H225-332-373-412	0
98-82-8	GHS02-GHS07-GHS08-GHS09	H226-335-411	0
95-63-6	GHS02-GHS07-GHS09	H226-315-319-332-335-411	0
108-67-8	GHS02-GHS07	H226-335	0
25551-13-7	GHS02-GHS07-GHS09	H226-315-319-332-335-336-411	0

Additional Information: The text for GHS Hazard Statements shown above (if any) is given in Section 16.

## 4. First-aid Measures

### 4.1 Description of First Aid Measures

**AFTER INHALATION:** Give oxygen or artificial respiration if needed. Remove person to fresh air. If signs/symptoms continue, get medical attention.

**AFTER SKIN CONTACT:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If skin irritation persists, call a physician.

**AFTER EYE CONTACT:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**AFTER INGESTION:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, call a poison control centre or doctor immediately.

### 4.2 Most important symptoms and effects, both acute and delayed

Harmful if swallowed. Irritating to eyes and skin. Risk of serious damage to the lungs (by aspiration). Vapours may cause drowsiness and dizziness.

### 4.3 Indication of any immediate medical attention and special treatment needed

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.

## 5. Fire-fighting Measures

### 5.1 Extinguishing Media:

Carbon Dioxide, Dry Chemical, Foam, Water Fog

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Flammable liquid. Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. Provide adequate ventilation. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Electrical installations / working materials must comply with the technological safety standards. Wear shoes with conductive soles.

### 5.2 Special hazards arising from the substance or mixture

No Information

### 5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. Cool containers / tanks with water spray. Flammable.

## 6. Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. Evacuate personnel to safe areas. Remove all sources of ignition. To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. Wear personal protective equipment.



**6.2 Environmental precautions**

Do not allow material to contaminate ground water system. Prevent product from entering drains.

**6.3 Methods and material for containment and cleaning up**

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

**6.4 Reference to other sections**

Please refer to disposal requirements or country specific disposal requirements for this material. See Section 13 for further information.

**7. Handling and Storage****7.1 Precautions for safe handling**

**INSTRUCTIONS FOR SAFE HANDLING :** Keep containers dry and tightly closed to avoid moisture absorption and contamination. Prepare the working solution as given on the label(s) and/or the user instructions. Do not breathe vapours or spray mist. Ensure all equipment is electrically grounded before beginning transfer operations. Do not use sparking tools. Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation/personal protection.

**PROTECTION AND HYGIENE MEASURES :** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke.

**7.2 Conditions for safe storage, including any incompatibilities**

**CONDITIONS TO AVOID:** Heat, flames and sparks.

**STORAGE CONDITIONS:** Keep container closed when not in use. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.

**7.3 Specific end use(s)**

No specific advice for end use available.

**8. Exposure Controls/Personal Protection****8.1 Control parameters**

Ingredients with Occupational Exposure Limits (US)

Name	%	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING	OEL Note
XYLENE	25-50	100 PPM	150 PPM	435 MGM3	N/E	
1-METHOXY-2-PROPANOL ACETATE	10-25	N/E	N/E	N/E	N/E	
AROMATIC HYDROCARBON	10-25	N/E	N/E	N/E	N/E	
ETHYL BENZENE	10-25	20 PPM	N/E	435 MGM3	N/E	
1,2,4 TRIMETHYLBENZENE	2.5-10	25 PPM	N/E	125 MGM3	N/E	
CUMENE	2.5-10	50 PPM	N/E	245 MG/M3	N/E	
TRIMETHYLBENZENE	2.5-10	25 PPM	N/E	125 MGM3	N/E	
1,3,5-TRIMETHYLBENZENE	2.5-10	25 PPM	N/E	125 MGM3	N/E	

**FURTHER INFORMATION:** Refer to the regulatory exposure limits for the workforce enforced in each country.

**8.2 Exposure controls****Personal Protection**

**RESPIRATORY PROTECTION:** In order to avoid inhalation of spray-mist and sanding dust, all spraying and sanding must be done wearing adequate respirator. Use only with ventilation to keep levels below exposure guidelines reported in this

document. User should test and monitor exposure levels to ensure all personnel are below guidelines. If not sure, or not able to monitor, use State or federally approved supplied air respirator. For silica containing coatings in a liquid state, and/or if no exposure limits are established above, air-supplied respirators are generally not required.

**EYE PROTECTION:** Safety glasses with side-shields.

**HAND PROTECTION:** Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Impervious gloves Request information on glove permeation properties from the glove supplier.

**OTHER PROTECTIVE EQUIPMENT:** Ensure that eyewash stations and safety showers are close to the workstation location. Lightweight protective clothing

**ENGINEERING CONTROLS:** Avoid contact with skin, eyes and clothing. Ensure adequate ventilation, especially in confined areas.

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

Appearance:	Clear Liquid
Physical State	Liquid
Odor	Ester
Odor threshold	N/D
pH	N/D
Melting point / freezing point (°C)	N/D
Boiling point/range (°C)	284 F (140C) - 334 F (168 C)
Flash Point, (°C)	27
Evaporation rate	Slower Than Ether
Flammability (solid, gas)	Not determined
Upper/lower flammability or explosive limits	1.2 - 7.1
Vapour Pressure, mmHg	4.5 mmHg @ 20C
Vapour density	Heavier than Air
Relative density	Not determined
Solubility in / Miscibility with water	N/D
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature (°C)	Not determined
Decomposition temperature (°C)	Not determined
Viscosity	Unknown
Explosive properties	Not determined
Oxidising properties	Not determined

### 9.2 Other information

VOC Content g/l:	892
Specific Gravity (g/cm <sup>3</sup> )	0.89

## 10. Stability and Reactivity

### 10.1 Reactivity

No reactivity hazards known under normal storage and use conditions.

#### 10.2 Chemical stability

Stable under normal conditions.

#### 10.3 Possibility of hazardous reactions

Hazardous polymerisation does not occur.

#### 10.4 Conditions to avoid

Heat, flames and sparks.

#### 10.5 Incompatible materials

Strong oxidizing agents.

#### 10.6 Hazardous decomposition products

Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

#### Acute Toxicity:

Oral LD50: N/D

Inhalation LC50: N/D

Irritation: Unknown

Corrosivity: Unknown

Sensitization: Unknown

Repeated dose toxicity: Unknown

Carcinogenicity: Unknown

Mutagenicity: Unknown

Toxicity for reproduction: Unknown

If no information is available above under Acute Toxicity then the acute effects of this product have not been tested.  
Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
1330-20-7	XYLENE	4300 mg/kg, rat, oral		15000 ppm/4 hrs rat, inhalation
108-65-6	1-METHOXY-2-PROPANOL ACETATE	8532 mg/kg, oral (rat)	>5000 mg/kg	101 ppm/4 hr, rat, inh
64742-95-6	AROMATIC HYDROCARBON	4700 mg/kg, oral, rat		3670 ppm/8 hours, rat, inhalation
100-41-4	ETHYL BENZENE	3500 mg/kg rat, oral	>5000 mg/l, dermal rabbit	17.2 mg/L Inh, Rat, 4Hr
98-82-8	CUMENE	2910 mg/kg, oral, rat	12300 MG/KG (RABBIT)	8000 ppm / 4 hours
95-63-6	1,2,4 TRIMETHYLBENZENE	6000 mg/kg, oral, rat		18000 mg / m <sup>3</sup> / 4 hours
108-67-8	1,3,5-TRIMETHYLBENZENE	Not Available		Not Available

25551-13-7 TRIMETHYLBENZENE

NE

NE

**Additional Information:**

Harmful if swallowed. Irritating to eyes and skin. Risk of serious damage to the lungs (by aspiration). Vapours may cause drowsiness and dizziness.

## 12. Ecological Information

**12.1 Toxicity:**

EC50 48hr (Daphnia):	Unknown
IC50 72hr (Algae):	Unknown
LC50 96hr (fish):	Unknown

**12.2 Persistence and degradability:** Unknown

**12.3 Bioaccumulative potential:** Unknown

**12.4 Mobility in soil:** Unknown

**12.5 Results of PBT and vPvB assessment:** The product does not meet the criteria for PBT/vPvB in accordance with Annex XIII.

**12.6 Other adverse effects:** Unknown

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>EC50 48hr</u>	<u>IC50 72hr</u>	<u>LC50 96hr</u>
1330-20-7	XYLENE	No information	No information	No information
108-65-6	1-METHOXY-2-PROPANOL ACETATE	No information	No information	No information
64742-95-6	AROMATIC HYDROCARBON	No information	No information	No information
100-41-4	ETHYL BENZENE	No information	No information	No information
95-63-6	1,2,4 TRIMETHYLBENZENE	No information	No information	No information
98-82-8	CUMENE	No information	No information	6/32 mg/l (Fish)
25551-13-7	TRIMETHYLBENZENE	No information	No information	No information
108-67-8	1,3,5-TRIMETHYLBENZENE	No information	No information	No information

## 13. Disposal Considerations

**13.1 WASTE TREATMENT METHODS:** Do not burn, or use a cutting torch on, the empty drum. If recycling is not practicable, dispose of in compliance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport Information

14.1 UN number	UN 1263
14.2 UN proper shipping name	Paint Related Material
Technical name	N/A
14.3 Transport hazard class(es)	3
Subsidiary shipping hazard	N/A
14.4 Packing group	III
14.5 Environmental hazards	Unknown
14.6 Special precautions for user	Unknown
EmS-No.:	F-E, S-E
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code	Unknown

## 15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation for the substance or mixture:

### U.S. Federal Regulations: As follows -

#### CERCLA - Sara Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

#### Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS-No.</u>
XYLENE	1330-20-7
ETHYL BENZENE	100-41-4
CUMENE	98-82-8
1,2,4 TRIMETHYLBENZENE	95-63-6

#### Toxic Substances Control Act:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA 12(b) components exist in this product.

#### U.S. Clean Air Act:

EPA Coating Category:

EPA VOC Content Limit (g/l):

Product VOC Content (g/l)

Thinning Recommendations:

Application Recommendations:

Harmful if swallowed.

**U.S. State Regulations: As follows -****New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

No NJ Right-To-Know components exist in this product.

**Pennsylvania Right-To-Know**

The following non-hazardous ingredients are present in the product at greater than 3%.

No PA Right-To-Know components exist in this product.

**California Proposition 65:**

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

<u>Chemical Name</u>	<u>CAS-No.</u>
ETHYL BENZENE	100-41-4
CUMENE	98-82-8

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards.

No Proposition 65 Reproductive Toxins exist in this product.

**International Regulations: As follows -****\* Canadian DSL:**

No Information

**15.2 Chemical Safety Assessment:**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**16. Other Information****Text for GHS Hazard Statements shown in Section 3 describing each ingredient:**

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

**Reasons for revision**

No Information

No Information

Black Enamel

By

Sherwin Williams

# MATERIAL SAFETY DATA SHEET

B54B11  
34 00

DATE OF PREPARATION  
Mar 26, 2016

**SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NUMBER**  
B54B11  
**PRODUCT NAME**  
Industrial Enamel, Black  
**MANUFACTURER'S NAME**  
THE SHERWIN-WILLIAMS COMPANY  
101 Prospect Avenue N.W.  
Cleveland, OH 44115

**Telephone Numbers and Websites**

<b>Product Information</b>	(800) 524-5979 www.sherwin-williams.com
<b>Regulatory Information</b>	(216) 566-2902 www.paintdocs.com
<b>Medical Emergency</b>	(216) 566-2917
<b>Transportation Emergency*</b>	(800) 424-9300
<i>*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)</i>	

**SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS**

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
44	64742-88-7	Med. Aliphatic Hydrocarbon Solvent	ACGIH TLV	1.27 mm
			OSHA PEL	
			OSHA PEL	
0.2	100-41-4	Ethylbenzene	ACGIH TLV	7.1 mm
			OSHA PEL	
			OSHA PEL	
2	1333-86-4	Carbon Black	ACGIH TLV	3.5 MG/M3
			OSHA PEL	
			OSHA PEL	

**SECTION 3 — HAZARDS IDENTIFICATION**

**ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.  
EYE or SKIN contact with the product, vapor or spray mist.

**EFFECTS OF OVEREXPOSURE**

**EYES:** Irritation.  
**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

**SIGNS AND SYMPTOMS OF OVEREXPOSURE**

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.  
Redness and itching or burning sensation may indicate eye or excessive skin exposure.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

None generally recognized.

**CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

**HMIS Codes**

<b>Health</b>	2*
<b>Flammability</b>	2
<b>Reactivity</b>	0



## SECTION 4 — FIRST AID MEASURES

- EYES:** Flush eyes with large amounts of water for 15 minutes. Get medical attention.  
**SKIN:** Wash affected area thoroughly with soap and water.  
 Remove contaminated clothing and launder before re-use.  
**INHALATION:** If affected, remove from exposure. Restore breathing. Keep warm and quiet.  
**INGESTION:** Do not induce vomiting. Get medical attention immediately.

## SECTION 5 — FIRE FIGHTING MEASURES

<b>FLASH POINT</b> 101 °F PMCC	<b>LEL</b> 1.0	<b>UEL</b> 6.0	<b>FLAMMABILITY CLASSIFICATION</b> Combustible, Flash above 99 and below 200 °F
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### EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam

### UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

### SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

## SECTION 6 — ACCIDENTAL RELEASE MEASURES

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- Remove with inert absorbent.

## SECTION 7 — HANDLING AND STORAGE

### STORAGE CATEGORY

DOL Storage Class II

### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are COMBUSTIBLE. Keep away from heat and open flame.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

## SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m<sup>3</sup> (total dust), 3 mg/m<sup>3</sup> (respirable fraction), OSHA PEL 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction).

### VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

### PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

### EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

### OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

## SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	8.08 lb/gal	968 g/l
SPECIFIC GRAVITY	0.97	
BOILING POINT	300 - 395 °F	148 - 201 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	56%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	Not Available	
VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)		
	3.66 lb/gal 439 g/l	Less Water and Federally Exempt Solvents
	3.66 lb/gal 439 g/l	Emitted VOC

## SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

## SECTION 11 — TOXICOLOGICAL INFORMATION

### CHRONIC HEALTH HAZARDS

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

Carbon Black is classified by IARC as possibly carcinogenic to humans (group 2B) based on experimental animal data, however, there is insufficient evidence in humans for its carcinogenicity.

### TOXICOLOGY DATA

CAS No.	Ingredient Name			
64742-88-7	Med. Aliphatic Hydrocarbon Solvent	LC50 RAT	4HR	Not Available
		LD50 RAT		>5000 mg/kg
100-41-4	Ethylbenzene	LC50 RAT	4HR	Not Available
		LD50 RAT		3500 mg/kg
1333-86-4	Carbon Black	LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

## SECTION 12 — ECOLOGICAL INFORMATION

### ECOTOXICOLOGICAL INFORMATION

No data available.

## SECTION 13 — DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

**SECTION 14 — TRANSPORT INFORMATION**

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

**US Ground (DOT)**

May be Classed as a Combustible Liquid for U.S. Ground.

UN1263, PAINT, 3, PG III, (ERG#128)

**DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities**

Xylenes (mixed isomers) 100 lb RQ

**Bulk Containers may be Shipped as (check reportable quantities):**

UN1263, PAINT, 3, PG III, (ERG#128)

**Canada (TDG)**

May be Classed as a Combustible Liquid for Canadian Ground.

UN1263, PAINT, 3, PG III, (ERG#128)

**IMO**

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.

UN1263, PAINT, 3, PG III, (38 C c.c.), EmS F-E, S-E

**IMO**

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.

UN1263, PAINT, 3, PG III, (38 C c.c.), EmS F-E, S-E

**IATA/ICAO**

UN1263, PAINT, 3, PG III

**SECTION 15 — REGULATORY INFORMATION****SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION**

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	0.1	

**CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

**TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

**SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

Safety Red Enamel

By

Sherwin Williams

# MATERIAL SAFETY DATA SHEET

B54R38  
19 00

DATE OF PREPARATION  
May 28, 2016

**SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NUMBER**

B54R38

**PRODUCT NAME**

Industrial Enamel, Safety Red

**MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY  
101 W. Prospect Avenue  
Cleveland, OH 44115

**Telephone Numbers and Websites**

<b>Product Information</b>	(800) 524-5979 www.sherwin-williams.com
<b>Regulatory Information</b>	(216) 566-2902 www.paintdocs.com
<b>Medical Emergency</b>	(216) 566-2917
<b>Transportation Emergency*</b>	(800) 424-9300
<i>*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)</i>	

**SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS**

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
42	64742-88-7	Med. Aliphatic Hydrocarbon Solvent		
		ACGIH TLV	100 PPM	1.27 mm
		OSHA PEL	100 PPM	
0.1	100-41-4	Ethylbenzene		
		ACGIH TLV	20 PPM	7.1 mm
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
3	13463-67-7	Titanium Dioxide		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

**SECTION 3 — HAZARDS IDENTIFICATION**

**ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.  
EYE or SKIN contact with the product, vapor or spray mist.

**EFFECTS OF OVEREXPOSURE**

**EYES:** Irritation.  
**SKIN:** Prolonged or repeated exposure may cause irritation.  
**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

**SIGNS AND SYMPTOMS OF OVEREXPOSURE**

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.  
Redness and itching or burning sensation may indicate eye or excessive skin exposure.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

None generally recognized.

**CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

**HMIS Codes**

<b>Health</b>	<b>2*</b>
<b>Flammability</b>	<b>2</b>
<b>Reactivity</b>	<b>0</b>

**SECTION 4 — FIRST AID MEASURES**

- EYES:** Flush eyes with large amounts of water for 15 minutes. Get medical attention.  
**SKIN:** Wash affected area thoroughly with soap and water.  
 Remove contaminated clothing and launder before re-use.  
**INHALATION:** If affected, remove from exposure. Restore breathing. Keep warm and quiet.  
**INGESTION:** Do not induce vomiting. Get medical attention immediately.

**SECTION 5 — FIRE FIGHTING MEASURES**

<b>FLASH POINT</b> 104 °F PMCC	<b>LEL</b> 1.0	<b>UEL</b> 6.0	<b>FLAMMABILITY CLASSIFICATION</b> Combustible, Flash above 99 and below 200 °F
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**EXTINGUISHING MEDIA**

Carbon Dioxide, Dry Chemical, Foam

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

**SPECIAL FIRE FIGHTING PROCEDURES**

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

**SECTION 6 — ACCIDENTAL RELEASE MEASURES****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Remove all sources of ignition. Ventilate the area.

Remove with inert absorbent.

**SECTION 7 — HANDLING AND STORAGE****STORAGE CATEGORY**

DOL Storage Class II

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE**

Contents are COMBUSTIBLE. Keep away from heat and open flame.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally.

Keep out of the reach of children.

**SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION****PRECAUTIONS TO BE TAKEN IN USE**

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m<sup>3</sup> (total dust), 3 mg/m<sup>3</sup> (respirable fraction), OSHA PEL 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction).**VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

**RESPIRATORY PROTECTION**

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

**PROTECTIVE GLOVES**

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

**EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

**OTHER PRECAUTIONS**

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

**SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

PRODUCT WEIGHT	8.28 lb/gal	992 g/l
SPECIFIC GRAVITY	1.00	
BOILING POINT	300 - 395 °F	148 - 201 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	56%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	Not Available	
<b>VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)</b>		
	3.62 lb/gal	434 g/l
	3.62 lb/gal	434 g/l
		Less Water and Federally Exempt Solvents
		Emitted VOC

**SECTION 10 — STABILITY AND REACTIVITY****STABILITY — Stable****CONDITIONS TO AVOID**

None known.

**INCOMPATIBILITY**

None known.

**HAZARDOUS DECOMPOSITION PRODUCTS**

By fire: Carbon Dioxide, Carbon Monoxide

**HAZARDOUS POLYMERIZATION**

Will not occur

**SECTION 11 — TOXICOLOGICAL INFORMATION****CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint."

**TOXICOLOGY DATA**

CAS No.	Ingredient Name			
64742-88-7	Med. Aliphatic Hydrocarbon Solvent	LC50 RAT	4HR	Not Available
		LD50 RAT		>5000 mg/kg
100-41-4	Ethylbenzene	LC50 RAT	4HR	Not Available
		LD50 RAT		3500 mg/kg
13463-67-7	Titanium Dioxide	LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

**SECTION 12 — ECOLOGICAL INFORMATION****ECOTOXICOLOGICAL INFORMATION**

No data available.

**SECTION 13 — DISPOSAL CONSIDERATIONS****WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

## SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

### US Ground (DOT)

May be Classed as a Combustible Liquid for U.S. Ground.  
UN1263, PAINT, 3, PG III, (ERG#128)

### DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Xylenes (mixed isomers) 100 lb RQ

### Bulk Containers may be Shipped as (check reportable quantities):

UN1263, PAINT, 3, PG III, (ERG#128)

### Canada (TDG)

May be Classed as a Combustible Liquid for Canadian Ground.  
UN1263, PAINT, 3, PG III, (ERG#128)

### IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.  
UN1263, PAINT, 3, PG III, (40 C c.c.), EmS F-E, S-E

### IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.  
UN1263, PAINT, 3, PG III, (40 C c.c.), EmS F-E, S-E

### IATA/ICAO

UN1263, PAINT, 3, PG III

## SECTION 15 — REGULATORY INFORMATION

### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	0.1	

### CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

### TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

## SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.



Recoatable Epoxy Primer  
(White)

By

Sherwin Williams

# MATERIAL SAFETY DATA SHEET

B67W45  
08 00

DATE OF PREPARATION  
May 28, 2016

## SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NUMBER**

B67W45

**PRODUCT NAME**

Recoatable Epoxy Primer - Low VOC (Part G), White

**MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY  
101 W. Prospect Avenue  
Cleveland, OH 44115

**Telephone Numbers and Websites**

<b>Product Information</b>	(800) 524-5979 www.sherwin-williams.com
<b>Regulatory Information</b>	(216) 566-2902 www.paintdocs.com
<b>Medical Emergency</b>	(216) 566-2917
<b>Transportation Emergency*</b>	(800) 424-9300
<i>*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)</i>	

## SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
0.6	100-41-4	<b>Ethylbenzene</b>		
		ACGIH TLV	20 PPM	7.1 mm
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
3	1330-20-7	<b>Xylene</b>		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
19	98-56-6	<b>p-Chlorobenzotrifluoride</b>		
		ACGIH TLV	Not Available	5.3 mm
		OSHA PEL	Not Available	
1	67-64-1	<b>Acetone</b>		
		ACGIH TLV	500 PPM	180 mm
		ACGIH TLV	750 PPM STEL	
		OSHA PEL	1000 PPM	
1	90-72-2	<b>Tri(dimethylaminomethyl)phenol</b>		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
7	68410-23-1	<b>Polyamide</b>		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
42	14808-60-7	<b>Quartz</b>		
		ACGIH TLV	0.025 mg/m3 as Resp. Dust	
		OSHA PEL	0.1 mg/m3 as Resp. Dust	
13	13463-67-7	<b>Titanium Dioxide</b>		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	
2	1314-13-2	<b>Zinc Oxide</b>		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	

## SECTION 3 — HAZARDS IDENTIFICATION

**ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.  
 EYE or SKIN contact with the product, vapor or spray mist.

**EFFECTS OF OVEREXPOSURE**

**EYES:** Causes burns.  
**SKIN:** Causes burns.

**INHALATION:** Causes burns of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.  
 Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:

- the liver
- the urinary system
- the reproductive system

**SIGNS AND SYMPTOMS OF OVEREXPOSURE**

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.  
 Redness and itching or burning sensation may indicate eye or excessive skin exposure.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

May cause allergic skin reaction in susceptible persons or skin sensitization.

**CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

**HMIS Codes**

Health	3*
Flammability	3
Reactivity	0

**SECTION 4 — FIRST AID MEASURES**

**EYES:** Flush eyes with large amounts of water for 15 minutes. Get medical attention **IMMEDIATELY**.

**SKIN:** Wash affected area thoroughly with soap and water.  
 If irritation persists or occurs later, get medical attention.  
 Remove contaminated clothing and launder before re-use.

**INHALATION:** If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

**SECTION 5 — FIRE FIGHTING MEASURES**

<b>FLASH POINT</b>	<b>LEL</b>	<b>UEL</b>	<b>FLAMMABILITY CLASSIFICATION</b>
80 °F PMCC	0.9	12.8	RED LABEL -- Flammable, Flash below 100 °F (38 °C)

**EXTINGUISHING MEDIA**

Carbon Dioxide, Dry Chemical, Foam

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.  
 Application to hot surfaces requires special precautions.  
 During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

**SPECIAL FIRE FIGHTING PROCEDURES**

Full protective equipment including self-contained breathing apparatus should be used.  
 Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

**SECTION 6 — ACCIDENTAL RELEASE MEASURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Remove all sources of ignition. Ventilate the area.  
 Remove with inert absorbent.

**SECTION 7 — HANDLING AND STORAGE**

**STORAGE CATEGORY**

DOL Storage Class IC

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE**

Contents are **FLAMMABLE**. Keep away from heat, sparks, and open flame.  
 During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.  
 Consult NFPA Code. Use approved Bonding and Grounding procedures.  
 Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally.  
 Keep out of the reach of children.

**SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION**

**PRECAUTIONS TO BE TAKEN IN USE**

Use only with adequate ventilation.

Do not get in eyes, or on skin or clothing. Do not breathe vapor or spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m<sup>3</sup> (total dust), 3 mg/m<sup>3</sup> (respirable fraction), OSHA PEL 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction).

#### VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

#### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

#### PROTECTIVE GLOVES

To prevent skin contact, wear gloves which are recommended by glove supplier for protection against materials in Section 2.

#### EYE PROTECTION

To prevent eye contact, wear safety spectacles with unperforated sideshields.

#### OTHER PROTECTIVE EQUIPMENT

Use barrier cream on exposed skin.

#### OTHER PRECAUTIONS

This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

### SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	15.34 lb/gal	1837 g/l
SPECIFIC GRAVITY	1.85	
BOILING POINT	132 - 292 °F	55 - 144 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	36%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	Not Available	
VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)		
0.82 lb/gal	98 g/l	Less Water and Federally Exempt Solvents
0.58 lb/gal	70 g/l	Emitted VOC

### SECTION 10 — STABILITY AND REACTIVITY

#### STABILITY — Stable

#### CONDITIONS TO AVOID

None known.

#### INCOMPATIBILITY

None known.

#### HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

#### HAZARDOUS POLYMERIZATION

Will not occur

### SECTION 11 — TOXICOLOGICAL INFORMATION

#### CHRONIC HEALTH HAZARDS

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

Crystalline Silica (Quartz, Cristobalite) is listed by IARC and NTP. Long term exposure to high levels of silica dust, which can occur only when sanding or abrading the dry film, may cause lung damage (silicosis) and possibly cancer.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint."

## TOXICOLOGY DATA

CAS No.	Ingredient Name			
100-41-4	Ethylbenzene	LC50 RAT LD50 RAT	4HR	Not Available 3500 mg/kg
1330-20-7	Xylene	LC50 RAT LD50 RAT	4HR	5000 ppm 4300 mg/kg
98-56-6	p-Chlorobenzotrifluoride	LC50 RAT LD50 RAT	4HR	Not Available Not Available
67-64-1	Acetone	LC50 RAT LD50 RAT	4HR	Not Available 5800 mg/kg
90-72-2	Tri(dimethylaminomethyl)phenol	LC50 RAT LD50 RAT	4HR	Not Available 1653 mg/kg
68410-23-1	Polyamide	LC50 RAT LD50 RAT	4HR	Not Available Not Available
14808-60-7	Quartz	LC50 RAT LD50 RAT	4HR	Not Available Not Available
13463-67-7	Titanium Dioxide	LC50 RAT LD50 RAT	4HR	Not Available Not Available
1314-13-2	Zinc Oxide	LC50 RAT LD50 RAT	4HR	Not Available Not Available

## SECTION 12 — ECOLOGICAL INFORMATION

## ECOTOXICOLOGICAL INFORMATION

No data available.

## SECTION 13 — DISPOSAL CONSIDERATIONS

## WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

## SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

## US Ground (DOT)

5 Liters (1.3 Gallons) and Less may be Classed as LTD. QTY. (PAINT OR RELATED).

Larger Containers are Regulated as:

UN1263, PAINT, 3, PG III, (ERG#128)

## DOT (Dept of Transportation) Hazardous Substances &amp; Reportable Quantities

Xylenes (mixed isomers) 100 lb RQ

## Bulk Containers may be Shipped as (check reportable quantities):

RQ, UN1263, PAINT, 3, PG III, (XYLENES (MIXED ISOMERS)), (ERG#128)

## Canada (TDG)

UN1263, PAINT, 3, PG III, LIMITED QUANTITY, (ERG#128)

## IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.

UN1263, PAINT, 3, PG III, (27 C c.c.), EmS F-E, S-E

## IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.

UN1263, PAINT, 3, PG III, (27 C c.c.), EmS F-E, S-E

## IATA/ICAO

UN1263, PAINT, 3, PG III

<b>SECTION 15 — REGULATORY INFORMATION</b>
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**SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION**

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	0.5	
1330-20-7	Xylene	3	
	Zinc Compound	5	3.2

**CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

**TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

<b>SECTION 16 — OTHER INFORMATION</b>
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This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

<p>The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.</p>
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Safety Yellow Enamel

By

Sherwin Williams

# MATERIAL SAFETY DATA SHEET

B54Y37  
22 00

DATE OF PREPARATION  
May 28, 2016

**SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NUMBER**

B54Y37

**PRODUCT NAME**

Industrial Enamel, Safety Yellow

**MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY  
101 W. Prospect Avenue  
Cleveland, OH 44115

**Telephone Numbers and Websites**

<b>Product Information</b>	(800) 524-5979 www.sherwin-williams.com
<b>Regulatory Information</b>	(216) 566-2902 www.paintdocs.com
<b>Medical Emergency</b>	(216) 566-2917
<b>Transportation Emergency*</b>	(800) 424-9300
<i>*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)</i>	

**SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS**

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
41	64742-88-7	<b>Med. Aliphatic Hydrocarbon Solvent</b>		1.27 mm
		ACGIH TLV	100 PPM	
		OSHA PEL	100 PPM	
0.1	100-41-4	<b>Ethylbenzene</b>		7.1 mm
		ACGIH TLV	20 PPM	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
13	13463-67-7	<b>Titanium Dioxide</b>		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

**SECTION 3 — HAZARDS IDENTIFICATION**

**ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.  
EYE or SKIN contact with the product, vapor or spray mist.

**EFFECTS OF OVEREXPOSURE**

**EYES:** Irritation.  
**SKIN:** Prolonged or repeated exposure may cause irritation.  
**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

**SIGNS AND SYMPTOMS OF OVEREXPOSURE**

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.  
Redness and itching or burning sensation may indicate eye or excessive skin exposure.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

None generally recognized.

**CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

**HMIS Codes**

<b>Health</b>	2*
<b>Flammability</b>	2
<b>Reactivity</b>	0



## SECTION 4 — FIRST AID MEASURES

- EYES:** Flush eyes with large amounts of water for 15 minutes. Get medical attention.  
**SKIN:** Wash affected area thoroughly with soap and water.  
 Remove contaminated clothing and launder before re-use.  
**INHALATION:** If affected, remove from exposure. Restore breathing. Keep warm and quiet.  
**INGESTION:** Do not induce vomiting. Get medical attention immediately.

## SECTION 5 — FIRE FIGHTING MEASURES

<b>FLASH POINT</b> 101 °F PMCC	<b>LEL</b> 1.0	<b>UEL</b> 6.0	<b>FLAMMABILITY CLASSIFICATION</b> Combustible, Flash above 99 and below 200 °F
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### EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam

### UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

### SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

## SECTION 6 — ACCIDENTAL RELEASE MEASURES

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- Remove with inert absorbent.

## SECTION 7 — HANDLING AND STORAGE

### STORAGE CATEGORY

DOL Storage Class II

### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are COMBUSTIBLE. Keep away from heat and open flame.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

## SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m<sup>3</sup> (total dust), 3 mg/m<sup>3</sup> (respirable fraction), OSHA PEL 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction).

### VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

### PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

### EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

### OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

## SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	8.63 lb/gal	1034 g/l
SPECIFIC GRAVITY	1.04	
BOILING POINT	300 - 395 °F	148 - 201 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	57%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	Not Available	
VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)		
	3.71 lb/gal	445 g/l
	3.71 lb/gal	445 g/l
		Less Water and Federally Exempt Solvents
		Emitted VOC

## SECTION 10 — STABILITY AND REACTIVITY

### STABILITY — Stable

### CONDITIONS TO AVOID

None known.

### INCOMPATIBILITY

None known.

### HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

### HAZARDOUS POLYMERIZATION

Will not occur

## SECTION 11 — TOXICOLOGICAL INFORMATION

### CHRONIC HEALTH HAZARDS

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint."

### TOXICOLOGY DATA

CAS No.	Ingredient Name			
64742-88-7	Med. Aliphatic Hydrocarbon Solvent	LC50 RAT	4HR	Not Available
		LD50 RAT		>5000 mg/kg
100-41-4	Ethylbenzene	LC50 RAT	4HR	Not Available
		LD50 RAT		3500 mg/kg
13463-67-7	Titanium Dioxide	LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

## SECTION 12 — ECOLOGICAL INFORMATION

### ECOTOXICOLOGICAL INFORMATION

No data available.

## SECTION 13 — DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

**SECTION 14 — TRANSPORT INFORMATION**

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

**US Ground (DOT)**

May be Classed as a Combustible Liquid for U.S. Ground.  
 UN1263, PAINT, 3, PG III, (ERG#128)

**DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities**

Xylenes (mixed isomers) 100 lb RQ

**Bulk Containers may be Shipped as (check reportable quantities):**

UN1263, PAINT, 3, PG III, (ERG#128)

**Canada (TDG)**

May be Classed as a Combustible Liquid for Canadian Ground.  
 UN1263, PAINT, 3, PG III, (ERG#128)

**IMO**

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.  
 UN1263, PAINT, 3, PG III, (38 C c.c.), EmS F-E, S-E

**IMO**

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.  
 UN1263, PAINT, 3, PG III, (38 C c.c.), EmS F-E, S-E

**IATA/CAO**

UN1263, PAINT, 3, PG III

**SECTION 15 — REGULATORY INFORMATION**

**SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION**

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	0.1	

**CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

**TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

**SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# MATERIAL SAFETY DATA SHEET

B69V480  
06 00

DATE OF PREPARATION  
Oct 20, 2015

## SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NUMBER

B69V480

### PRODUCT NAME

ZINC CLAD® 3100 Waterbased PCP Primer (Part A)

### MANUFACTURER'S NAME

THE SHERWIN-WILLIAMS COMPANY  
101 Prospect Avenue N.W.  
Cleveland, OH 44115

### Telephone Numbers and Websites

Product Information	(800) 524-5979 www.sherwin-williams.com
Regulatory Information	(216) 566-2902 www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)	

## SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
13	7631-86-9	Amorphous Silica		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	6 mg/m3 as Dust	

## SECTION 3 — HAZARDS IDENTIFICATION

### ROUTES OF EXPOSURE

INHALATION of vapor or spray mist.  
EYE or SKIN contact with the product, vapor or spray mist.

### EFFECTS OF OVEREXPOSURE

EYES: Irritation.  
SKIN: Prolonged or repeated exposure may cause irritation.  
INHALATION: Irritation of the upper respiratory system.

### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

### CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

### HMIS Codes

Health	0
Flammability	0
Reactivity	0

## SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.  
SKIN: Wash affected area thoroughly with soap and water.  
INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.  
INGESTION: Do not induce vomiting. Get medical attention immediately.

## SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL	FLAMMABILITY CLASSIFICATION
Not Applicable	Not Applicable	Not Applicable	Not Applicable
EXTINGUISHING MEDIA	Applicable	Applicable	

Carbon Dioxide, Dry Chemical, Alcohol Foam

#### UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode (due to the build-up of pressure) when exposed to extreme heat.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

### SECTION 6 — ACCIDENTAL RELEASE MEASURES

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Ventilate the area.

Remove with inert absorbent.

### SECTION 7 — HANDLING AND STORAGE

#### STORAGE CATEGORY

Not Applicable

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally.

Keep out of the reach of children.

### SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m<sup>3</sup> (total dust), 3 mg/m<sup>3</sup> (respirable fraction), OSHA PEL 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction).

#### VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

#### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

#### PROTECTIVE GLOVES

Required for long or repeated contact.

#### EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

### SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	9.15 lb/gal	1096 g/l
SPECIFIC GRAVITY	1.10	
BOILING POINT	212 - 213 °F	100 - 100 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	90%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	Not Available	
pH	> 2.0, < 11.5	
VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)		
0.00 lb/gal	0 g/l	Less Water and Federally Exempt Solvents
0.00 lb/gal	0 g/l	Emitted VOC

### SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID

None known.

**INCOMPATIBILITY**

None known.

**HAZARDOUS DECOMPOSITION PRODUCTS**

By fire: Carbon Dioxide, Carbon Monoxide

**HAZARDOUS POLYMERIZATION**

Will not occur

**SECTION 11 — TOXICOLOGICAL INFORMATION****CHRONIC HEALTH HAZARDS**

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

**TOXICOLOGY DATA**

CAS No.	Ingredient Name			
7631-86-9	Amorphous Silica	LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

**SECTION 12 — ECOLOGICAL INFORMATION****ECOTOXICOLOGICAL INFORMATION**

No data available.

**SECTION 13 — DISPOSAL CONSIDERATIONS****WASTE DISPOSAL METHOD**

Waste from this product is not hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

**SECTION 14 — TRANSPORT INFORMATION**

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

**US Ground (DOT)**

Not Regulated for Transportation.

**Canada (TDG)**

Not Regulated for Transportation.

**IMO**

Not Regulated for Transportation.

**IMO**

Not Regulated for Transportation.

**IATA/ICAO**

Not Regulated for Transportation.

**SECTION 15 — REGULATORY INFORMATION****SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION**

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
No ingredients in this product are subject to SARA 313 (40 CFR 372.65C) Supplier Notification.			

**CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

**TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

## SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

Epoxy Hardner  
By  
Sherwin Williams



# MATERIAL SAFETY DATA SHEET

B58V8  
10 00

DATE OF PREPARATION  
Jan 23, 2016

## SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NUMBER**  
B58V8

**PRODUCT NAME**  
STEEL SPEC™ Epoxy Primer (Part B), Hardener

**MANUFACTURER'S NAME**  
THE SHERWIN-WILLIAMS COMPANY  
101 Prospect Avenue N.W.  
Cleveland, OH 44115

**Telephone Numbers and Websites**

<b>Product Information</b>	(800) 524-5979 www.sherwin-williams.com
<b>Regulatory Information</b>	(216) 566-2902 www.paintdocs.com
<b>Medical Emergency</b>	(216) 566-2917
<b>Transportation Emergency*</b>	(800) 424-9300
<i>*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)</i>	

## SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
2	100-41-4	<b>Ethylbenzene</b>		
		ACGIH TLV	20 PPM	7.1 mm
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
9	1330-20-7	<b>Xylene</b>		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
7	110-43-0	<b>Methyl n-Amyl Ketone</b>		
		ACGIH TLV	50 PPM	3.855 mm
		OSHA PEL	100 PPM	
53	14808-60-7	<b>Quartz</b>		
		ACGIH TLV	0.025 mg/m3 as Resp. Dust	
		OSHA PEL	0.1 mg/m3 as Resp. Dust	

## SECTION 3 — HAZARDS IDENTIFICATION

**ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.  
EYE or SKIN contact with the product, vapor or spray mist.

**EFFECTS OF OVEREXPOSURE**

**EYES:** Irritation.  
**SKIN:** Prolonged or repeated exposure may cause irritation.  
**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.  
Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:

- the liver
- the urinary system
- the reproductive system

**SIGNS AND SYMPTOMS OF OVEREXPOSURE**

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.  
Redness and itching or burning sensation may indicate eye or excessive skin exposure.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

May cause allergic skin reaction in susceptible persons or skin sensitization.

**HMIS Codes**

<b>Health</b>	2*
<b>Flammability</b>	3
<b>Reactivity</b>	0

**CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

**SECTION 4 — FIRST AID MEASURES**

**EYES:** Flush eyes with large amounts of water for 15 minutes. Get medical attention.

**SKIN:** Wash affected area thoroughly with soap and water.

If irritation persists or occurs later, get medical attention.

Remove contaminated clothing and launder before re-use.

**INHALATION:** If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

**SECTION 5 — FIRE FIGHTING MEASURES**

<b>FLASH POINT</b>	<b>LEL</b>	<b>UEL</b>	<b>FLAMMABILITY CLASSIFICATION</b>
80 °F PMCC	1.0	7.9	RED LABEL – Flammable, Flash below 100 °F (38 °C)

**EXTINGUISHING MEDIA**

Carbon Dioxide, Dry Chemical, Foam

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

**SPECIAL FIRE FIGHTING PROCEDURES**

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

**SECTION 6 — ACCIDENTAL RELEASE MEASURES****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Remove all sources of ignition. Ventilate the area.

Remove with inert absorbent.

**SECTION 7 — HANDLING AND STORAGE****STORAGE CATEGORY**

DOL Storage Class IC

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE**

Contents are **FLAMMABLE**. Keep away from heat, sparks, and open flame.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally.

Keep out of the reach of children.

**SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION****PRECAUTIONS TO BE TAKEN IN USE**

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m<sup>3</sup> (total dust), 3 mg/m<sup>3</sup> (respirable fraction), OSHA PEL 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction).

**VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

**RESPIRATORY PROTECTION**

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

**PROTECTIVE GLOVES**

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

**EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

**OTHER PROTECTIVE EQUIPMENT**

Use of barrier cream on exposed skin is recommended.

**OTHER PRECAUTIONS**

This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

**SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

<b>PRODUCT WEIGHT</b>	12.69 lb/gal	1521 g/l
<b>SPECIFIC GRAVITY</b>	1.53	
<b>BOILING POINT</b>	277 - 308 °F	136 - 153 °C
<b>MELTING POINT</b>	Not Available	
<b>VOLATILE VOLUME</b>	31%	
<b>EVAPORATION RATE</b>	Slower than ether	
<b>VAPOR DENSITY</b>	Heavier than air	
<b>SOLUBILITY IN WATER</b>	Not Available	
<b>VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)</b>		
	2.19 lb/gal	262 g/l
	Less Water and Federally Exempt Solvents	
	2.19 lb/gal	262 g/l
	Emitted VOC	

**SECTION 10 — STABILITY AND REACTIVITY****STABILITY — Stable****CONDITIONS TO AVOID**

None known.

**INCOMPATIBILITY**

None known.

**HAZARDOUS DECOMPOSITION PRODUCTS**

By fire: Carbon Dioxide, Carbon Monoxide

**HAZARDOUS POLYMERIZATION**

Will not occur

**SECTION 11 — TOXICOLOGICAL INFORMATION****CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

Crystalline Silica (Quartz, Cristobalite) is listed by IARC and NTP. Long term exposure to high levels of silica dust, which can occur only when sanding or abrading the dry film, may cause lung damage (silicosis) and possibly cancer.

**TOXICOLOGY DATA**

CAS No.	Ingredient Name			
100-41-4	Ethylbenzene	LC50 RAT	4HR	Not Available
		LD50 RAT		3500 mg/kg
1330-20-7	Xylene	LC50 RAT	4HR	5000 ppm
		LD50 RAT		4300 mg/kg
110-43-0	Methyl n-Amyl Ketone	LC50 RAT	4HR	Not Available
		LD50 RAT		1670 mg/kg
14808-60-7	Quartz	LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

**SECTION 12 — ECOLOGICAL INFORMATION****ECOTOXICOLOGICAL INFORMATION**

No data available.

**SECTION 13 — DISPOSAL CONSIDERATIONS****WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers. Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

## SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

### US Ground (DOT)

5 Liters (1.3 Gallons) and Less may be Classed as LTD. QTY. (PAINT OR RELATED).

Larger Containers are Regulated as:

UN1263, PAINT, 3, PG III, (ERG#128)

### DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Xylenes (mixed isomers) 100 lb RQ

### Bulk Containers may be Shipped as (check reportable quantities):

RQ, UN1263, PAINT, 3, PG III, (XYLENES (MIXED ISOMERS)), (ERG#128)

### Canada (TDG)

UN1263, PAINT, 3, PG III, LIMITED QUANTITY, (ERG#128)

### IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.

UN1263, PAINT, 3, PG III, (27 C c.c.), EmS F-E, S-E

### IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.

UN1263, PAINT, 3, PG III, (27 C c.c.), EmS F-E, S-E

### IATA/ICAO

UN1263, PAINT, 3, PG III

## SECTION 15 — REGULATORY INFORMATION

### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	2	
1330-20-7	Xylene	9	

### CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

### TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

## SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

Epoxy Primer (A), Red Oxide

By

Sherwin Williams

# MATERIAL SAFETY DATA SHEET

B58R8  
11 00

DATE OF PREPARATION  
May 28, 2016

## SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NUMBER**

B58R8

**PRODUCT NAME**

STEEL SPEC™ Epoxy Primer (Part A), Red Oxide

**MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY  
101 W. Prospect Avenue  
Cleveland, OH 44115

**Telephone Numbers and Websites**

<b>Product Information</b>	(800) 524-5979 www.sherwin-williams.com
<b>Regulatory Information</b>	(216) 566-2902 www.paintdocs.com
<b>Medical Emergency</b>	(216) 566-2917
<b>Transportation Emergency*</b>	(800) 424-9300
<small>*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)</small>	

## SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
3	100-41-4	<b>Ethylbenzene</b>		
		ACGIH TLV	20 PPM	7.1 mm
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
17	1330-20-7	<b>Xylene</b>		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
3	110-43-0	<b>Methyl n-Amyl Ketone</b>		
		ACGIH TLV	50 PPM	3.855 mm
		OSHA PEL	100 PPM	
1	90-72-2	<b>Tri(dimethylaminomethyl)phenol</b>		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
8	68410-23-1	<b>Polyamide</b>		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
27	14808-60-7	<b>Quartz</b>		
		ACGIH TLV	0.025 mg/m3 as Resp. Dust	
		OSHA PEL	0.1 mg/m3 as Resp. Dust	
17	12001-26-2	<b>Mica</b>		
		ACGIH TLV	3 mg/m3 as Resp. Dust	
		OSHA PEL	3 mg/m3 as Resp. Dust	
5	1317-65-3	<b>Calcium Carbonate</b>		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

## SECTION 3 — HAZARDS IDENTIFICATION

**ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.  
EYE or SKIN contact with the product, vapor or spray mist.

**HMIS Codes**

<b>Health</b>	<b>3*</b>
<b>Flammability</b>	<b>3</b>
<b>Reactivity</b>	<b>0</b>

**EFFECTS OF OVEREXPOSURE****EYES:** Causes burns.**SKIN:** Causes burns.**INHALATION:** Causes burns of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:

- the liver
- the urinary system
- the reproductive system

**SIGNS AND SYMPTOMS OF OVEREXPOSURE**

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

May cause allergic skin reaction in susceptible persons or skin sensitization.

**CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

**SECTION 4 — FIRST AID MEASURES****EYES:** Flush eyes with large amounts of water for 15 minutes. Get medical attention **IMMEDIATELY**.**SKIN:** Wash affected area thoroughly with soap and water.

If irritation persists or occurs later, get medical attention.

Remove contaminated clothing and launder before re-use.

**INHALATION:** If affected, remove from exposure. Restore breathing. Keep warm and quiet.**INGESTION:** Do not induce vomiting. Get medical attention immediately.**SECTION 5 — FIRE FIGHTING MEASURES****FLASH POINT**

80 °F PMCC

**LEL**

1.0

**UEL**

7.9

**FLAMMABILITY CLASSIFICATION**

RED LABEL -- Flammable, Flash below 100 °F (38 °C)

**EXTINGUISHING MEDIA**

Carbon Dioxide, Dry Chemical, Foam

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

**SPECIAL FIRE FIGHTING PROCEDURES**

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

**SECTION 6 — ACCIDENTAL RELEASE MEASURES****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Remove all sources of ignition. Ventilate the area.

Remove with inert absorbent.

**SECTION 7 — HANDLING AND STORAGE****STORAGE CATEGORY**

DOL Storage Class IC

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE**

Contents are **FLAMMABLE**. Keep away from heat, sparks, and open flame.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally.

Keep out of the reach of children.

**SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION****PRECAUTIONS TO BE TAKEN IN USE**

Use only with adequate ventilation.

Do not get in eyes, or on skin or clothing. Do not breathe vapor or spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m<sup>3</sup> (total dust), 3 mg/m<sup>3</sup> (respirable fraction), OSHA PEL 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction).

**VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

**RESPIRATORY PROTECTION**

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

**PROTECTIVE GLOVES**

To prevent skin contact, wear gloves which are recommended by glove supplier for protection against materials in Section 2.

**EYE PROTECTION**

To prevent eye contact, wear safety spectacles with unperforated sideshields.

**OTHER PROTECTIVE EQUIPMENT**

Use barrier cream on exposed skin.

**OTHER PRECAUTIONS**

This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

## SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

<b>PRODUCT WEIGHT</b>	12.57 lb/gal	1506 g/l
<b>SPECIFIC GRAVITY</b>	1.51	
<b>BOILING POINT</b>	277 - 308 °F	136 - 153 °C
<b>MELTING POINT</b>	Not Available	
<b>VOLATILE VOLUME</b>	40%	
<b>EVAPORATION RATE</b>	Slower than ether	
<b>VAPOR DENSITY</b>	Heavier than air	
<b>SOLUBILITY IN WATER</b>	Not Available	
<b>VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)</b>		
2.90 lb/gal	348 g/l	Less Water and Federally Exempt Solvents
2.90 lb/gal	347 g/l	Emitted VOC

## SECTION 10 — STABILITY AND REACTIVITY

**STABILITY — Stable****CONDITIONS TO AVOID**

None known.

**INCOMPATIBILITY**

None known.

**HAZARDOUS DECOMPOSITION PRODUCTS**

By fire: Carbon Dioxide, Carbon Monoxide

**HAZARDOUS POLYMERIZATION**

Will not occur

## SECTION 11 — TOXICOLOGICAL INFORMATION

**CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

Crystalline Silica (Quartz, Cristobalite) is listed by IARC and NTP. Long term exposure to high levels of silica dust, which can occur only when sanding or abrading the dry film, may cause lung damage (silicosis) and possibly cancer.



## TOXICOLOGY DATA

CAS No.	Ingredient Name			
100-41-4	Ethylbenzene	LC50 RAT LD50 RAT	4HR	Not Available 3500 mg/kg
1330-20-7	Xylene	LC50 RAT LD50 RAT	4HR	5000 ppm 4300 mg/kg
110-43-0	Methyl n-Amyl Ketone	LC50 RAT LD50 RAT	4HR	Not Available 1670 mg/kg
90-72-2	Tri(dimethylaminomethyl)phenol	LC50 RAT LD50 RAT	4HR	Not Available 1653 mg/kg
68410-23-1	Polyamide	LC50 RAT LD50 RAT	4HR	Not Available Not Available
14808-60-7	Quartz	LC50 RAT LD50 RAT	4HR	Not Available Not Available
12001-26-2	Mica	LC50 RAT LD50 RAT	4HR	Not Available Not Available
1317-65-3	Calcium Carbonate	LC50 RAT LD50 RAT	4HR	Not Available Not Available

## SECTION 12 — ECOLOGICAL INFORMATION

## ECOTOXICOLOGICAL INFORMATION

No data available.

## SECTION 13 — DISPOSAL CONSIDERATIONS

## WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

## SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

## US Ground (DOT)

5 Liters (1.3 Gallons) and Less may be Classed as LTD. QTY. (PAINT OR RELATED).

Larger Containers are Regulated as:

UN1263, PAINT, 3, PG III, (ERG#128)

## DOT (Dept of Transportation) Hazardous Substances &amp; Reportable Quantities

Ethylbenzene 1000 lb RQ

Xylenes (mixed isomers) 100 lb RQ

## Bulk Containers may be Shipped as (check reportable quantities):

RQ, UN1263, PAINT, 3, PG III, (XYLENES (MIXED ISOMERS)), (ERG#128)

## Canada (TDG)

UN1263, PAINT, 3, PG III, LIMITED QUANTITY, (ERG#128)

## IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.

UN1263, PAINT, 3, PG III, (27 C c.c.), EmS F-E, S-E

## IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.

UN1263, PAINT, 3, PG III, (27 C c.c.), EmS F-E, S-E

## IATA/ICAO

UN1263, PAINT, 3, PG III

**SECTION 15 — REGULATORY INFORMATION****SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION**

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	3	
1330-20-7	Xylene	17	

**CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

**TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

**SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

Reducer No. 15

By

Sherwin Williams

# MATERIAL SAFETY DATA SHEET

R7K15  
04 00

DATE OF PREPARATION  
Nov 29, 2015

**SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NUMBER**

R7K15

**PRODUCT NAME**

Reducer No. 15

**MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY  
101 Prospect Avenue N.W.  
Cleveland, OH 44115

**Telephone Numbers and Websites**

<b>Product Information</b>	(800) 524-5979 www.sherwin-williams.com
<b>Regulatory Information</b>	(216) 566-2902 www.paintdocs.com
<b>Medical Emergency</b>	(216) 566-2917
<b>Transportation Emergency*</b>	(800) 424-9300
<i>*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)</i>	

**SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS**

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure	
8	100-41-4	Ethylbenzene	ACGIH TLV	20 PPM	7.1 mm
			OSHA PEL	100 PPM	
			OSHA PEL	125 PPM STEL	
44	1330-20-7	Xylene	ACGIH TLV	100 PPM	5.9 mm
			ACGIH TLV	150 PPM STEL	
			OSHA PEL	100 PPM	
			OSHA PEL	150 PPM STEL	
48	108-10-1	Methyl Isobutyl Ketone	ACGIH TLV	50 PPM	16 mm
			ACGIH TLV	75 PPM STEL	
			OSHA PEL	50 PPM	
			OSHA PEL	75 PPM STEL	

**SECTION 3 — HAZARDS IDENTIFICATION**

**ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.  
EYE or SKIN contact with the product, vapor or spray mist.

**EFFECTS OF OVEREXPOSURE**

**EYES:** Irritation.  
**SKIN:** Prolonged or repeated exposure may cause irritation.  
**INHALATION:** Irritation of the upper respiratory system.

HMIS Codes	
Health	2*
Flammability	3
Reactivity	0

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.  
Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:

- the liver
- the urinary system
- the reproductive system

**SIGNS AND SYMPTOMS OF OVEREXPOSURE**

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.  
Redness and itching or burning sensation may indicate eye or excessive skin exposure.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

None generally recognized.

**CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

**SECTION 4 — FIRST AID MEASURES**

**EYES:** Flush eyes with large amounts of water for 15 minutes. Get medical attention.

**SKIN:** Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

**INHALATION:** If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

**SECTION 5 — FIRE FIGHTING MEASURES****FLASH POINT**

64 °F PMCC

**LEL**

1.0

**UEL**

7.5

**FLAMMABILITY CLASSIFICATION**

RED LABEL -- Flammable, Flash below 100 °F (38 °C)

**EXTINGUISHING MEDIA**

Carbon Dioxide, Dry Chemical, Foam

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

**SPECIAL FIRE FIGHTING PROCEDURES**

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

**SECTION 6 — ACCIDENTAL RELEASE MEASURES****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Remove all sources of ignition. Ventilate the area.

Remove with inert absorbent.

**SECTION 7 — HANDLING AND STORAGE****STORAGE CATEGORY**

DOL Storage Class IB

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE**

Contents are **FLAMMABLE**. Keep away from heat, sparks, and open flame.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

**SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION****PRECAUTIONS TO BE TAKEN IN USE**

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

**VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

**RESPIRATORY PROTECTION**

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

**PROTECTIVE GLOVES**

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

**EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

**OTHER PRECAUTIONS**

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

**SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

PRODUCT WEIGHT	6.91 lb/gal	827 g/l
SPECIFIC GRAVITY	0.83	
BOILING POINT	237 - 292 °F	113 - 144 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	100%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	Not Available	
<b>VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)</b>		
6.90 lb/gal	827 g/l	Less Water and Federally Exempt Solvents
6.90 lb/gal	827 g/l	Emitted VOC

**SECTION 10 — STABILITY AND REACTIVITY**

**STABILITY** — Stable  
**CONDITIONS TO AVOID**

None known.

**INCOMPATIBILITY**

None known.

**HAZARDOUS DECOMPOSITION PRODUCTS**

By fire: Carbon Dioxide, Carbon Monoxide

**HAZARDOUS POLYMERIZATION**

Will not occur

**SECTION 11 — TOXICOLOGICAL INFORMATION****CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

**TOXICOLOGY DATA**

CAS No.	Ingredient Name			
100-41-4	Ethylbenzene	LC50 RAT	4HR	Not Available
		LD50 RAT		3500 mg/kg
1330-20-7	Xylene	LC50 RAT	4HR	5000 ppm
		LD50 RAT		4300 mg/kg
108-10-1	Methyl Isobutyl Ketone	LC50 RAT	4HR	Not Available
		LD50 RAT		2080 mg/kg

**SECTION 12 — ECOLOGICAL INFORMATION****ECOTOXICOLOGICAL INFORMATION**

No data available.

**SECTION 13 — DISPOSAL CONSIDERATIONS****WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

**SECTION 14 — TRANSPORT INFORMATION**

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

**US Ground (DOT)**

5 Liters (1.3 Gallons) and Less may be Classed as LTD. QTY. (PAINT OR RELATED).

Larger Containers are Regulated as:

UN1263, PAINT RELATED MATERIAL, 3, PG II, (ERG#128)

**DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities**

Ethylbenzene 1000 lb RQ

Methyl isobutyl ketone 5000 lb RQ

Xylenes (isomers and mixture) 100 lb RQ

**Bulk Containers may be Shipped as (check reportable quantities):**

RQ, UN1263, PAINT RELATED MATERIAL, 3, PG II, (XYLENES (ISOMERS AND MIXTURE)), (ERG#128)

**Canada (TDG)**

UN1263, PAINT RELATED MATERIAL, 3, PG II, LIMITED QUANTITY, (ERG#128)

**IMO**

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.

UN1263, PAINT RELATED MATERIAL, 3, PG II, (18 C c.c.), EmS F-E, S-E

**IMO**

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.

UN1263, PAINT RELATED MATERIAL, 3, PG II, (18 C c.c.), EmS F-E, S-E

**IATA/ICAO**

UN1263, PAINT RELATED MATERIAL, 3, PG II

<b>SECTION 15 — REGULATORY INFORMATION</b>
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**SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION**

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	8	
1330-20-7	Xylene	44	
108-10-1	Methyl Isobutyl Ketone	48	

**CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

**TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

<b>SECTION 16 — OTHER INFORMATION</b>
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This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.