



SAFETY DATA SHEET

This Safety Data Sheet Complies With the Requirements of: 29 CFR 1910.1200

Revision Date: 16-Oct-2020

Version 4.03

1. IDENTIFICATION

Product Identifier

Product Name D-SHIELD DS-104

Other Means of Identification

Product Code DS-104

UN/ID no UN2924

Recommended Use of the Chemical and Restrictions on Use

Recommended Use Iron Chelating Agent, Surfactant.

Details of the Supplier of the Safety Data Sheet

Aegis Chemical Solutions
Corporate Headquarters
4560 Kendrick Plaza Dr., Ste 190
Houston, TX 77032
Telephone: 281-258-4095

Emergency Telephone Number

Company Phone Number 281-258-4095

Emergency Telephone Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This product is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin Corrosion/Irritation	Category 1 Sub-category B
Serious Eye Damage/Eye Irritation	Category 1
Skin sensitization	Category 1A
Reproductive Toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 1
Flammable liquids	Category 3

Label Elements

Emergency Overview

Danger

Hazard Statements

Harmful if swallowed

Harmful if inhaled

Causes severe skin burns and eye damage

May cause an allergic skin reaction

May damage fertility or the unborn child

Causes damage to organs
Flammable liquid and vapor



Color Light amber

Physical State Liquid

Odor Mild

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
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Use explosion-proof electrical/ventilating/lighting/spill-response/equipment

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician
Specific treatment (see Section 4 of the SDS)
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 ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
If skin irritation or rash occurs: Get medical advice/attention
IF INHALED: 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
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting
In case of fire: Use CO₂, dry chemical, or foam for extinction

Precautionary Statements - Storage

Store locked up
Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards Not Otherwise Classified (HNOC)

Not applicable

Other Information

- May be harmful in contact with skin
- Harmful to aquatic life with long lasting effects
- Toxic to aquatic life

Unknown acute toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical Name	CAS No	Weight-%
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1) (salt)	55566-30-8	10 - 20
Methyl alcohol	67-56-1	10
Phosphoric acid	7664-38-2	5 -10
Citric acid	77-92-9	3 -7
Sulfamic acid	5329-14-6	0.45

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of First Aid Measures

General Advice	Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
Eye Contact	Keep eye wide open while rinsing. Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Do not rub affected area.
Skin Contact	Wash off immediately with plenty of water. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Inhalation	Remove to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. Immediate medical attention is required. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.
Self-protection of the first aider	Remove all sources of ignition. Avoid contact with skin, eyes or clothing.

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 Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Ethanol may inhibit methanol metabolism. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Small Fire Dry chemical or CO₂.

Unsuitable Extinguishing Media Do not use a solid water stream as it may scatter and spread fire.

Specific Hazards Arising From the Chemical

The product causes burns of eyes, skin and mucous membranes. Flammable. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge Yes.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency procedures

Personal Precautions Evacuate personnel to safe areas. Remove all sources of ignition. Ensure adequate ventilation, especially in confined areas. Use personal protective equipment as required. Keep people away from and upwind of spill/leak.

Environmental Precautions

Environmental Precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system.

Methods and Material for Containment and Cleaning Up

Methods for Containment Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.

Methods for Cleaning Up Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers. Take up mechanically, placing in appropriate containers for disposal.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Advice on Safe Handling Ensure adequate ventilation, especially in confined areas. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded. Avoid contact with skin and eyes. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible Materials Incompatible with strong acids and bases. Incompatible with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phosphonium, tetrakis(hydroxymethyl)-, sulfate	TWA: 2 mg/m ³	-	-

(2:1) (salt) 55566-30-8			
Methyl alcohol 67-56-1	STEL: 250 ppm TWA: 200 ppm S*	TWA: 200 ppm TWA: 260 mg/m ³ (vacated) TWA: 200 ppm (vacated) TWA: 260 mg/m ³ (vacated) STEL: 250 ppm (vacated) STEL: 325 mg/m ³ (vacated) S*	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 325 mg/m ³
Phosphoric acid 7664-38-2	STEL: 3 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³ (vacated) STEL: 3 mg/m ³	IDLH: 1000 mg/m ³ TWA: 1 mg/m ³ STEL: 3 mg/m ³

NIOSH IDLH *Immediately Dangerous to Life or Health*

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate Engineering Controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Individual Protection Measures, Such as Personal Protective Equipment

Additional Evaluation Needed The Protection Measures listed below are generic recommendations for working with this product in a controlled environment. A workplace assessment should be completed to detail any additional Protective Measures and PPE that may be required.

Eye/Face Protection Tight sealing safety goggles. Face protection shield.

Skin and Body Protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	Liquid	Color	Light amber
Odor	Mild.		
Odor Threshold	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	1 - 2	
Melting Point/Freezing Point	< 0 °C / 32 °F	
Boiling Point/Boiling Range	> 100 °C / 212 °F	
Flash Point	> 56 °C / > 133 °F	
Evaporation Rate	No information available	
Flammability (solid, gas)		
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
Specific Gravity	1.123
Water Solubility	Soluble in water
Solubility in Other Solvents	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
Explosive Properties	No information available
Oxidizing Properties	No information available

Other Information**10. STABILITY AND REACTIVITY****Reactivity**

Stable under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to Avoid

Heat, flames and sparks. Exposure to air or moisture over prolonged periods.

Incompatible Materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION**Information on Likely Routes of Exposure**

Product Information	Information given is based on available data of the components and the toxicology of similar products. The product has not been tested.		
Inhalation	Avoid breathing mist/spray. Harmful by inhalation.		
Eye Contact	Corrosive to the eyes and may cause severe damage including blindness.		
Skin Contact	The product causes burns of eyes, skin and mucous membranes. May cause sensitization by skin contact.		
Ingestion	Can burn mouth, throat, and stomach. May be harmful if swallowed. Inhalation, ingestion, or skin absorption of methanol can cause blindness.		

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1) (salt) 55566-30-8	= 248 mg/kg (Rat)	-	5.5 mg/l
Methyl alcohol 67-56-1	= 6200 mg/kg (Rat)	= 15800 mg/kg (Rabbit)	= 22500 ppm (Rat) 8 h = 64000 ppm (Rat) 4 h
Phosphoric acid	= 1530 mg/kg (Rat)	= 2740 mg/kg (Rabbit)	> 850 mg/m ³ (Rat) 1 h

7664-38-2			
Citric acid 77-92-9	= 3000 mg/kg (Rat)	-	-
Sulfamic acid 5329-14-6	= 1450 mg/kg (Rat)	-	-

Information on Toxicological Effects

Symptoms No information available.

Delayed and Immediate Effects as Well as Chronic Effects From Short and Long-term Exposure

Sensitization May cause sensitization by skin contact.
Germ Cell Mutagenicity Not known to cause heritable genetic damage.
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Phosphonium, tetrakis(hydroxymethyl)-, sulfate (2:1) (salt) 55566-30-8	-	Group 3	-	-

IARC (International Agency for Research on Cancer)
Group 3 - Not classifiable as a human carcinogen

Reproductive Toxicity Product is or contains a chemical which is a known or suspected reproductive hazard.
Teratogenicity Not known to cause birth defects or have a deleterious effect on a developing fetus.
STOT - Single Exposure Optic nerve. Liver. Kidney. Central nervous system.
STOT - Repeated Exposure No information available.
Chronic Toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.
Target Organ Effects Eyes, Respiratory system, Skin, Central nervous system, Gastrointestinal tract (GI).
Other Adverse Effects Methanol has produced fetotoxicity in rats and teratogenicity in mice exposed by inhalation to high concentrations of methanol vapors.
Aspiration Hazard No information available.

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 720 mg/kg
ATEmix (dermal) 2829 mg/kg
ATEmix (inhalation-dust/mist) 2.1 mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Harmful to aquatic life with long lasting effects. Toxic to aquatic life.

0% of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical Name	Algae/Aquatic Plants	Fish	Crustacea
Methyl alcohol 67-56-1	-	28200: 96 h Pimephales promelas mg/L LC50 flow-through 13500 - 17600: 96 h Lepomis macrochirus mg/L LC50 flow-through 18 - 20: 96 h Oncorhynchus mykiss mL/L LC50 static 100: 96 h Pimephales promelas mg/L LC50 static 19500 - 20700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through	-
Phosphoric acid 7664-38-2	-	3 - 3.5: 96 h Gambusia affinis mg/L LC50	4.6: 12 h Daphnia magna mg/L EC50
Citric acid 77-92-9	-	1516: 96 h Lepomis macrochirus mg/L LC50 static	120: 72 h Daphnia magna mg/L EC50
Sulfamic acid 5329-14-6	-	14.2: 96 h Pimephales promelas mg/L LC50 static	-

Persistence and Degradability

No information available.

Bioaccumulation

No information available.

Chemical Name	Partition Coefficient
Methyl alcohol 67-56-1	-0.77
Citric acid 77-92-9	-1.72

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods**Disposal of Wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging

Do not reuse container. Empty drums should be completely drained properly bunged and promptly returned to a drum reconditioner, or properly disposed.

US EPA Waste Number

D002.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Methyl alcohol 67-56-1	-	Included in waste stream: F039	-	U154

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Methyl alcohol 67-56-1	Toxic Ignitable
Phosphoric acid 7664-38-2	Corrosive

14. TRANSPORT INFORMATION

DOT

UN/ID no UN2924
Proper Shipping Name Flammable liquids, corrosive, n.o.s (contains phosphoric acid)
Hazard Class 3
Subsidiary Class 8
Packing Group III

Quantity Dependent Shipping Descriptions

Quantity <= 5333 gallons
DOT Description UN2924, Flammable liquids, corrosive, n.o.s, (contains methanol, phosphoric acid), 3(8), PG III

Quantity >5333 gallons
DOT Description 2 UN2924, Flammable liquids, corrosive, n.o.s, (contains methanol, phosphoric acid), 3(8), PG III, RQ (methanol)

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Not Present
IECSC	Complies
KECL	Not Present
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

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).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Phosphoric acid 7664-38-2	5000 lb	-	-	X

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Methyl alcohol 67-56-1	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Phosphoric acid 7664-38-2	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals.

U.S. State Right-to-Know Regulations**U.S. EPA Label Information****16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION**

<u>NFPA</u>	Health Hazards 3	Flammability 2	Instability 0	Physical and Chemical Properties -
<u>HMIS</u>	Health Hazards 3*	Flammability 2	Physical Hazards 0	Personal Protection X

Revision Date: 16-Oct-2020

Revision Note:

SDS sections updated:

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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 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.

End of Safety Data Sheet