



SAFETY DATA SHEET

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

Revision Date: 20-Nov-2019

Version 2

1. IDENTIFICATION

Product Identifier

Product Name **BIO-SHIELD BS-912**

Other Means of Identification

Product Code BS-912

Registration Number(s) 89871-1

Recommended Use of the Chemical and Restrictions on Use

Recommended Use FIFRA Regulated End Use Product.

Uses Advised Against It is a violation of Federal Law to use this product in a manner inconsistent with its labeling

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

For medical emergencies, call the poison control center at 1-800-222-1222

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
Respiratory sensitization	Category 1
Skin sensitization	Category 1

Label Elements

Emergency Overview

Danger

Hazard Statements

Harmful if swallowed

Harmful if inhaled

Causes severe skin burns and eye damage

May cause allergy or asthma symptoms or breathing difficulties if inhaled

May cause an allergic skin reaction

**Color** Colorless to Light yellow**Physical State** Liquid**Odor** Fruity**Precautionary Statements - Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray
 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
 Wear protective gloves
 Wear eye/face protection
 In case of inadequate ventilation wear respiratory protection

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
 If skin irritation or rash occurs: Get medical advice/attention
 Wash contaminated clothing before reuse
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
 Call a POISON CENTER or doctor/physician if you feel unwell
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 Rinse mouth

Precautionary Statements - Storage

Store locked up

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
- Toxic 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-%
Glutaraldehyde	111-30-8	10 - 20
Didecyldimethylammonium chloride	7173-51-5	1 - 3
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	1 - 3

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.
Eye Contact	Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.
Skin Contact	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash off immediately with soap and plenty of water. Consult a physician if necessary.
Inhalation	Remove to fresh air. Call a physician or poison control center immediately. Oxygen or artificial respiration if needed. Call a physician. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion	Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. 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	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms Severe eye irritation May cause an allergic skin reaction Skin irritation

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. May cause sensitization by inhalation and skin contact. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Water spray (fog). Foam. Dry chemical. Carbon dioxide (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. 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 None.

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 Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental Precautions

Environmental Precautions Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

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 Use personal protective equipment as required. Dam up. Cover liquid spill with sand, earth or other non-combustible absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Advice on Safe Handling Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. Handle in accordance with good industrial hygiene and safety practice.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

Incompatible Materials Incompatible with oxidizing agents. Amines.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Glutaraldehyde 111-30-8	Ceiling: 0.05 ppm activated and inactivated	(vacated) Ceiling: 0.2 ppm (vacated) Ceiling: 0.8 mg/m ³	Ceiling: 0.2 ppm Ceiling: 0.8 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. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	Liquid	Color	Colorless to Light yellow
Odor	Fruity.		
Odor Threshold	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	4.13	
Melting Point/Freezing Point	No information available	
Boiling Point/Boiling Range	99 °C / 211 °F	
Flash Point	> 99 °C / > 210 °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	1.027	
Water Solubility	Miscible 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	~1 cP @ 20°C	
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

Exposure to air or moisture over prolonged periods.

Incompatible Materials

Incompatible with oxidizing agents. Amines.

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	Harmful by inhalation. Avoid breathing mist/spray. May cause sensitization by inhalation. Avoid breathing vapors or mists. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Eye Contact	Avoid contact with eyes. Corrosive to the eyes and may cause severe damage including blindness.
Skin Contact	Avoid contact with skin and clothing. Contact causes severe skin irritation and possible burns. May cause sensitization by skin contact. May be harmful in contact with skin.
Ingestion	Harmful if swallowed. Can burn mouth, throat, and stomach.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Glutaraldehyde 111-30-8	= 252 mg/kg (Rat)	= 560 µL/kg (Rabbit)	= 0.1 mg/L (Rat) 4 h
Didecyldimethylammonium chloride 7173-51-5	= 84 mg/kg (Rat)	-	-
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides 68424-85-1	= 426 mg/kg (Rat)	-	-

Information on Toxicological Effects

Symptoms Severe eye irritation. May cause an allergic skin reaction. Skin irritation.

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

Sensitization	May cause sensitization by inhalation and skin contact.
Germ Cell Mutagenicity	Not known to cause heritable genetic damage.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Reproductive Toxicity	This product does not contain any known or suspected reproductive hazards.
Teratogenicity	Not known to cause birth defects or have a deleterious effect on a developing fetus.
STOT - Single Exposure	No information available.
STOT - Repeated Exposure	No information available.
Chronic Toxicity	Avoid repeated exposure. Possible risk of irreversible effects.
Target Organ Effects	Eyes, Respiratory system, Skin.
Aspiration Hazard	No information available.

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

ATEmix (oral)	1980 mg/kg
ATEmix (dermal)	4951.33 mg/kg
ATEmix (inhalation-dust/mist)	4.175 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Chemical Name	Algae/Aquatic Plants	Fish	Crustacea
Glutaraldehyde 111-30-8	0.61: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50 0.84: 96 h <i>Desmodesmus subspicatus</i> mg/L EC50	7.8 - 22: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 2.6 - 4.8: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 flow-through 7.8 - 13: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 5.4: 96 h <i>Pimephales promelas</i> mg/L LC50 static	14: 48 h <i>Daphnia magna</i> mg/L EC50 0.56 - 1.0: 48 h <i>Daphnia magna</i> mg/L EC50 Static
Didecyldimethylammonium chloride 7173-51-5	72 h algae mg/L EC50: 0.062	96 h <i>Lepomis macrochirus</i> mg/L LC50 static 0.032	48 h <i>Daphnia magna</i> mg/L LC50 0.0057 21 d <i>Daphnia magna</i> mg/L NOEC 0.021
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides 68424-85-1	-	96 h <i>Lepomis macrochirus</i> mg/L LC50 static 0.515	<i>Daphnia magna</i> mg/L NOEL 0.0042: 48 h <i>Daphnia magna</i> mg/L EC50 Static

Persistence and Degradability

This product is expected to be readily biodegradable.

Bioaccumulation

No information available.

Chemical Name	Partition Coefficient
Glutaraldehyde 111-30-8	0.22

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance. Dispose of in accordance with all applicable regulations. The waste code should be assigned in discussion between the user, the producer and the waste disposal company. Dispose of waste from residues/unused products in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Contaminated Packaging

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

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
Glutaraldehyde 111-30-8	Toxic

14. TRANSPORT INFORMATION

DOT

Not regulated by U.S. DOT

DOT Description

Not regulated by U.S. DOT

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Not Present
IECSC	Complies
KECL	Complies
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 does not contain any 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	No
Fire Hazard	No
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).

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.

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****EPA Pesticide Registration Number** 89871-1**EPA Statement**

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

EPA Pesticide Label

Corrosive. Causes irreversible eye damage. Harmful if swallowed, absorbed through the skin or inhaled. Do not get in eyes or on clothing. Avoid contact with skin. Avoid breathing spray mist. Wear goggles or face shield when handling, chemical-resistant gloves and protective clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

<u>NFPA</u>	Health Hazards 3	Flammability 1	Instability 0	Physical and Chemical Properties -
<u>HMIS</u>	Health Hazards 3	Flammability 1	Physical Hazards 0	Personal Protection X

Revision Date: 20-Nov-2019**Revision Note:**

New

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