

Material Safety Data Sheet

Glutaraldehyde Solutions

Section 1 - Chemical Product and Company Identification

MSDS Name: Glutaraldehyde Solutions

Synonyms: Glutaraldehyde; 1,5 -Pentanedial; Glutaral; Glutaric dialdehyde.

Company Identification: SPE chemicals Co., Ltd

Tel: 0086-21-68735647 Fax: 0086-21-68735647

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
111-30-8	Glutaraldehyde	50	203-856-5
7732-18-5	Water	50	231-791-2

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid.

Danger! Causes eye and skin burns. Causes digestive and respiratory tract burns. May cause allergic respiratory and skin reaction. Harmful if swallowed, inhaled, or absorbed through the skin. Aspiration hazard if swallowed. Can enter lungs and cause damage. Dangerous for the environment.

Target Organs: Central nervous system, lungs, respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation and burns. May cause permanent visual impairment. May cause chemical conjunctivitis and corneal damage.

Skin: May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May cause hives. Causes skin irritation and burns. May cause staining of the hands (brownish or tan).

Ingestion: Harmful if swallowed. Causes gastrointestinal tract burns. May cause

central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Possible aspiration hazard. May cause lung damage.

Inhalation: Harmful if inhaled. Causes chemical burns to the respiratory tract. May cause asthma and shortness of breath. May cause nausea, dizziness, and headache.

Chronic: Effects may be delayed. Repeated or prolonged exposure may cause allergic reactions in sensitive individuals.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

Ingestion: Do not induce vomiting. Get medical aid immediately. Call a poison control center. Do not give anything by mouth. Oral toxicity of Glutaraldehyde increases with dilution. Drinking water following ingestion of concentrated Glutaraldehyde solutions can enhance the toxicity.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Flash Point: Not available.

Autoignition Temperature: Not available.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 1; Instability: 1

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation. Avoid breathing vapor.

Storage: Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Refrigeration has been recommended.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Glutaraldehyde	0.05 ppm Ceiling (activated and inactivated)	none listed	none listed
Water	none listed	none listed	none listed

OSHA Vacated PELs: Glutaraldehyde: No OSHA Vacated PELs are listed for this chemical. Water: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear chemical splash goggles and face shield.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: clear, light yellow

Odor: sharp odor - fruity odor - medicinal odor

pH: 2.5 – 3.5

Vapor Pressure: 15 mm Hg @ 20 deg C

Vapor Density: 1.05 (air=1)

Evaporation Rate: 0.93 (BuAc =1)

Viscosity: Not available.

Boiling Point: 101 deg C

Freezing/Melting Point: -21 deg C

Decomposition Temperature: Not available.

Solubility: Soluble.

Specific Gravity/Density: 1.13 g/cm³

Molecular Formula: C₅H₈O₂

Molecular Weight: 100.12

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Exposure to air, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents, strong bases, Note: [Alkaline solutions of glutaraldehyde (i.e., activated glutaraldehyde) react with alcohol, ketones, amines, hydrazines and proteins.].

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported

Section 11 - Toxicological Information

LD50/LC50:

Draize test, rabbit, eye: 1 mg Severe;
Draize test, rabbit, eye: 250 ug/24H Severe;
Draize test, rabbit, skin: 2 mg/24H Severe;
Inhalation, rat: LC50 = 480 mg/m³/4H;
Oral, mouse: LD50 = 100 mg/kg;
Oral, mouse: LD50 = 231 mg/kg;
Oral, rat: LD50 = 134 mg/kg;
Oral, rat: LD50 = 140 mg/kg;
Skin, rabbit: LD50 = 560 uL/kg;
Skin, rat: LD50 = >2500 mg/kg;

Carcinogenicity:

CAS# 111-30-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found

Teratogenicity: See actual entry in RTECS for complete information.

Reproductive Effects: TDLo - Lowest published toxic dose(Oral, rat) = 875 mg/kg; Paternal Effects - testes, epididymis, sperm duct, prostate, seminal vesicle, Cowper's gland, accessory glands. TDLo - Lowest published toxic dose(Oral, rat) = 4370 mg/kg; Maternal Effects - uterus, cervix, vagina.

Mutagenicity: Mutation in microorganisms(*Salmonella typhimurium*) = 150 ug/plate
Mutation in microorganisms(*Escherichia coli*) = 62500ng/plate.

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Bacteria: *Phytobacterium phosphoreum*: EC50 = 76.0 mg/L; 5 minutes; Microtox test

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	TOXIC LIQUIDS, CORROSIVE, ORGANIC, N.O.S.	TOXIC LIQUID ORGANIC NOS (GLUTARALDEHYDE)
Hazard Class:	6.1	6.1
UN Number:	UN2927	UN2810
Packing Group:	II	III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 111-30-8 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 111-30-8: immediate.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under

the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 111-30-8 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T N

Risk Phrases:

R 23/25 Toxic by inhalation and if swallowed.

R 34 Causes burns.

R 42/43 May cause sensitization by inhalation and skin contact.

R 50 Very toxic to aquatic organisms.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

Section 16 - Additional Information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if SPE chemicals has been advised of the possibility of such damages.