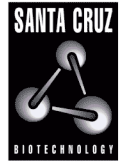


Glutaraldehyde solution: sc-300764



The Power to Question

MATERIAL SAFETY DATA SHEET

1 Identification of substance:

Product Name: Glutaraldehyde solution

Catalog Number: sc-300764

Supplier: Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800

Emergency: ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

1,5-Pentanedial (CAS# 111-30-8): 25%

Water (CAS# 7732-18-5): 75%

Identification number(s):

Index number: 605-022-00-X

3 Hazards identification

Hazard description:



T Toxic
N Dangerous for the environment

Information pertaining to particular dangers for man and environment

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.

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	2
FIRE	0
REACTIVITY	1

Health (acute effects) = 2

Flammability = 0

Reactivity = 1

GHS label elements



Danger

3.1/3 - Toxic if swallowed.

3.1/3 - Toxic if inhaled.

3.4/1 - May cause an allergic skin reaction.



Danger

3.4/1 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.



Danger

3.2/1B - Causes severe skin burns and eye damage.



Warning

4.1/1 - Very toxic to aquatic life.

Prevention:

Do not breathe dust/fume/gas/mist/vapours/spray.
Avoid breathing dust/fume/gas/mist/vapours/spray.
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.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
In case of inadequate ventilation wear respiratory protection.

Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
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.
Call a POISON CENTER or doctor/physician.
Specific treatment (see label).
Rinse mouth.
If skin irritation or rash occurs: Get medical advice/attention.
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
Wash contaminated clothing before reuse.
Collect spillage.

Storage:

Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures

General information

Immediately remove any clothing soiled by the product.
Remove breathing apparatus only after contaminated clothing has been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Protective equipment:

Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

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.

Additional information:

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

Information for safe handling:

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

Information about protection against explosions and fires: The product is not flammable

Storage

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

Aqueous solutions are incompatible with alkali and alkaline earth metals and many reactive organic and inorganic chemicals.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Glutaraldehyde

	ppm
ACGIH TLV	0.05-CEILING; Not classifiable as a human carcinogen
Austria MAK	0.2
Belgium TWA	0.2 mg/m ³ ; 0.82 mg/m ³ -STEL
Denmark TWA	0.2
Finland TWA	0.1-CEILING
France VLE	0.2
Germany MAK	0.21
Korea TLV	0.05-CEILING
Norway TWA	0.2
Poland TWA	0.4 mg/m ³ ; 0.6 mg/m ³ -STEL
Russia	5 mg/m ³ -STEL
Sweden	0.2-STEL (skin)
Switzerland MAK-W	0.2; 0.4-KZG-W
United Kingdom TWA	0.05

Components with limit values that require monitoring at the workplace:

Additional information: No data

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection:

Safety glasses

Tightly sealed goggles

Full face protection

Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information	
Form:	Liquid
Color:	Colorless
Odor:	Not determined
Change in condition	
Melting point/Melting range:	-6°C (21°F)
Boiling point/Boiling range:	100-102°C (212-216°F)
Sublimation temperature / start:	Not determined
Flash point:	Not determined
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density at 20°C (68°F):	1.062 g/cm ³
Solubility in / Miscibility with	
Water:	Fully miscible

10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Aqueous solutions are incompatible with alkali and alkaline earth metals and many reactive organic and inorganic chemicals.

Dangerous reactions

Reacts with alkali metals.

Reacts with alkaline earth metals.

Dangerous products of decomposition: Carbon monoxide and carbon dioxide

11 Toxicological information**Acute toxicity:****Primary irritant effect:****on the skin:**

Corrosive effect on skin and mucous membranes.

Irritant to skin and mucous membranes.

on the eye:

Strong corrosive effect.

Irritating effect.

Sensitization:

Sensitization possible through inhalation.

Sensitization possible through skin contact.

Other information (about experimental toxicology):

Reproductive effects have been observed on tests with laboratory animals.

Mutagenic effects have been observed on tests with bacteria.

Mutagenic effects have been observed on tests with human lymphocytes.

Mutagenic effects have been observed on tests with non-mammalian species cells.

Mutagenic effects have been observed on tests with laboratory animals.

Subacute to chronic toxicity:**Subacute to chronic toxicity:**

Glutaraldehyde is toxic and severely irritating to the eyes and skin. Dermatitis can result from skin exposure. Ingestion causes altered sleep time and food intake levels in animals.

Chronic ingestion affects the bladder, liver, enzyme levels, and body weight. Impairment to fertility and fetal development in laboratory animal experiments have also occurred from ingestion. Chronic inhalation causes weight loss, changes to the olfactory and respiratory systems, and death.

Subacute to chronic toxicity:

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus. May cause skin burns or irritation depending on the severity of the exposure.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

12 Ecological information:

Ecotoxicological effects:

Remark: Very toxic for fish

General notes:

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.

Also poisonous for fish and plankton in water bodies.

Do not allow material to be released to the environment without proper governmental permits.

Very toxic for aquatic organisms

13 Disposal considerations

Product:

Recommendation: Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

DOT regulations:





Hazard class: 8
Identification number: UN2922
Packing group: III
Proper shipping name (technical name): CORROSIVE LIQUID, TOXIC, N.O.S. (Glutaraldehyde solution)
Label: 8+6.1

Land transport ADR/RID (cross-border)



ADR/RID class: 8 (CT1) Corrosive substances
Danger code (Kemler): 86
UN-Number: 2922
Packaging group: III

Description of goods:	2922 CORROSIVE LIQUID, TOXIC, N.O.S. (Glutaraldehyde solution)
Maritime transport IMDG:	
	
IMDG Class:	8
UN Number:	2922
Label	8+6.1
Packaging group:	III
Proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (Glutaraldehyde solution)
Air transport ICAO-TI and IATA-DGR:	
	
ICAO/IATA Class:	8
UN/ID Number:	2922
Label	8+6.1
Packaging group:	III
Proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (Glutaraldehyde solution)

UN "Model Regulation": UN2922, CORROSIVE LIQUID, TOXIC, N.O.S., 8 (6.1), III
Environmental hazards: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID

15 Regulations

Product related hazard informations:

Hazard symbols:

T Toxic
N Dangerous for the environment

Risk phrases:

23/25 Toxic by inhalation and if swallowed.
34 Causes burns.
42/43 May cause sensitization by inhalation and skin contact.
50 Very toxic to aquatic organisms.

Safety phrases:

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately.
61 Avoid release to the environment. Refer to special instructions/Safety data sheets

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use: For use only by technically qualified individuals.

16 Other information:

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.