GLUTARALDEHYDE SOLUTION
CAS NO – 111-30-8

MATERIAL SAFETY DATA SHEET
SDS/MSDS

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers
   Product name : Glutaraldehyde solution

   CAS NO : 111-30-8

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Identified uses : Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet
   Company : Central Drug House (P) Ltd
   7/28 Vardaan House
   New Delhi -110002
   INDIA
   Telephone : +91 11 49404040
   Email : care@cdhfinechemical.com

1.4 Emergency telephone number
   Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification according to Regulation (EC) No 1272/2008
   Acute toxicity, Oral (Category 4), H302
   Acute toxicity, Inhalation (Category 4), H332
   Skin corrosion (Category 1B), H314
   Respiratory sensitisation (Category 1), H334
   Skin sensitisation (Category 1), H317
   Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
   Acute aquatic toxicity (Category 1), H400
   Chronic aquatic toxicity (Category 2), H411

   For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements
   Labelling according Regulation (EC) No 1272/2008
   Pictogram

   Signal word : Danger
   Hazard statement(s)
   H302 + H332 : Harmful if swallowed or if inhaled
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 Wear respiratory protection.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Supplemental Hazard Statements

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures
Synonyms: Glutaric dialdehyde solution
             Gluteraldehyde
             Pentane-1,5-dial

Formula: \( \text{C}_6\text{H}_8\text{O}_2 \)
Molecular weight: 100.12 g/mol

Hazardous ingredients according to Regulation (EC) No 1272/2008

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glutaral</td>
<td>Acute Tox. 3; Skin Corr. 1B; Resp. Sens. 1; Skin Sens. 1; Aquatic Chronic 2; H301, H331, H314, H334, H317, H400, H411</td>
<td>( &gt;= 25 - &lt; 30 % )</td>
</tr>
<tr>
<td></td>
<td>Aquatic Acute 1; Aquatic Chronic 2; H301, H331, H314, H334, H317, H400, H411 Concentration limits:</td>
<td>( &gt;= 10 %; \text{Skin Corr. 1B}, \text{H314; 0.5 - &lt; 10 %; Skin Irrit. 2, H315; 2 - &lt; 10 %; Eye Dam. 1, H318; 0.5 - &lt; 2 %; Eye Irrit. 2, H319; &gt;= 0.5 %; Skin Sens. 1, H317; &gt;= 0.5 %; STOT SE 3, H335; M-Factor - Aquatic Acute: 1}</td>
</tr>
<tr>
<td>Methanol</td>
<td>Flam. Liq. 2; Acute Tox. 3; STOT SE 1; H225, H301, H331, H311, H370 Concentration limits:</td>
<td>( &gt;= 0.1 - &lt; 1 % )</td>
</tr>
<tr>
<td></td>
<td>STOT SE 1, H370; 3 - &lt; 10 %; STOT SE 2, H371;</td>
<td></td>
</tr>
</tbody>
</table>
For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.
SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are
opened must be carefully resealed and kept upright to prevent leakage.
Recommended storage temperature -20 °C
Store under inert gas. Air sensitive.
Storage class (TRGS 510): Non-combustible, corrosive hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and
at the end of workday.

Personal protective equipment

Eye/face protection
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection
tested and approved under appropriate government standards such as NIOSH (US) or EN
166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique
(without touching glove’s outer surface) to avoid skin contact with this product. Dispose of
contaminated gloves after use in accordance with applicable laws and good laboratory practices.
Wash and dry hands.

Body Protection
Complete suit protecting against chemicals. The type of protective equipment must be selected
according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use (US) or type ABEK (EN
14387) respirator cartridges as a backup to enginee protection, use a full-face supplied air
respirator. Use respirators and components tested and approved under appropriate government
standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into
the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance Form: liquid
Colour: colourless

b) Odour No data available

c) Odour Threshold No data available

d) pH 2.9
e) Melting point/freezing point  -10 °C
f) Initial boiling point and boiling range  101 °C at 1,013 hPa

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong acids, Strong bases, Strong oxidizing agents

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available
Hazardous decomposition products formed under fire conditions. - Carbon oxides
In the event of fire: see section 5
SECTION 11: Toxicological information

11.1 Information on toxicological effects

**Acute toxicity**
No data available

LD50 Oral - Rat - 134 mg/kg(Glutaral)
LD50 Inhalation - Rat - 4 h - 0.48 mg/l(Glutaral)
Remarks: Inhalation may affect the following organs: Lungs, Thorax, or Respiration:Dyspnea. Material is irritating to mucous membranes and upper respiratory tract.
LD50 Dermal - Rat - > 2,500 mg/kg(Glutaral)
Remarks: Prolonged skin contact may cause skin irritation and/or dermatitis.

**Skin corrosion/irritation**
Skin - Rabbit(Glutaral)
Result: Causes burns.
(OECD Test Guideline 404)

**Serious eye damage/eye irritation**
Eyes - Rabbit(Glutaral)
Result: Severe eye irritation - 24 h

**Respiratory or skin sensitisation**
May cause allergic respiratory and skin reactions Chronic exposure may cause dermatitis. largely based on human evidence(Glutaral)
Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)(Glutaral)

**Germ cell mutagenicity**
No data available(Glutaral)

**Carcinogenicity**
This product is or contains a component that is not classifiable as to its classification.(Glutaral)
(Glutaral)

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.

**Reproductive toxicity**
No data available(Glutaral)

**Specific target organ toxicity - single exposure**
No data available(Glutaral)

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available(Glutaral)

**Additional Information**
RTECS: Not available
burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting(Glutaral)
Liver - Irregularities - Based on Human Evidence(Glutaral)

SECTION 12: Ecological information

12.1 Toxicity

**Toxicity to fish**
LC50 - Oncorhynchus mykiss (rainbow trout) - 3.5 mg/l - 96.0 h(Glutaral)

**Toxicity to daphnia and other aquatic invertebrates**
EC50 - Daphnia magna (Water flea) - 0.75 mg/l - 48 h(Glutaral)
Toxicity to algae
EC50 - Desmodesmus subspicatus (green algae) - 0.61 mg/l - 72 h(Glutaral)
NOEC - Desmodesmus subspicatus (green algae) - 0.025 mg/l - 72 h(Glutaral)

12.2 Persistence and degradability
Biodegradability
Biotic/Aerobic - Exposure time 28 d(Glutaral)
Result: 90 - 100 % - Readily biodegradable

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available(Glutaral)

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
Very toxic to aquatic life.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number
ADR/RID: 3265  IMDG: 3265  IATA: 3265

14.2 UN proper shipping name
ADR/RID: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Glutaral)
IMDG: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Glutaral)
IATA: Corrosive liquid, acidic, organic, n.o.s. (Glutaral)

14.3 Transport hazard class(es)
ADR/RID: 8  IMDG: 8  IATA: 8

14.4 Packaging group
ADR/RID: II  IMDG: II  IATA: II

14.5 Environmental hazards
ADR/RID: no  IMDG Marine pollutant: no  IATA: no

14.6 Special precautions for user
No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out
SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H225    Highly flammable liquid and vapour.
H301    Toxic if swallowed.
H302    Harmful if swallowed.
H302 + H332  Harmful if swallowed or if inhaled
H311    Toxic 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.
H331    Toxic if inhaled.
H332    Harmful if inhaled.
H334    May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335    May cause respiratory irritation.
H370    Causes damage to organs.
H371    May cause damage to organs.
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.

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.