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

1.1 Product identifiers

Product name: Glycidyltrimethylammonium chloride
Product Number: 50053
Brand: Aldrich
REACH No.: A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
CAS-No.: 3033-77-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich Pte Ltd
1 Science Park Road
#02-14 The Capricorn
Singapore Science Park Road II
SINGAPORE 117528
SINGAPORE
Telephone: +65 6779 1200
Fax: +65 6779 1822

1.4 Emergency telephone number

Emergency Phone #: 1-800-262-8200

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Dermal (Category 4), H312
Serious eye damage (Category 1), H318
Skin sensitisation (Category 1), H317
Germ cell mutagenicity (Category 2), H341
Carcinogenicity (Category 1B), H350
Reproductive toxicity (Category 1B), H360
Specific target organ toxicity - repeated exposure (Category 2), H373
Chronic aquatic toxicity (Category 3), H412

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

Classification according to EU Directives 67/548/EEC or 1999/45/EC
T Toxic R60
T Toxic R45
Xn Harmful R48/22, R20/21/22
Xn Harmful R68
Xi Irritant R43
Xi Irritant R41
R52/53
For the full text of the R-phrases 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)
H301 Toxic if swallowed.
H312 Harmful in contact with skin.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H361f Suspected of damaging fertility.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P201 Obtain special instructions before use.
P273 Avoid release to the environment.
P280 Wear protective gloves/eye protection/face protection.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/attention.

Supplemental Hazard Statements none

Restricted to professional users.


Hazard symbol(s) T Toxic

R-phrase(s)
R45 May cause cancer.
R60 May impair fertility.
R20/21/22 Also harmful by inhalation, in contact with skin and if swallowed.
R48/22 Also harmful: danger of serious damage to health by prolonged exposure if swallowed.
R68 Possible risk of irreversible effects.
R41 Risk of serious damage to eyes.
R43 May cause sensitisation by skin contact.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)
S53 Avoid exposure - obtain special instructions before use.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.

Restricted to professional users.

2.3 Other hazards - none
SECTION 3: Composition/information on ingredients

3.2 Mixtures
Chemical characterization: Natural product
Synonyms: (2,3-Epoxypropyl)trimethylammonium chloride

Formula: C₆H₁₄ClNO
Molecular Weight: 151.63 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>2,3-Epoxypropyltrimethylammonium chloride</td>
<td>Acute Tox. 4; Eye Dam. 1; Skin Sens. 1; Muta. 2; Carc. 1B; Repr. 2; STOT RE 2; Aquatic Chronic 3; H373, H302, H312, H317, H318, H341, H350, H412, H361f</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td>3-Chloropropane-1,2-diol</td>
<td>Acute Tox. 2; Acute Tox. 3; Acute Tox. 4; Eye Dam. 1; Repr. 1B; H300, H312, H318, H331, H360</td>
<td>3 - 5 %</td>
</tr>
</tbody>
</table>

Hazardous ingredients according to Directive 1999/45/EC

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,3-Epoxypropyltrimethylammonium chloride</td>
<td></td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td>3-Chloropropane-1,2-diol</td>
<td>T, R60 - R21 - R23/25 - R41</td>
<td>3 - 5 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements and R-Phrases 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
Wash off with soap and plenty of water. Take victim immediately to hospital. 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
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
no data available

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

5.4 Further information
no data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. 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 exposure - obtain special instructions before use. 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: 2 - 8 °C

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Components with workplace control parameters

8.2 Exposure controls
Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling
the product.
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.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Full contact**
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested:Dermatri® (KCL 740 / Aldrich Z677272, Size M)

**Splash contact**
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested:Dermatri® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**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 a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of 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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>no data available</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>pH</td>
<td>no data available</td>
</tr>
<tr>
<td>Melting point/freezing</td>
<td>133 - 137 °C</td>
</tr>
<tr>
<td>point</td>
<td></td>
</tr>
<tr>
<td>Initial boiling point and</td>
<td>no data available</td>
</tr>
</tbody>
</table>
### 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

- no data available

#### 10.6 Hazardous decomposition products

- Other decomposition products: no data available
- In the event of fire: see section 5

---

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

**Acute toxicity**

- no data available

- LC₅₀ Inhalation: rat - 7 h - 8.17 mg/l

- LD₅₀ Dermal: rat - 1.600 mg/kg

**Skin corrosion/irritation**

- no data available

---

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>g) Flash point</td>
<td>170 °C - closed cup</td>
</tr>
<tr>
<td>h) Evaporation rate</td>
<td>no data available</td>
</tr>
<tr>
<td>i) Flammability (solid, gas)</td>
<td>no data available</td>
</tr>
<tr>
<td>j) Upper/lower flammability or explosive limits</td>
<td>no data available</td>
</tr>
<tr>
<td>k) Vapour pressure</td>
<td>no data available</td>
</tr>
<tr>
<td>l) Vapour density</td>
<td>no data available</td>
</tr>
<tr>
<td>m) Relative density</td>
<td>1.13 g/mL at 20 °C</td>
</tr>
<tr>
<td>n) Water solubility</td>
<td>no data available</td>
</tr>
<tr>
<td>o) Partition coefficient: n-octanol/water</td>
<td>no data available</td>
</tr>
<tr>
<td>p) Auto-ignition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>q) Decomposition temperature</td>
<td>170 °C -</td>
</tr>
<tr>
<td>r) Viscosity</td>
<td>no data available</td>
</tr>
<tr>
<td>s) Explosive properties</td>
<td>no data available</td>
</tr>
<tr>
<td>t) Oxidizing properties</td>
<td>no data available</td>
</tr>
</tbody>
</table>
Serious eye damage/eye irritation
Eyes - rabbit
Result: Severe eye irritation
Remarks: Severe eye irritation

Respiratory or skin sensitisation
Germ cell mutagenicity

no data available

Carcinogenicity
IARC: 2B - Group 2B: Possibly carcinogenic to humans (3-Chloropropane-1,2-diol)

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
no data available

Additional Information
RTECS: Not available
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity
no data available

12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
Harmful 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: -  IMDG: -  IATA: -

14.2 UN proper shipping name
ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

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

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

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
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available

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.
Acute Tox. Acute toxicity
Aquatic Chronic Chronic aquatic toxicity
Carc. Carcinogenicity
Eye Dam. Serious eye damage
H300 Fatal if swallowed.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H331 Toxic if inhaled.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H361f Suspected of damaging fertility.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.
Muta. Germ cell mutagenicity
Repr. Reproductive toxicity
Skin Sens. Skin sensitisation
STOT RE Specific target organ toxicity - repeated exposure

Full text of R-phrases referred to under sections 2 and 3
T Toxic
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R21 Also harmful in contact with skin.
R23/25 Also toxic by inhalation and if swallowed.
R41 Risk of serious damage to eyes.
R43 May cause sensitisation by skin contact.
R45 May cause cancer.
R48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R60 May impair fertility.
Further information
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