1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Propylene Glycol
Product Number: P4347
Brand: Sigma-Aldrich
Supplier: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone: +1 800-325-5832
Fax: +1 800-325-5052
Emergency Phone #: (314) 776-6555
Preparation Information: Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview
OSHA Hazards
No known OSHA hazards

GHS Classification
Skin irritation (Category 3)
Eye irritation (Category 2B)

GHS Label elements, including precautionary statements
Pictogram: none
Signal word: Warning
Hazard statement(s)
H316: Causes mild skin irritation.
H320: Causes eye irritation.
Precautionary statement(s)
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification
Health hazard: 0
Flammability: 1
Physical hazards: 0

NFPA Rating
Health hazard: 0
Fire: 1
Reactivity Hazard: 0

Potential Health Effects
Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
Skin: May be harmful if absorbed through skin. May cause skin irritation.
Eyes: May cause eye irritation.
Ingestion  May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms  : Propylene glycol
           : 1,2-Propanediol

Formula     : C₃H₈O₂
Molecular Weight  : 76.09 g/mol

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>57-55-6</td>
<td>200-338-0</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

4. 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. 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.

5. FIRE-FIGHTING MEASURES

Conditions of flammability  Not flammable or combustible.

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

Special protective equipment for fire-fighters  Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products  Hazardous decomposition products formed under fire conditions. - Carbon oxides

6. ACCIDENTAL RELEASE MEASURES

Personal precautions  Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Environmental precautions  Do not let product enter drains.

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.

7. HANDLING AND STORAGE

Precautions for safe handling  Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage  Keep container tightly closed in a dry and well-ventilated place.

hygroscopic
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propane-1,2-diol</td>
<td>57-55-6</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>USA. Workplace Environmental Exposure Levels (WEEL)</td>
</tr>
</tbody>
</table>

**Personal protective equipment**

**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).

**Hand 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.

**Eye protection**
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**
Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**
Form: liquid, clear, viscous
Colour: colourless

**Safety data**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>no data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Melting point/range: -60 °C (-76 °F) - lit.</td>
</tr>
<tr>
<td>Boiling point</td>
<td>187 °C (369 °F) - lit.</td>
</tr>
<tr>
<td>Flash point</td>
<td>103 °C (217 °F) - closed cup</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>415 °C (779 °F)</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>2.6 % (V)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>12.5 % (V)</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>0.11 hPa (0.08 mmHg) at 20 °C (68 °F)</td>
</tr>
<tr>
<td>Density</td>
<td>1.036 g/cm³ at 25 °C (77 °F)</td>
</tr>
<tr>
<td>Water solubility</td>
<td>no data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>no data available</td>
</tr>
<tr>
<td>Relative vapour</td>
<td>2.63</td>
</tr>
</tbody>
</table>
density - (Air = 1.0)
Odour no data available
Odour Threshold no data available
Evaporation rate no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Acid chlorides, Acid anhydrides, Oxidizing agents, Chloroformates, Reducing agents

Hazardous decomposition products
Other decomposition products - no data available
Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 20,000 mg/kg

Inhalation LC50
no data available

Dermal LD50
LD50 Dermal - rabbit - 20,800 mg/kg

Other information on acute toxicity
no data available

Skin corrosion/irritation
Skin - Human - Mild skin irritation - 7 d

Serious eye damage/eye irritation
Eyes - rabbit - Mild eye irritation

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

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.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

**Teratogenicity**
no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**
no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**
no data available

**Aspiration hazard**
no data available

**Potential health effects**

*Inhalation*  
May be harmful if inhaled. May cause respiratory tract irritation.

*Ingestion*  
May be harmful if swallowed.

*Skin*  
May be harmful if absorbed through skin. May cause skin irritation.

*Eyes*  
May cause eye irritation.

**Signs and Symptoms of Exposure**
Gastrointestinal disturbance, Nausea, Headache, Vomiting, Central nervous system depression

**Synergistic effects**
no data available

**Additional Information**
RTECS: TY2000000

12. **ECOLOGICAL INFORMATION**

**Toxicity**

*Toxicity to fish*  
mortality NOEC - Pimephales promelas (fathead minnow) - 52,930 mg/l - 96 h

*Toxicity to daphnia and other aquatic invertebrates.*  
mortality NOEC - Daphnia - 13,020 mg/l - 48 h

EC50 - Daphnia magna (Water flea) - > 10,000 mg/l - 48 h

**Persistence and degradability**
no data available

**Bioaccumulative potential**
no data available

**Mobility in soil**
no data available

**PBT and vPvB assessment**
no data available

**Other adverse effects**
no data available

13. **DISPOSAL CONSIDERATIONS**

**Product**
Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**
Dispose of as unused product.

14. **TRANSPORT INFORMATION**

**DOT (US)**
Not dangerous goods
15. REGULATORY INFORMATION

OSHA Hazards
No known OSHA hazards

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

<table>
<thead>
<tr>
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New Jersey Right To Know Components

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California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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