1. PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product name</th>
<th>: Propylamine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Number</td>
<td>: 240958</td>
</tr>
<tr>
<td>Brand</td>
<td>: Aldrich</td>
</tr>
</tbody>
</table>
| Supplier              | : Sigma-Aldrich  
SAINT LOUIS MO  63103  USA |
| Telephone             | : +1 800-325-5832 |
| Fax                   | : +1 800-325-5052 |
| Emergency Phone # (For both supplier and manufacturer) | : (314) 776-6555 |
| Preparation Information | : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956 |

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable liquid, Toxic by ingestion, Toxic by skin absorption, Corrosive

GHS Classification
Flammable liquids (Category 2)  
Acute toxicity, Oral (Category 4)  
Acute toxicity, Inhalation (Category 3)  
Acute toxicity, Dermal (Category 3)  
Skin corrosion (Category 1B)  
Serious eye damage (Category 1)  
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour.  
H302 Harmful if swallowed.  
H311 + H331 Toxic in contact with skin or if inhaled  
H314 Causes severe skin burns and eye damage.  
H402 Harmful to aquatic life.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER or doctor/ physician.
HMIS Classification
- Health hazard: 3
- Flammability: 3
- Physical hazards: 0

NFPA Rating
- Health hazard: 3
- Fire: 3
- Reactivity Hazard: 0

Potential Health Effects
- Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
- Skin: Toxic if absorbed through skin. Causes skin burns.
- Eyes: Causes eye burns.
- Ingestion: Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

- Synonyms: 1-Aminopropane
- Formula: C₃H₉N
- Molecular Weight: 59.11 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
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<tbody>
<tr>
<td>Propylamine</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>107-10-8</td>
</tr>
<tr>
<td>EC-No.</td>
<td>203-462-3</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

- General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

- 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. 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. Continue rinsing eyes during transport to hospital.

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

5. FIREFIGHTING MEASURES

- Suitable extinguishing media: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

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

- Hazardous combustion products: Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

- Further information: Use water spray to cool unopened containers.
6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

**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.

**Methods and materials for containment and cleaning up**
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

**Precautions for safe handling**
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

**Conditions for safe storage**
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
Handle and open container with care. Moisture sensitive.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

**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 AXBEK (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.

**Splash protection**

Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 61 min
Material tested: Vitoject® (KCL 890 / Aldrich Z677698, 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 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.

**Eye 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 and body protection**
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
9. PHYSICAL AND CHEMICAL PROPERTIES

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

**Safety data**
- pH: 12.6 at 100 g/l at 20 °C (68 °F)
- Melting point/freezing point: Melting point/range: -83 °C (-117 °F) - lit.
- Boiling point: 48 °C (118 °F) - lit.
- Flash point: -30 °C (-22 °F)
- Ignition temperature: 325 °C (617 °F)
- Auto-ignition temperature: no data available
- Lower explosion limit: 2 %(V)
- Upper explosion limit: 10.4 %(V)
- Vapour pressure: 1,287.6 hPa (965.8 mmHg) at 55 °C (131 °F)
  330.1 hPa (247.6 mmHg) at 20 °C (68 °F)
  330 hPa (248 mmHg) at 19.6 °C (67.3 °F)
- Density: 0.719 g/cm3 at 25 °C (77 °F)
- Water solubility: completely miscible
- Partition coefficient: log Pow: 0.28 at 23 °C (73 °F)
- Relative vapor density: 2.04
  - (Air = 1.0)
- Odour: ammoniacal
- 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**
Vapours may form explosive mixture with air.

**Conditions to avoid**
Heat, flames and sparks. Extremes of temperature and direct sunlight.

**Materials to avoid**
acids, Acid chlorides, Acid anhydrides, Strong oxidizing agents

**Hazardous decomposition products**
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION
Acute toxicity

**Oral LD50**
LD50 Oral - rat - 370 mg/kg

**Inhalation LC50**
LC50 Inhalation - rat - 4 h - 7,060 mg/m3

**Dermal LD50**
LD50 Dermal - rabbit - 402.6 mg/kg

**Other information on acute toxicity**
no data available

**Skin corrosion/irritation**
Skin - rabbit - Open irritation test - 24 h

Skin - rabbit - Corrosive

**Serious eye damage/eye irritation**
Eyes - rabbit - Corrosive to eyes

**Respiratory or skin sensitization**
no data available

**Germ cell mutagenicity**
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

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. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

**Ingestion**
Toxic if swallowed.
Skin Toxic if absorbed through skin. Causes skin burns.
Eyes Causes eye burns.

Signs and Symptoms of Exposure
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

Synergistic effects
no data available

Additional Information
RTECS: UH9100000

12. ECOLOGICAL INFORMATION

Toxicity
Toxicity to fish LC50 - Leuciscus idus (Golden orfe) - 46 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 70.7 mg/l - 48 h
Toxicity to algae - Scenedesmus quadricauda (Green algae) - 1.7 mg/l - 192 h
- Scenedesmus quadricauda (Green algae) - 2.3 mg/l - 192 h
Toxicity to bacteria LC50 - Pseudomonas putida - 17 h

Persistence and degradability
Biodegradability Remarks: Expected to be biodegradable

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.
Neutralisation will reduce ecotoxic effects. May be harmful to aquatic organisms due to the shift of the pH.

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1277 Class: 3 (8) Packing group: II
Proper shipping name: Propylamine
Reportable Quantity (RQ): 5000 lbs
Marine Pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 1277 Class: 3 (8) Packing group: II EMS-No: F-E, S-C
Proper shipping name: PROPYLAMINE
Marine Pollutant: No

IATA
UN number: 1277    Class: 3 (8)    Packing group: II
Proper shipping name: Propylamine

15. REGULATORY INFORMATION

OSHA Hazards
Flammable liquid, Toxic by ingestion, Toxic by skin absorption, Corrosive

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
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components

| Propylamine | CAS-No. 107-10-8 | Revision Date 1993-04-24 |

Pennsylvania Right To Know Components

| Propylamine | CAS-No. 107-10-8 | Revision Date 1993-04-24 |

New Jersey Right To Know Components

| Propylamine | CAS-No. 107-10-8 | Revision Date 1993-04-24 |

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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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. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.