Section 1 - Product and Company Information

Product Name 1,3-PROPANEDITHIOL, 99%
Product Number P50609
Brand ALDRICH
Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name 1,3-PROPANEDITHIOL
CAS # 109-80-8
SARA 313 No

Formula C3H8S2
Synonyms 1,3-Dimercaptopropane * Dithiotrimethylene glycol
* NDR-132 * 1,3-Propanedimercaptan * Trimethylene
dimercaptan * Trimethylene dithioglycol *
Trimethylenedithiol
RTECS Number: TZ2585500

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Irritant.
Irritating to eyes, respiratory system and skin.
Combustible.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE
If swallowed, wash out mouth with water provided person is
conscious. Call a physician.

INHALATION EXPOSURE
If inhaled, remove to fresh air. If not breathing give
artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE
In case of contact, immediately wash skin with soap and copious
amounts of water.

EYE EXPOSURE
In case of contact, immediately flush eyes with copious amounts
of water for at least 15 minutes.
Section 5 - Fire Fighting Measures

FLASH POINT
141.8 °F  61 °C  Method: closed cup

AUTOIGNITION TEMP
N/A

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: 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.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Combustible liquid. Emits toxic fumes under fire conditions.
Specific Method(s) of Fire Fighting: Use water spray to cool fire-exposed containers.

EXPOSURE HAZARD(S)
Material: Irritant.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area. Shut off all sources of ignition.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP
Cover with an activated carbon adsorbent, take up and place in closed containers. Transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING
User Exposure: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep tightly closed. Keep away from heat and open flame. Store in a cool dry place.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Use only in a chemical fume hood. Safety shower and eye bath.

PERSONAL PROTECTIVE EQUIPMENT
Other: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective
GENERAL HYGIENE MEASURES

Discard contaminated clothing and shoes. Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Color: Slightly yellow-green</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Form: Clear liquid</td>
<td></td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>108.23 AMU</td>
<td></td>
</tr>
<tr>
<td>pH</td>
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<tr>
<td>BP/BP Range</td>
<td>58.0 - 60.0 °C</td>
<td></td>
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<tr>
<td>MP/MP Range</td>
<td>- 79.0 °C</td>
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<tr>
<td>Freezing Point</td>
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<tr>
<td>Vapor Pressure</td>
<td>5 mmHg</td>
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<tr>
<td>Vapor Density</td>
<td>&gt; 1 g/l</td>
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<tr>
<td>Saturated Vapor Conc.</td>
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<tr>
<td>SG/Density</td>
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<tr>
<td>Bulk Density</td>
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<tr>
<td>Odor Threshold</td>
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<tr>
<td>Volatile%</td>
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<tr>
<td>VOC Content</td>
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<td></td>
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<tr>
<td>Water Content</td>
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<tr>
<td>Solvent Content</td>
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<td>Evaporation Rate</td>
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<tr>
<td>Viscosity</td>
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<td>Surface Tension</td>
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<tr>
<td>Partition Coefficient</td>
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<tr>
<td>Decomposition Temp.</td>
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<tr>
<td>Flash Point</td>
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</tr>
<tr>
<td>Method:</td>
<td>closed cup</td>
<td></td>
</tr>
<tr>
<td>Explosion Limits</td>
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<tr>
<td>Flammability</td>
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<td>Autoignition Temp</td>
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<td>Refractive Index</td>
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<td>Optical Rotation</td>
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<td>Miscellaneous Data</td>
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<tr>
<td>Solubility</td>
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</tbody>
</table>

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Materials to Avoid: Bases, Oxidizing agents, Reducing agents, Alkali metals.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Sulfur oxides, Hydrogen sulfide gas.

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.
Multiple Routes: May be harmful by inhalation, ingestion, or skin absorption. Vapor or mist is irritating to the eyes, mucous membranes, and upper respiratory tract.
SIGNS AND SYMPTOMS OF EXPOSURE
Exposure can cause: Nausea, headache, and vomiting.

TOXICITY DATA

Intravenous
Cat
28 MG/KG
LD50

Section 12 - Ecological Information
No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: Mercaptans, liquid, flammable, n.o.s.
UN#: 3336
Class: 3
Packing Group: Packing Group III
Hazard Label: Flammable liquid
PIH: Not PIH

IATA
Proper Shipping Name: Mercaptans, liquid, flammable, n.o.s.
IATA UN Number: 3336
Hazard Class: 3
Packing Group: III

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION
Symbol of Danger: Xi
Indication of Danger: Irritant.
R: 36/37/38
Risk Statements: Irritating to eyes, respiratory system and skin.
S: 26-36
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Irritant.
Risk Statements: Irritating to eyes, respiratory system and skin.
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing. Keep container tightly closed in a cool well-ventilated place.
US Statements: Combustible.
UNITED STATES REGULATORY INFORMATION
   SARA LISTED: No
   TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION
   WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
   DSL: Yes
   NDSL: No

Section 16 - Other Information

WARRANTY
   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 Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2006 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.