

**Material Safety Data Sheet**

Version 3.0  
Revision Date 08/26/2008  
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**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : (±)-*trans*-1,2-Diaminocyclohexane

Product Number : 270016  
Brand : Aldrich

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
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**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula : C<sub>6</sub>H<sub>14</sub>N<sub>2</sub>  
Molecular Weight : 114.19 g/mol

| CAS-No.                       | EC-No. | Index-No. | Concentration |
|-------------------------------|--------|-----------|---------------|
| <b>1,2-Cyclohexanediamine</b> |        |           |               |
| 1121-22-8                     | -      | -         | -             |

**3. HAZARDS IDENTIFICATION****Emergency Overview****OSHA Hazards**

Combustible Liquid, Corrosive

**HMIS Classification**

**Health Hazard:** 3  
**Flammability:** 2  
**Physical hazards:** 0

**NFPA Rating**

**Health Hazard:** 3  
**Fire:** 2  
**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** May be harmful if absorbed through skin. Causes skin burns.

**Eyes** Causes eye burns.

**Ingestion** May be harmful if swallowed. Causes burns.

#### 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. Consult a physician.

**In case of eye contact**

Continue rinsing eyes during transport to hospital. 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.

#### 5. FIRE-FIGHTING MEASURES

**Flammable properties**

Flash point 68 °C (154 °F) - closed cup

Ignition temperature no data available

**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.

#### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

**Environmental precautions**

Do not let product enter drains.

**Methods for 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

**Handling**

Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

**Storage**

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.

## 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 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.

#### Eye protection

Safety glasses

#### Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

#### 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   | clear, liquid |
| Colour | light yellow  |

### Safety data

|                       |                                               |
|-----------------------|-----------------------------------------------|
| pH                    | no data available                             |
| Melting point         | 14 - 15 °C (57 - 59 °F)                       |
| Boiling point         | 79 - 81 °C (174 - 178 °F) at 20 hPa (15 mmHg) |
| Flash point           | 68 °C (154 °F) - closed cup                   |
| Ignition temperature  | no data available                             |
| Lower explosion limit | no data available                             |
| Upper explosion limit | no data available                             |
| Vapour pressure       | 0.5 hPa (0.4 mmHg) at 20 °C (68 °F)           |
| Density               | 0.951 g/mL at 25 °C (77 °F)                   |
| Water solubility      | no data available                             |

## 10. STABILITY AND REACTIVITY

### Storage stability

Stable under recommended storage conditions.

### Materials to avoid

Strong oxidizing agents, Strong acids

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - nitrogen oxides (NO<sub>x</sub>)

**11. TOXICOLOGICAL INFORMATION****Acute toxicity**

no data available

**Irritation and corrosion**

no data available

**Sensitisation**

no data available

**Chronic exposure**

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.

**Signs and Symptoms of Exposure**

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Potential Health Effects**

|                   |                                                                                                                                 |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Inhalation</b> | May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. |
| <b>Skin</b>       | May be harmful if absorbed through skin. Causes skin burns.                                                                     |
| <b>Eyes</b>       | Causes eye burns.                                                                                                               |
| <b>Ingestion</b>  | May be harmful if swallowed. Causes burns.                                                                                      |

**12. ECOLOGICAL INFORMATION****Elimination information (persistence and degradability)**

no data available

**Ecotoxicity effects**

no data available

**Further information on ecology**

no data available

**13. DISPOSAL CONSIDERATIONS**

**Product**

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. 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: 2735 Class: 8 Packing group: II  
Proper shipping name: Polyamines, liquid, corrosive, n.o.s. (1,2-Cyclohexanediamine)  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN-Number: 2735 Class: 8 Packing group: II EMS-No: F-A, S-B  
Proper shipping name: POLYAMINES, LIQUID, CORROSIVE, N.O.S. (1,2-Cyclohexanediamine)  
Marine pollutant: No

**IATA**

UN-Number: 2735 Class: 8 Packing group: II  
Proper shipping name: Polyamines, liquid, corrosive n.o.s. (1,2-Cyclohexanediamine)

**15. REGULATORY INFORMATION****OSHA Hazards**

Combustible Liquid, Corrosive

**DSL Status**

This product contains the following components that are not on the Canadian DSL nor NDSL lists.

1,2-Cyclohexanediamine

CAS-No.  
1121-22-8

**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**

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

**Pennsylvania Right To Know Components**

1,2-Cyclohexanediamine

CAS-No. Revision Date  
1121-22-8

**New Jersey Right To Know Components**

1,2-Cyclohexanediamine

CAS-No. Revision Date  
1121-22-8

**California Prop. 65 Components**

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

**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 Co., 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.