

## Material Safety Data Sheet

Version 3.1

Revision Date 08/27/2010

Print Date 05/24/2012

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : (1R,2R)-(-)-1,2-Diaminocyclohexane

Product Number : 346721

Brand : Aldrich

Company : 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

## 2. HAZARDS IDENTIFICATION

## Emergency Overview

## OSHA Hazards

Corrosive

## GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)

H314 Causes severe skin burns and eye damage.

Precautionary statement(s)

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: 0

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.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : (1R)-trans-1,2-Cyclohexanediamine

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>(1R,2R)-(-)-1,2-Diaminocyclohexane</b> |        |           |               |
| 20439-47-8                                | -      | -         | -             |

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#### 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**

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.

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#### 5. FIRE-FIGHTING MEASURES

##### **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.

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#### 6. ACCIDENTAL RELEASE MEASURES

##### **Personal precautions**

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

##### **Environmental precautions**

Do not let product enter drains.

##### **Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

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#### 7. HANDLING AND STORAGE

##### **Precautions for safe handling**

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

##### **Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place.

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## 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 particle respirator type N100 (US) or type P3 (EN 143) 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

Face shield and safety glasses 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, 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.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

|        |             |
|--------|-------------|
| Form   | crystalline |
| Colour | white       |

### Safety data

|                       |                             |
|-----------------------|-----------------------------|
| pH                    | no data available           |
| Melting point         | 41 °C (106 °F)              |
| Boiling point         | no data available           |
| Flash point           | 70 °C (158 °F) - closed cup |
| Ignition temperature  | no data available           |
| Lower explosion limit | no data available           |
| Upper explosion limit | no data available           |
| Water solubility      | no data available           |

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Conditions to avoid

no data available

### Materials to avoid

Strong oxidizing agents

### Hazardous decomposition products

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

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## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity**

no data available

**Skin corrosion/irritation**

no data available

**Serious eye damage/eye irritation**

no data available

**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

**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**

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

**Signs and Symptoms of Exposure**

Cough, Shortness of breath, Headache, Nausea, Vomiting

**Additional Information**

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**12. ECOLOGICAL INFORMATION****Toxicity**

no data available

**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

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**13. DISPOSAL CONSIDERATIONS****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION****DOT (US)**

UN-Number: 3259 Class: 8 Packing group: II  
Proper shipping name: Polyamines, solid, corrosive n.o.s. ((1R,2R)-(-)-1,2-Diaminocyclohexane)  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN-Number: 3259 Class: 8 Packing group: II EMS-No: F-A, S-B  
Proper shipping name: POLYAMINES, SOLID, CORROSIVE, N.O.S. ((1R,2R)-(-)-1,2-Diaminocyclohexane)  
Marine pollutant: No

**IATA**

UN-Number: 3259 Class: 8 Packing group: II  
Proper shipping name: Polyamines, solid, corrosive, n.o.s. ((1R,2R)-(-)-1,2-Diaminocyclohexane)

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

Corrosive

**DSL Status**

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

|                                    |                       |
|------------------------------------|-----------------------|
| (1R,2R)-(-)-1,2-Diaminocyclohexane | CAS-No.<br>20439-47-8 |
|------------------------------------|-----------------------|

**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**

Acute Health Hazard

**Massachusetts Right To Know Components**

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

**Pennsylvania Right To Know Components**

|                                    |                       |               |
|------------------------------------|-----------------------|---------------|
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|------------------------------------|-----------------------|---------------|

**New Jersey Right To Know Components**

|                                    |                       |               |
|------------------------------------|-----------------------|---------------|
| (1R,2R)-(-)-1,2-Diaminocyclohexane | CAS-No.<br>20439-47-8 | Revision Date |
|------------------------------------|-----------------------|---------------|

**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.

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**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.

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