



# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/27/2017

Version 5

Reviewed on 07/19/2013

## 1 Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name :** (1S,2S)-(+)-N,N'-Dimethylcyclohexane-1,2-diamine

**Product number :** 286576

**CAS-No. :** 87583-89-9

**Synonyms:** (1S,2S)-(+)-1,2-Bis(methylamino)cyclohexane

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Identified uses :** Laboratory chemicals, Manufacture of substances

### 1.3 Details of the supplier of the safety data sheet

**Manufacturer/Supplier:** J&K Scientific LLC

601 Interchange Blvd, Newark, DE 19711

Telephone/Fax: +1 952 942 3333 / +1 952 942 3322

E-mail address: jkus@jk-scientific.com

J&K Scientific Ltd.

AEF 18/F Bldg-D Majesty Garden 6 Bei-Si-Huan-Zhong Rd. Beijing

Telephone/Fax: +86 10 8284 8833 / +86 10 8284 9933

E-mail address: jkinfo@jkchemical.com

**Preparation Information:** Product safety department

**Emergency telephone number:** +1 800 424 9300 (for USA & Canada)

## 2 Hazards identification

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)



GHS05 Corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

### 2.2 Label elements

#### GHS label elements

The substance is classified and labeled according to the Globally Harmonized System (GHS).

#### Hazard pictograms



GHS05

GHS07

#### Signal word

Danger

#### Hazard statements

Harmful if swallowed.

Causes severe skin burns and eye damage.

#### Precautionary statements

Wear protective gloves/protective clothing/eye protection/face protection.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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Immediately call a POISON CENTER/doctor.

## Classification system

**NFPA ratings (scale 0 - 4)**



Health = 3  
Fire = 2  
Reactivity = 0

**HMIS-ratings (scale 0 - 4)**



Health = 4  
Fire = 2  
Reactivity = 0

## 2.3 Other hazards

### Results of PBT and vPvB assessment

**PBT:** Not applicable.  
**vPvB:** Not applicable.

## 3 Composition/information on ingredients

### Chemical characterization: Substances

**MF:** C<sub>8</sub>H<sub>18</sub>N<sub>2</sub>  
**MW:** 142.24 g/mol  
**CAS-No. Description** 87583-89-9 (1S,2S)-(+)-N,N'-Dimethylcyclohexane-1,2-diamine

## 4 First-aid measures

### 4.1 Description of first aid measures

**General information:** Consult a physician. Show this safety data sheet to the doctor in attendance.

**After inhalation:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**After skin contact:** Wash off with soap and plenty of water. Consult a physician.

**After eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**After swallowing:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2 Information for doctor

**Most important symptoms and effects, both acute and delayed** To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Indication of any immediate medical attention and special treatment needed** No data available

## 5 Fire-fighting measures

### 5.1 Extinguishing media

**Suitable extinguishing agents:** Water spray  
Alcohol-resistant foam  
Dry chemical  
Carbon dioxide

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## 5.2 Special hazards arising from the substance or mixture

Carbon oxides  
Nitrogen oxides  
Carbon oxides, nitrogen oxides (NOx)

## 5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

## 6 Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust. Remove persons from danger area.

### Environmental precautions:

Do not allow to enter sewers/ surface or ground water.

### 6.2 Methods and material for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

### 6.3 Reference to other sections

See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### Protective Action Criteria for Chemicals

PAC-1: Substance is not listed.  
PAC-2: Substance is not listed.  
PAC-3: Substance is not listed.

## 7 Handling and storage

### 7.1 Handling

#### Precautions for safe handling

Thorough dedusting.  
Avoid contact with skin and eyes  
Provide appropriate exhaust ventilation at places where dust is formed  
Normal measures for preventive fire protection

#### Information about protection against explosions and fires

No special measures required.

### 7.2 Storage

Keep container tightly closed in a dry and well-ventilated place  
Keep in a cool place  
Recommended storage temperature 2 - 8 °C  
Store under inert gas  
Sensitive to carbon dioxide

#### Conditions for safe storage, including any incompatibilities

Store in a 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. Store under inert gas.  
Sensitive to carbon dioxide

#### Storage Class (TRGS510):

LGK 8B: Non-combustible corrosive substances

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## 8 Exposure controls/personal protection

### 8.1 Control parameters

**Components with limit values that require monitoring at the workplace**

Not required.

**Additional information:**

The lists that were valid during the creation were used as basis.

### Exposure controls

### 8.2 Personal protective equipment

**General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes.  
Avoid contact with the eyes and skin.

**Breathing equipment:**

Not required.

**Protection of hands:**



Protective gloves

**Material of gloves :**

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

**Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Eye protection:**



Tightly sealed goggles

**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.

## 9 Physical and chemical properties

### Information on basic physical and chemical properties

#### General Information

##### Appearance

**Form:**

Crystalline

**Color:**

Beige

**Odor:**

uncharacteristic

**Odor threshold:**

Not determined.

**pH-value:**

Not applicable.

##### Change in condition

**Melting point/Melting range:**

39-44 °C (102-111 °F) (760mmHg)

**Boiling point/Boiling range:**

Undetermined.

**Flash point:**

74 °C (165 °F) (760mmHg)

**Flammability (solid, gaseous):**

Product is not flammable.

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## Ignition temperature:

Decomposition temperature: Not determined.

Auto igniting: Not determined.

Danger of explosion: Product does not present an explosion hazard.

## Explosion limits

Lower: Not determined.

Upper: Not determined.

Vapor pressure: Not applicable.

Density at 20 °C (68 °F): 0.902 g/cm<sup>3</sup> (7.527 lbs/gal)

Bulk density: Not determined

Relative density: Not determined.

Vapor density: Not applicable.

Evaporation rate: Not applicable.

## Solubility in / Miscibility with

Water: Not determined.

Partition coefficient (n-octanol/water): Not determined.

## Viscosity:

Dynamic: Not applicable.

Kinematic: Not applicable.

Other information: no data available

## 10 Stability and reactivity

10.1 Reactivity: No data available

10.2 Chemical stability: No data available

### 10.3 Possibility of hazardous reactions

No dangerous reactions known.

### 10.4 Conditions to avoid

Carbon dioxide

### 10.5 Incompatible materials

Strong oxidizing agents

Acids

Carboxylic acid

Strong oxidizing agents, acids, Carboxylic acid

### 10.6 Hazardous decomposition products

Other decomposition products - No data available

## 11 Toxicological information

### 11.1 Information on toxicological effects

#### Primary irritant effect

on the skin: Strong caustic effect on skin and mucous membranes.

on the eye: Strong caustic effect.

Strong irritant with the danger of severe eye injury.

Sensitization: No sensitizing effects known.

#### Carcinogenic categories

#### IARC (International Agency for

#### Research on Cancer)

Substance is not listed.

#### NTP (National Toxicology Program)

Substance is not listed.

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OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

## 12 Ecological information

### 12.1 Toxicity

**Aquatic toxicity** No data available

### 12.2 Persistence and degradability

No data available

### 12.3 Behavior in environmental systems

**Bioaccumulative potential :** No data available

**Mobility in soil :** No data available

### 12.4 Additional ecological information

#### General notes:

Water hazard class 3 (Self-assessment): extremely hazardous for water  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Must not reach bodies of water or drainage ditch undiluted or unneutralized.  
Danger to drinking water if even extremely small quantities leak into the ground.

### 12.5 Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

**12.6 Other adverse effects :** No data available

## 13 Disposal considerations

### 13.1 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.

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

**13.3 Recommendation** Disposal must be made according to official regulations.

## 14 Transport information

### 14.1 UN-Number

DOT, ADR, IMDG, IATA UN3259

### 14.2 UN proper shipping name

DOT Amines, solid, corrosive, n.o.s. ((1S,2S)-(+)-N,N'-Dimethylcyclohexane-1,2-diamine)

ADR 3259 Amines, solid, corrosive, n.o.s. ((1S,2S)-(+)-N,N'-Dimethylcyclohexane-1,2-diamine)

IMDG, IATA AMINES, SOLID, CORROSIVE, N.O.S. ((1S,2S)-(+)-N,N'-Dimethylcyclohexane-1,2-diamine)

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**Product name :** (1S,2S)-(+)-N,N'-Dimethylcyclohexane-1,2-diamine

## 14.3 Transport hazard class(es)

DOT



**Class** 8 Corrosive substances  
**Label** 8

ADR, IMDG, IATA



**Class** 8 Corrosive substances  
**Label** 8

## 14.4 Packing group

DOT, ADR, IMDG, IATA II

## 14.5 Environmental hazards:

**Marine pollutant:** No

**Special precautions for user** Warning: Corrosive substances

**Danger code (Kemler):** 80

**EMS Number:** F-A,S-B

**Segregation groups** Alkalis

**Stowage Category** A

**Segregation Code** SG35 Stow "separated from" acids.

## Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

**14.6 Transport/Additional information:** Not dangerous according to the above specifications.

DOT

**Quantity limitations** On passenger aircraft/rail: 15 kg  
 On cargo aircraft only: 50 kg

ADR

**Excepted quantities (EQ)** Code: E2  
 Maximum net quantity per inner packaging: 30 g  
 Maximum net quantity per outer packaging: 500 g

IMDG

**Limited quantities (LQ)** 1 kg  
**Excepted quantities (EQ)** Code: E2  
 Maximum net quantity per inner packaging: 30 g  
 Maximum net quantity per outer packaging: 500 g

**UN "Model Regulation":**

UN 3259 AMINES, SOLID, CORROSIVE, N.O.S. ((1S,2S)-(+)-N,N'-DIMETHYLCYCLOHEXANE-1,2-DIAMINE), 8, II

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## 15 Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### Sara

**Section 355 (extremely hazardous substances):** Substance is not listed.

**Section 313 (Specific toxic chemical listings):** Substance is not listed.

**TSCA (Toxic Substances Control Act):** Substance is not listed.

#### Proposition 65

**Chemicals known to cause cancer:** Substance is not listed.

**Chemicals known to cause reproductive toxicity for females:** Substance is not listed.

**Chemicals known to cause reproductive toxicity for males:** Substance is not listed.

**Chemicals known to cause developmental toxicity:** Substance is not listed.

#### Carcinogenic categories

**EPA (Environmental Protection Agency)** Substance is not listed.

**TLV (Threshold Limit Value established by ACGIH)** Substance is not listed.

**NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.

#### GHS label elements

The substance is classified and labeled according to the Globally Harmonized System (GHS).

#### Hazard pictograms



GHS05

GHS07

#### Signal word

Danger

#### Hazard statements

Harmful if swallowed.

Causes severe skin burns and eye damage.

#### Precautionary statements

Wear protective gloves/protective clothing/eye protection/face protection.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER/doctor.

### 15.2 Chemical safety

#### assessment:

A Chemical Safety Assessment has not been carried out.

## 16 Other information

The above information is believed to be correct but does not represent any guarantee of the properties of the product, Some new information or amendments may be added afterwards. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. The products are supposed to be used promptly after purchase in consideration of safety. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and



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handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility. Any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
ACGIH: American Conference of Governmental Industrial Hygienists  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
NIOSH: National Institute for Occupational Safety  
OSHA: Occupational Safety & Health  
TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
Acute Tox. 4: Acute toxicity – Category 4  
Skin Corr. 1A: Skin corrosion/irritation – Category 1A  
Eye Dam. 1: Serious eye damage/eye irritation – Category 1