

## Chemical Safety Data Sheet MSDS / SDS

## Cyclohexylamine

Revision Date:2024-12-21 Revision Number:1

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

## Product identifier

Product name : Cyclohexylamine  
CBnumber : CB8139274  
CAS : 108-91-8  
EINECS Number : 203-629-0  
Synonyms : Cyclohexylamine,CHA

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

## Precautionary statements

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.  
P233 Keep container tightly closed.  
P240 Ground/bond container and receiving equipment.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P264 Wash hands thoroughly after handling.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

P307+P311 IF exposed: call a POISON CENTER or doctor/physician.

P370+P378 In case of fire: Use ... for extinction.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

#### **Hazard statements**

H226 Flammable liquid and vapour

H302 Harmful if swallowed

H312 Harmful in contact with skin

H314 Causes severe skin burns and eye damage

H335 May cause respiratory irritation

H340 May cause genetic defects

H361 Suspected of damaging fertility or the unborn child

H370 Causes damage to organs

H402 Harmful to aquatic life

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## SECTION 3: Composition/information on ingredients

### **Substance**

Product name	: Cyclohexylamine
Synonyms	: Cyclohexylamine,CHA
CAS	: 108-91-8
EC number	: 203-629-0
MF	: C <sub>6</sub> H <sub>13</sub> N
MW	: 99.17

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## SECTION 4: First aid measures

### **Description of first aid measures**

#### **General advice**

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### **If inhaled**

After inhalation: fresh air. Call in physician.

#### **In case of skin contact**

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

#### **In case of eye contact**

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

#### **If swallowed**

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

### Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### Indication of any immediate medical attention and special treatment needed

No data available

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## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

Carbon dioxide (CO<sub>2</sub>) Foam Dry powder

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### Special hazards arising from the substance or mixture

Carbon oxides Nitrogen oxides (NO<sub>x</sub>) Combustible.

Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

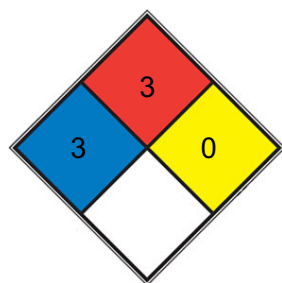
### Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### Further information

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

### NFPA 704



**HEALTH 3** Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

**FIRE 3** Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions. Liquids having a flash point below 22.8 °C (73 °F) and having a boiling point at or above 37.8 °C (100 °F) or having a flash point between 22.8 and 37.8 °C (73 and 100 °F). (e.g. gasoline, [acetone](#))

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☒ REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N2](#))

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☐ SPEC.

☐ HAZ.

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition.

Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

### Environmental precautions

Do not let product enter drains. Risk of explosion.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g.

Chemisorb?). Dispose of properly. Clean up affected area.

### Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### Precautions for safe handling

### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

### Conditions for safe storage, including any incompatibilities

### Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

Handle under inert gas. Protect from moisture. Air sensitive.

### Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### control parameter

#### Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

### Exposure controls

#### Personal protective equipment

##### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

##### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact Material: Viton?

Minimum layer thickness: 0,7 mm Break through time: 480 min

Material tested: Vitoject? (KCL 890 / Aldrich Z677698, Size M)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact Material: butyl-rubber

Minimum layer thickness: 0,7 mm Break through time: 120 min Material tested: Butoject? (KCL 898)

##### Body Protection

Flame retardant antistatic protective clothing.

##### Respiratory protection

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

##### Control of environmental exposure

Do not let product enter drains. Risk of explosion.

#### Exposure limits

TLV-TWA 10 ppm ( $\sim 40 \text{ mg/m}^3$ ) (ACGIH).

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Appearance	light yellow liquid
Odour	amine-like
Odour Threshold	No data available

pH	11,5 at 100 g/l at 20 °C
Melting point/freezing point	Melting point/range: -17 °C - lit.
Initial boiling point and boiling range	134 °C - lit.
Flash point	27 °C - closed cup
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	Upper explosion limit: 9,4 %(V) Lower explosion limit: 1,6 %(V)
Vapour pressure	30,66 hPa at 37,7 °C 13,33 hPa at 22 °C
Vapour density	3,42 - (Air = 1.0)
Relative density	0,867 g/cm <sup>3</sup> at 25 °C - lit. 0,86 at 25 °C
Water solubility	at 20 °C completely miscible
Partition coefficient: n-octanol/water	log Pow: 3,7 at 25 °C - Bioaccumulation is not expected.
Autoignition temperature	293 °C
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: 2,1 mPa.s at 20 °C
Explosive properties	No data available
Oxidizing properties	No data available

### Other safety information

Surface tension 68,8 mN/m at 1g/l at 20 °C

- OECD Test Guideline 115 Dissociation constant 10,68 at 25 °C

Relative vapor density

3,42 - (Air = 1.0)

## SECTION 10: Stability and reactivity

### Reactivity

Vapor/air-mixtures are explosive at intense warming.

### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### Possibility of hazardous reactions

Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines! Violent reactions possible with:

Strong oxidizing agents Acid chlorides

Acid anhydrides halogens

organic nitro compounds sodium hypochlorite acids

### Conditions to avoid

Heating.

## Incompatible materials

various plastics, Copper, Copper alloys

## Hazardous decomposition products

In the event of fire: see section 5

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# SECTION 11: Toxicological information

## Information on toxicological effects

### Acute toxicity

LD50 Oral - Rat - male - 432 mg/kg Remarks: (ECHA)

Inhalation

Acute toxicity estimate Dermal - 1.100,1 mg/kg (Expert judgment)

### Skin corrosion/irritation

Skin - Rabbit

Result: Corrosive - 20 h Remarks: (ECHA)

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

### Serious eye damage/eye irritation

Eyes - Rabbit Result: Corrosive Remarks: (ECHA)

### Respiratory or skin sensitization

No data available

### Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation Result: negative

Remarks: (ECHA)

Test Type: unscheduled DNA synthesis assay Test system: rat hepatocytes

Metabolic activation: without metabolic activation Result: negative

Remarks: (ECHA)

### Carcinogenicity

No data available

### Reproductive toxicity

Suspected of damaging the unborn child. Suspected of damaging fertility.

### Specific target organ toxicity - single exposure

No data available

### Specific target organ toxicity - repeated exposure

No data available

### Aspiration hazard

No data available

## **Toxicity**

LD50 orally in rats: 0.71 ml/kg (Smyth)

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## **SECTION 12: Ecological information**

### **Toxicity**

#### **Toxicity to fish**

semi-static test LC50 - *Oryzias latipes* - 33 mg/l - 96 h (OECD Test Guideline 203)

#### **Toxicity to daphnia and other aquatic invertebrates**

static test EC50 - *Daphnia magna* (Water flea) - 36,3 mg/l - 48 h (OECD Test Guideline 202)

#### **Toxicity to algae**

static test ErC50 - *Pseudokirchneriella subcapitata* - 29,3 mg/l - 72 h (OECD Test Guideline 201)

#### **Toxicity to bacteria**

static test EC50 - activated sludge - 2.152 mg/l - 3 h  
(ISO 8192)

### **Persistence and degradability**

Biodegradability aerobic - Exposure time 20 d

Result: 92 % - Readily biodegradable. (Regulation (EC) No. 440/2008, Annex, C.4-E)

### **Bioaccumulative potential**

No data available

### **Mobility in soil**

No data available

### **Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### **Other adverse effects**

No data available

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## **SECTION 13: Disposal considerations**

### **Waste treatment methods**

#### **Incompatibilities**

Cyclohexylamine reacts violently with acid. Contact with strong oxidizers may cause fire and explosion hazard. Incompatible with organic anhydrides; isocyanates, vinyl acetate; acrylates, substituted allyls; alkylene oxides; epichlorohydrin, ketones, aldehydes, alcohols, glycols, phenols, cresols, caprolactum solution; lead. Corrosive to copper alloys, zinc, or galvanized steel.

### **Product**

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and

containers, or contact us there if you have further questions.

#### **Waste Disposal**

Incineration; incinerator equipped with a scrubber or thermal unit to reduce nitrogen oxides emissions.

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## **SECTION 14: Transport information**

#### **UN number**

ADR/RID: 2357 IMDG: 2357

#### **UN proper shipping name**

ADR/RID: CYCLOHEXYLAMINE IMDG: CYCLOHEXYLAMINE

#### **Transport hazard class(es)**

ADR/RID: 8 (3) IMDG: 8 (3) IATA: 8 (3)

#### **Packaging group**

ADR/RID: II IMDG: II IATA: II

#### **Environmental hazards**

ADR/RID: no IMDG Marine pollutant: no IATA: no

#### **Special precautions for user**

No data available

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## **SECTION 15: Regulatory information**

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

#### **Regulations on the Safety Management of Hazardous Chemicals**

China Catalog of Hazardous chemicals 2015: Listed. website: <https://www.mem.gov.cn/>

#### **Measures for Environmental Management of New Chemical Substances**

Vietnam National Chemical Inventory: Listed. website: <https://chemicaldata.gov.vn/>

EC Inventory: Listed.

New Zealand Inventory of Chemicals (NZIoC): Listed. website: <https://www.epa.govt.nz/>

Korea Existing Chemicals List (KECL): Listed. website: <http://ncis.nier.go.kr>

United States Toxic Substances Control Act (TSCA) Inventory: Listed. website: <https://www.epa.gov/>

European Inventory of Existing Commercial Chemical Substances (EINECS): Listed. website: <https://echa.europa.eu/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS): Listed. website: <https://emb.gov.ph/>

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC): Listed. website: <https://www.mee.gov.cn/>

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## **SECTION 16: Other information**

### **Abbreviations and acronyms**

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

## References

- 【1】 CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- 【2】 ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- 【3】 ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>
- 【4】 eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:  
[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- 【5】 ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- 【6】 Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- 【7】 HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- 【8】 IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- 【9】 IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- 【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

### Disclaimer:

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