

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

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.

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

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

Continuerinsing.

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

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

P273 Avoid release to the environment.

P271 Use only outdoors or in a well-ventilated area.

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

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

SECTION 3: Composition/information on ingredients

Substance

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

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

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂) 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_x) 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.

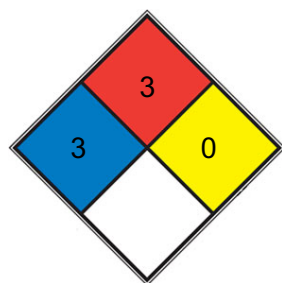
Advice for firefighters

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](#))

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

☐ SPEC.

☐ HAZ.

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.

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

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).

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).

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).

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 ³ 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

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)

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

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 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.

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

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/>

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

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

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/>

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

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

EC Inventory:Listed.

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
- 【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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