

Chemical Safety Data Sheet MSDS / SDS

cis-bicyclo[4.4.0]decane SDS

Revision Date:2024-04-25 Revision Number:1

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|-----------|------------|------------|------------|------------|------------|------------|------------|
| Section 1 | Section 2 | Section 3 | Section 4 | Section 5 | Section 6 | Section 7 | Section 8 |
| Section 9 | Section 10 | Section 11 | Section 12 | Section 13 | Section 14 | Section 15 | Section 16 |

SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product identifier**

Product name: cis-bicyclo[4.4.0]decane

CAS: 493-01-6

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.in

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SECTION 2: Hazards identification**Classification of the substance or mixture**

Flammable liquids, Category 3

Skin irritation, Category 2

Eye irritation, Category 2
Acute toxicity - Category 4, Inhalation
Specific target organ toxicity - single exposure, Category 3

GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

Hazard statement(s)

H226 Flammable liquid and vapour
H315 Causes skin irritation
H319 Causes serious eye irritation
H332 Harmful if inhaled
H335 May cause respiratory irritation

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P264 Wash ... thoroughly after handling.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.

Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P370+P378 In case of fire: Use ... to extinguish.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P321 Specific treatment (see ... on this label).
P332+P317 If skin irritation occurs: Get medical help.
P362+P364 Take off contaminated clothing and wash it before reuse.

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

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P317 Get medical help.

P319 Get medical help if you feel unwell.

Storage

P403+P235 Store in a well-ventilated place. Keep cool.

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

P405 Store locked up.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name: cis-bicyclo[4.4.0]decane

Common names and synonyms: cis-bicyclo[4.4.0]decane

CAS number: 493-01-6

EC number: 207-770-9

Concentration: 100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer for medical attention .

Most important symptoms/effects, acute and delayed

Inhalation or ingestion irritates nose and throat, causes numbness, headache, vomiting; urine may become blue. Irritates eyes. Liquid de-fats skin and causes cracking and secondary infection; eczema may develop. (USCG, 1999)

Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for shock and treat if necessary . Anticipate seizures and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal . Naphthalene and Related Compounds

SECTION 5: Firefighting measures**Suitable extinguishing media**

To fight fire use foam, carbon dioxide, dry chemical.

Specific hazards arising from the chemical

Excerpt from ERG Guide 130 [Flammable Liquids (Water-Immiscible / Noxious)]: HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water. (ERG, 2016)

Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Ventilation. Collect leaking liquid in sealable containers. Carefully collect remainder. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

SECTION 7: Handling and storage

Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Fireproof. Separated from oxidants. Cool. Keep in the dark. Well closed. Handle and store under Nitrogen. ...Potentially explosive peroxides can form on long time storage in contact with air. Light and heat accelerate peroxide /formation/.

SECTION 8: Exposure controls/personal protection

Control parameters**Occupational Exposure limit values**

no data available

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)**Eye/face protection**

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

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|-----------------|---|
| Physical state: | Decahydronaphthalene is a clear colorless liquid with an aromatic odor. Flash point 134°F. Less dense than water and insoluble in water. Vapors heavier than air. |
| Colour: | Clear colorless liquid |
| Odour: | Slight odor resembling menthol; pure decalin does not smell of naphthalene |

| | |
|---|--|
| Melting point/freezing point: | 214°C(lit.) |
| Boiling point or initial boiling point and boiling range: | 193°C(lit.) |
| Flammability: | Flammable. |
| Lower and upper explosion limit/flammability limit: | LOWER 0.7% @ 100 DEG C; UPPER 4.9% @ 100 DEG C |
| Flash point: | 58°C |
| Auto-ignition temperature: | 482°F |
| Decomposition temperature: | no data available |
| pH: | no data available |
| Kinematic viscosity: | 1.788 cP @ 70 deg F |
| Solubility: | Very sol in alcohol, methanol, ether, chloroform. Miscible with propyl and isopropyl alcohol; miscible with most ketones and esters. |
| Partition coefficient n-octanol/water: | 4.6 |
| Vapour pressure: | 0.735mmHg at 25°C |
| Density and/or relative density: | 0.897g/mL at 25°C(lit.) |
| Relative vapour density: | 4.76 (vs air) |
| Particle characteristics: | no data available |

SECTION 10: Stability and reactivity

Reactivity

The substance can form explosive peroxides. On combustion, forms toxic gases. Reacts with oxidants.

Chemical stability

On long exposure to air forms dangerous concentration of peroxide.

Possibility of hazardous reactions

MODERATE, WHEN EXPOSED TO HEAT OR FLAME ...As a result of flow, agitation, etc., electrostatic charges can be generated. Saturated aliphatic hydrocarbons, such as DECAHYDRONAPHTHALENE, may be incompatible with strong oxidizing agents like nitric acid. Charring of the hydrocarbon may occur followed by ignition of unreacted hydrocarbon and other nearby combustibles. In other settings, aliphatic saturated hydrocarbons are mostly unreactive. They are not affected by aqueous solutions of acids, alkalis, most oxidizing agents, and most reducing agents. Oxidizes readily in air to form unstable peroxides that may explode spontaneously [Bretherick, 1979 p.151-154].

Conditions to avoid

no data available

Incompatible materials

Can react with oxidizing materials.

Hazardous decomposition products

When heated to decomposition it emits acrid smoke and fumes.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 4.2 g/kg

Inhalation: LC50 Rat inhalation 710 ppm/4 hr

Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information**Toxicity**

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

Degradation in seawater by oil oxidizing micro-organisms: 13.6% breakdown after 21 days at 22 deg C in stoppered bottles containing a 1000 ppm mixture of alkanes, cycloalkanes, and aromatics

Bioaccumulative potential

An estimated BCF of 660 was calculated for decahydronaphthalene(SRC), using a water solubility of 0.889 mg/l(1) and a regression-derived equation(2). Over a test period of 8 weeks and using orange-red killifish (*Oryzias latipes*), BCF's of 839-2,380 at a test concn of 2.1 mg/l and 1,290-2,400 at a test concn of 0.21 mg/l were measured for the cis-isomer; BCF's of 1,170-3,050 at a test concn of 2.8 mg/l and 1,300-2,510 at a test concn of 0.28 mg/l were measured for the trans-isomer(3). According to a classification scheme(4), these BCF values suggest the potential for bioconcentration in aquatic organisms is very high(SRC).

Mobility in soil

The Koc of decahydronaphthalene is estimated as 4,600(SRC), using a water solubility of 0.889 mg/l(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that decahydronaphthalene is expected to have slight mobility in soil.

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN1147 (For reference only, please check.)

IMDG: UN1147 (For reference only, please check.)

IATA: UN1147 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: DECAHYDRONAPHTHALENE (For reference only, please check.)

IMDG: DECAHYDRONAPHTHALENE (For reference only, please check.)

IATA: DECAHYDRONAPHTHALENE (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)

IMDG: 3 (For reference only, please check.)

IATA: 3 (For reference only, please check.)

Packing group, if applicable

ADR/RID: III (For reference only, please check.)

IMDG: III (For reference only, please check.)

IATA: III (For reference only, please check.)

Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Not Listed.

Korea Existing Chemicals List (KECL)

Not 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

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:
http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website:
<http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Disclaimer: 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. We as supplier shall not be held liable for any

