



Carolina International Sales Co., Inc

MATERIAL SAFETY DATA SHEET

2522 Plantation Center Drive
Matthews, NC 28105
(704) 845 9440

www.ciscochem.com

1. PRODUCT NAME: Cyclohexane

2. CHEMICAL NAME: Cyclohexane

3. SYNONYMS:

4. CAS NUMBER: 110-82-7

5. PROPERTIES: ODOUR & APPEARANCE: clear, colorless,
liquid with pleasant gasoline odour
ODOUR THRESHOLD: 10ppm – 750ppm – huge range; odour is poor guide to harmful concentrations
VAPOUR PRESSURE: 77mmHg/10.3kPa (20 c)
EVAPORATION RATE (Butyl Acetate-1): 6.1
VAPOUR DENSITY (air=1): 2.9
BOILING RANGE: 81 c
FREEZING POINT: 6.6 c – freezes readily in winter(20/20 C)
SPECIFIC GRAVITY: 0.780
WATER SOLUBILITY: nil
IN OTHER SOLVENTS: soluble in acetone, ethanol, benzene, ethers
VISCOSITY: 10.2 centipoise (17 c)
PH: none – will not ionize

6. HAZARDS: Cyclohexane -100%

7. FIRE FIGHTING MEASURES: FLASH POINT: -20 c/-4 F (closed cup)
AUTOIGNITION TEMPERATURE: 245 c/473 F
FLAMMABLE LIMITS: 1.3%-8%
COMBUSTION PRODUCTS: carbon monoxide, nitrogen oxides, smoke, part oxidized hydrocarbon fragments
FIRE FIGHTING PRECAUTIONS: foam, dry chemical, water fog, water spray only to cool & dilute
water jets spreads flames; firefighters must wear SCBA
STATIC DISCHARGE: will accumulate a static charge
MECHANICAL IMPACT: not sensitive
CHEMICAL STABILITY: stable; will not polymerize
REACTIVE WITH: strong oxidizing agents
DECOMPOSITION PRODUCTS: none apart from Hazardous Combustion products.

8. PERSONAL PROTECTION MEASURES: HANDS: nitrile or “Viton” gloves recommended – other types may also be suitable; check with supplier
EYES: safety glasses with side shields or chemical goggles – always protect the eyes
VENTILATION: not required, unless product mist or vapour is created by handling
CLOTHING: No special protective clothing required
IMMEDIATELY DANGEROUS TO LIFE OR HEALTH (IDLH): 1300ppm [based on 10% of the lower explosion limit for safety considerations even though the relevant toxicological data indicate that irreversible health effects or impairment of escape existed only at higher concentrations]
ALLOWABLE TOLERANCES: Cyclohexane is exempted from the requirement of a tolerance when used as a solvent, cosolvent in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only.
OSHA STANDARDS: Permissible exposure limit: Table z-1 8-hr Time Weighted avg: 300ppm (1050mg/cu m).
NIOSH RECOMMENDATIONS: Recommended exposure Limit: 10 hr Time-Weighted avg: 300ppm (1050mg/cu m).

IN CASE OF
TRANSPORT EMERGENCY
CONTACT CHEMTREC
USA: 1-800-424-9300
INTERNATIONAL: 1-703-527-3887

9. FIRST AID PROCEDURES: SKIN: Wash with soap and plenty of water. Remove contaminated clothing and do not reuse until thoroughly cleaned or laundered.
EYES: Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.
INHALATION: Remove from contaminated area promptly. CAUTION: Rescuer must not endanger himself! If breathing stops, administer artificial respiration and seek medical aid promptly.
INGESTION: Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.
NOTE: Inadvertent inhalation of vomited material may seriously damage the lungs. The risk and danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity product. The stomach should only be emptied under medical supervision, after the installation of an airway to protect the lungs.

10. EXPOSURE LIMITS: TWAEV ppm: 100
LD50 ORAL: 820*
SKIN (mg/kg): 180,000
LC50 ppm INHALATION: 20,000
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NIOSH RECOMMENDATIONS: Recommended exposure Limit: 10 hr Time-Weighted avg: 300ppm (1050mg/cu m).
THRESHOLD LIMIT VALUES: 8 hr Time Weighted avg (TWA): 100ppm; Excursion recommendation: Excursions in worker exposure levels may exceed three times the TLV-TWA for no more than a total of 30 during a work day, and under no circumstances should they exceed five times the TLV-TWA, provided that the TLV-TWA is not exceeded.
OTHER OCCUPATIONAL PERMISSIBLE LEVELS: Maximum Acceptable Concentrations USSR 80mg/cu m
Note: Oral LD50 varies widely between species (see part 5) Human toxicity is very unlikely to be this high.

11. TOXICOLOGICAL INFORMATION: EFFECT OF ACUTE EXPOSURE
SKIN CONTACT: little to no effect
SKIN ABSORPTION: Yes, very low toxicity by this route
EYE CONTACT: slightly irritating; will not damage eyes; vapour irritating above 300ppm
INHALATION: Vapour above 300ppm may irritate; dizziness, drowsiness, sleepiness, eventual coma and death
INGESTION: may cause stomach discomfort; may cause diarrhoea; otherwise low toxicity
EFFECTS OF CHRONIC EXPOSURE
GENERAL: prolonged exposure wash away protective skin oils and may cause skin cracking and dermatitis; reports of blood disorders following exposure to cyclohexane are likely due to simultaneous exposure to benzene, neurological damage is known to occur on prolonged exposure to straight chain hydrocarbons, but unlikely with cyclics because different metabolites are formed
SENSITISING: not a sensitizer
CARCINOGENIC: not a tumorigen; not a carcinogen in either animals or humans



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REPRODUCTIVE EFFECT: no known effect on humans or animals
SYNERGISTIC WITH: not known
LD50: 12,700mg/kg (oral, rat), 820mg/kg (oral, mouse), 5500mg/kg (oral, rabbit); 180,000mg/kg (skin, rabbit)
LC50: 20,800ppm (inhalation, mammal), 26,000ppm (inhalation, rabbit)

12. ECOLOGICAL INFORMATION: This product is metabolized and cannot accumulate in living tissue – rapidly metabolized, this product is only slowly biodegradable; very low water solubility ensures that spills on soil migrate very slowly; biodegradation to ~50% in ~4 days in the presence of other carbon sources; Half –life in air ~45 hours due to reaction with hydroxyl radicals.

13. DISPOSAL CONSIDERATIONS: DO NOT FLUSH IN SEWER; may be incinerate in approved facility.

14. CARCINOGENIC PROPERTIES & NOTIFICATIONS: Not a tumorigen; not a carcinogen in either animals or humans.

15. TRANSPORT INFORMATION: USA 49 CFR
Product identification number: UN- 1145
Shipping name: Cyclohexane
Classification: Class 3; Packing group II
Label: flammable liquid
WHMIS Class: B 2
HMIS (U.S.A.): Health-1, Fire-3, Reactivity-0
Material use: solvent, reagent

16. HANDLING & STORAGE: Store in a cool, dry environment, away from sources of ignition, heat and oxidizing agents. Securely ground or bond containers when transferring product to prevent static charge accumulation and possible ignition. Use Adequate ventilation. Do not cut, drill, weld or grind on or near this container. Avoid prolonged contact with skin and wash work clothes frequently. An eye bath and safety shower should be available near the workplace.

17. ACCIDENTAL RELEASE MEASURES: LEAK PRECAUTION: dyke to control spillage and prevent environmental contamination. Fire Potential: blanket spill with foam as a precaution against accidental ignition. Take extreme care to avoid sparks – do not operate (turn on or Of) electrical appliances near spill, unless explosion proof
HANDLING SPILL: ventilate contaminated area; recover free liquid with explosion-proof suitable pumps; absorb residue on an inert sorbent, sweep, shovel, & store in closed containers for recycling or disposal.