Cyclohexene

sc-357323

Material Safety Data Sheet

Hazard Alert Code Key:	EXTREME	HIGH	MODERATE	LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
Cyclohexene

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA

SUPPLIER
Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800

EMERGENCY
ChemWatch
Within the US & Canada: 877–715–9305
Outside the US & Canada: +800 2436 2255
(1–800-CHEMCALL) or call +613 9573 3112

SYNONYMS
C6-H10, benzenetetrahydride, "benzene, tetrahydro-", tetrahydrobenzene, hexanaphthylene, "1, 2, 3, 4-tetrahydrobenzene"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

		Min	Max
Flammability:	3		
Toxicity:	2		
Body Contact:	2		
Reactivity:	2		
Chronic:	2		

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4

CANADIAN WHMIS SYMBOLS

EMERGENCY OVERVIEW

RISK

HARMFUL - May cause lung damage if swallowed.
Harmful in contact with skin and if swallowed.
Irritating to eyes, respiratory system and skin.
Highly flammable.
Vapours may cause drowsiness and dizziness.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
■ Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733).

EYE

■ This material can cause eye irritation and damage in some persons.

SKIN

■ Skin contact with the material may be harmful; systemic effects may resultfollowing absorption.
■ This material can cause inflammation of the skin oncontact in some persons.
■ The material may accentuate any pre-existing dermatitis condition.
■ Open cuts, abraded or irritated skin should not be exposed to this material.
■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.
Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

■ The material can cause respiratory irritation in some persons.
The body's response to such irritation can cause further lung damage.
■ Inhalation of vapours may cause drowsiness and dizziness.
This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.
■ Inhalation of vapors or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.
■ Inhalation of high concentrations of gas/vapor causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.
■ Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness.
Serious poisonings may result in respiratory depression and may be fatal.
■ In general, the alicyclic hydrocarbons produce less discomfort than thecorresponding aromatic compounds.

CHRONIC HEALTH EFFECTS

■ Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.
Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes. [PATTYS].
A chronic inhalation study conducted on rats, guinea pigs and rabbits for 6 hours/day, 5 days per week for 6 months showed increases in serum alkaline phosphatase and rats showed a decrease in body weight gain at 600 ppm.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
cyclohexene	110-83-8	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

· If swallowed do NOT induce vomiting. · If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. · Avoid giving milk or oils. · Avoid giving alcohol. · If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

EYE

■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

NOTES TO PHYSICIAN

■ Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically.
For acute or short term repeated exposures to petroleum distillates or related hydrocarbons:
· Primary threat to life, from pure petroleum distillate ingestion and/or inhalation, is respiratory failure.
· Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO2 50 mm Hg) should be intubated.

Section 5 - FIRE FIGHTING MEASURES

Vapor Pressure (mmHg):	159.763 (20 C)
Upper Explosive Limit (%):	5.0
Specific Gravity (water=1):	0.811
Lower Explosive Limit (%):	1.0

EXTINGUISHING MEDIA

· Foam.
· Dry chemical powder.

FIRE FIGHTING

· Alert Emergency Responders and tell them location and nature of hazard.
· May be violently or explosively reactive.
When any large container (including road and rail tankers) is involved in a fire,
consider evacuation by 500 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

· Liquid and vapor are highly flammable.
· Severe fire hazard when exposed to heat, flame and/or oxidizers.
Combustion products include: carbon dioxide (CO2), other pyrolysis products typical of burning organic material.

FIRE INCOMPATIBILITY

■ Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids,chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION

Glasses:
Chemical goggles.
Gloves:
Respirator:
Type A Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
· Remove all ignition sources.
· Clean up all spills immediately.
MAJOR SPILLS
■ CARE: Absorbent material wet with occluded oil must be wet with water as they may auto-oxidize, become self heating and ignite.
Some oils slowly oxidize when spread in a film and oil on cloths, mops, absorbents may auto-oxidize and generate heat, smoulder, ignite and burn. In the workplace oily rags should be collected and immersed in water.
· Clear area of personnel and move upwind.
· Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

· Containers, even those that have been emptied, may contain explosive vapours.
· Do NOT cut, drill, grind, weld or perform similar operations on or near containers.
· Electrostatic discharge may be generated during pumping - this may result in fire.
· Ensure electrical continuity by bonding and grounding (earthing) all equipment.
· Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<=1 m/sec until fill pipe submerged to twice its diameter, then <= 7 m/sec).
· Avoid splash filling.
· Do NOT use compressed air for filling discharging or handling operations.
The substance accumulates peroxides which may become hazardous only if it evaporates or is distilled or otherwise treated to concentrate the peroxides. The substance may concentrate around the container opening for example.
Purchases of peroxidisable chemicals should be restricted to ensure that the chemical is used completely before it can become peroxidised.
· A responsible person should maintain an inventory of peroxidisable chemicals or annotate the general chemical inventory to indicate which chemicals are subject to peroxidation. An expiration date should be determined. The chemical should either be treated to remove peroxides or disposed of before this date.

· The person or laboratory receiving the chemical should record a receipt date on the bottle. The individual opening the container should add an opening date.
· Unopened containers received from the supplier should be safe to store for 18 months.
· Opened containers should not be stored for more than 12 months.
· Avoid all personal contact, including inhalation.
· Wear protective clothing when risk of exposure occurs.
· DO NOT allow clothing wet with material to stay in contact with skin.

RECOMMENDED STORAGE METHODS

■ Packing as supplied by manufacturer. Plastic containers may only be used if approved for flammable liquid.
· For low viscosity materials (i): Drums and jerricans must be of the non-removable head type. (ii): Where a can is to be used as an inner package, the can must have a screwed enclosure.
· For materials with a viscosity of at least 2680 cSt. (23 deg. C).

STORAGE REQUIREMENTS

■ Easily peroxidizable. Products formed as a result of peroxidation are not only safety hazards but may chemically alter the chemical behavior of the parent compound.
· Store in original containers in approved flame-proof area.
· No smoking, naked lights, heat or ignition sources.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³	Peak ppm	Peak mg/m³	TWA F/CC	Notes
Canada - Alberta Occupational Exposure Limits	cyclohexene (Cyclohexene)	300	1010						
Canada - British Columbia Occupational Exposure Limits	cyclohexene (Cyclohexene)	300							
US NIOSH Recommended Exposure Limits (RELs)	cyclohexene (Cyclohexene)	300	1015						
US OSHA Permissible Exposure Levels (PELs) - Table Z1	cyclohexene (Cyclohexene)	300	1015						
US ACGIH Threshold Limit Values (TLV)	cyclohexene (Cyclohexene)	300							TLV Basis: upper respiratory tract & eye irritation
US - Minnesota Permissible Exposure Limits (PELs)	cyclohexene (Cyclohexene)	300	1015						
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	cyclohexene (Cyclohexene)	300	1015						
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	cyclohexene (Cyclohexene)	300	1015						
US - Tennessee Occupational Exposure Limits - Limits For Air	cyclohexene (Cyclohexene)	300	1015						

Contaminants						
US - California Permissible Exposure Limits for Chemical Contaminants	cyclohexene (Cyclohexene)	300	1,015			
US - Idaho - Limits for Air Contaminants	cyclohexene (Cyclohexene)	300	1015			
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	cyclohexene (Cyclohexene)	300	1010			
US - Hawaii Air Contaminant Limits	cyclohexene (Cyclohexene)	300	1,015			
US - Alaska Limits for Air Contaminants	cyclohexene (Cyclohexene)	300	1015			
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	cyclohexene (Cyclohexene)	300		375		
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	cyclohexene (Cyclohexene)	300	1,015	300	1,015	
US - Washington Permissible exposure limits of air contaminants	cyclohexene (Cyclohexene)	300		375		
US - Michigan Exposure Limits for Air Contaminants	cyclohexene (Cyclohexene)	300	1015			
Canada - Prince Edward Island Occupational Exposure Limits	cyclohexene (Cyclohexene)	300				TLV Basis: upper respiratory tract & eye irritation
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	cyclohexene (Cyclohexene)	300	1015			
Canada - Nova Scotia Occupational Exposure Limits	cyclohexene (Cyclohexene)	300				TLV Basis: upper respiratory tract & eye irritation
US - Oregon Permissible Exposure Limits (Z-1)	cyclohexene (Cyclohexene)	300	1,015			
Canada - Northwest Territories Occupational	cyclohexene (Cyclohexene)	300	1107	375	1260	

Exposure Limits (English)

ENDOELTABLE

PERSONAL PROTECTION




RESPIRATOR

• type a filter of sufficient capacity.

EYE

· Safety glasses with side shields.
· Chemical goggles.

HANDS/FEET

■ Wear chemical protective gloves, eg. PVC.
Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
· frequency and duration of contact,
· chemical resistance of glove material,
· glove thickness and
· dexterity
Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).
· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
· Contaminated gloves should be replaced.
Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

OTHER

· Overalls.
· PVC Apron.
· Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.
· For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets), non sparking safety footwear.

ENGINEERING CONTROLS

■ Care: Atmospheres in bulk storages and even apparently empty tanks may be hazardous by oxygen depletion. Atmosphere must be checked before entry.
Requirements of State Authorities concerning conditions for tank entry must be met. Particularly with regard to training of crews for tank entry; work permits; sampling of atmosphere; provision of rescue harness and protective gear as needed.
For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Liquid.
Does not mix with water.
Floats on water.

State	Liquid	Molecular Weight	82.16
Melting Range (°F)	-155	Viscosity	0.625 cSt@40°C
Boiling Range (°F)	181	Solubility in water (g/L)	Immiscible
Flash Point (°F)	10	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	590	Vapor Pressure (mmHg)	159.763 (20 C)
Upper Explosive Limit (%)	5.0	Specific Gravity (water=1)	0.811
Lower Explosive Limit (%)	1.0	Relative Vapor Density (air=1)	2.8
Volatile Component (%vol)	100	Evaporation Rate	Fast

cyclohexene	
log Kow (Sangster 1997):	2.86

APPEARANCE
Clear, colourless liquid; does not mix with water (250 mg/l).

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY
· Presence of incompatible materials.
· Product is considered stable.

STORAGE INCOMPATIBILITY
■ Cyclohexene:
· may polymerise from buildup of unstable peroxides
· reacts violently with strong oxidisers
· reacts with aluminium chloride producing highly exothermic polymerisation
· reacts violently with nitromethane, magnesium perchlorate, nitrosyl fluoride, ozone, peroxyformic acid
· is incompatible with aluminium tetrahydroborate, fluorine
· forms explosive compounds with copper(I) perchlorate
· may generate electrostatic charge due to low conductivity.
HAZARD: Rags wet / soaked with unsaturated hydrocarbons / drying oils auto oxidize; may generate heat and in-time smoulder and ignite. Oily cleaning rags should be collected regularly and immersed in water.
Avoid reaction with oxidizing agents.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

cyclohexene

TOXICITY AND IRRITATION
CYCLOHEXENE:
■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Oral (Rat) LD50: 1000 mg/kg *	
Dermal (Guinea pig) LD50: >16220 mg/kg *	
Inhalation (Rat) LC50: >21388 mg/m³ *	

■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

For cyclohexene:
Acute toxicity: An oxidation of cyclohexene at the allylic position has been shown by in vitro studies but there is no detailed information in vivo regarding absorption, metabolism and excretion.

The oral acute toxicity of cyclohexene is low: the LD50 in rats [OECD TG 401]. Some clinical signs including hypoactivity were observed. Dermal acute toxicity is negligible:
Acute inhalation toxicity is very low: exposure of rats to 21,388 mg/m3 produced no deaths. There is no reliable information on eye and skin irritation and sensitisation.
Repeat dose toxicity: According to a combined repeated dose toxicity study with the reproduction/developmental toxicity screening test [OECD TG 422], SD rats received gavage doses of 0, 50, 150 and 500 mg/kg b.w./day for 48 days in males and for 42-53 days from 14 days before mating to day 4 of lactation throughout the mating and pregnancy period in females.
Salivation was observed for about 5 minutes after dosing in 3 of 12 males and 2 of 12 females at 150 mg/kg b.w./day and up to 6 hours after dosing all of 12 males and 12 females at 500 mg/kg b.w./day. Blood chemical examination showed a decrease in triglyceride in males at 150 and 500 mg/kg b.w./day, and increases in total bilirubin in males at 500 mg/kg b.w./day and in total bile acid in both sexes at 150 mg/kg b.w./day and more. In males of the 500 mg/kg b.w./day group, there was an increase in relative kidney weight. On histopathological examinations, no dose-related changes were observed. Therefore, the NOAEL for repeated dose toxicity was considered to be 50 mg/kg b.w./day for both sexes.
Genotoxicity: In a reverse gene mutation assay [OECD TG 471], this chemical was not mutagenic in Salmonella typhimurium
TA100, TA1535, TA98, TA1537 and Escherichia coli WP2 urvA with and without exogenous metabolic activation.
In a chromosomal aberration test [OECD TG 473], structural chromosomal aberrations and polyploidy were not induced with and without exogenous metabolic activation in cultured Chinese hamster lung (CHL/IU) cells.

Reproductive and developmental toxicity: Regarding the effects on the reproductive/developmental parameters, in the above-mentioned combined study [OECD TG 422], no effects of this chemical were observed on mating, pregnancy, delivery, lactation of parent animals and viability, body weight, general appearance and the autopsy finding of offspring. The NOAEL for reproductive/developmental toxicity was considered to be 500 mg/kg b.w./day.
*SIDS Initial Assessment Report

CARCINOGEN

cyclohexene	US - Rhode Island Hazardous Substance List	IARC

SKIN

cyclohexene	Canada - British Columbia Occupational Exposure Limits - Skin	Notation	Skin
cyclohexene	Canada - Alberta Occupational Exposure Limits - Skin	Substance Interaction	1

Section 12 - ECOLOGICAL INFORMATION

This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
cyclohexene	LOW	No Data Available	LOW	MED

GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

Name / EHS TRN A1a A1b A1 A2 B1 B2 C1 C2 C3 D1 D2 D3 E1 E2 E3 Cas No / RTECS No _____ Olefin/Al 196 546 NI 0 NR 0 NI 0 0 (0) 0 0 Fp 2 kyl ester 5 copolymer (molecula r weight 2000+) (LOA) / CAS:110- 83- 8 /

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships) NRT=Net Register Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation, B1=Acuteaquatic toxicity LC/ECIC50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg), C2=Acutemammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion, D2=Eye irritation& corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal amenities, For column A2: R=Readily biodegradable, NR=Not readily biodegradable. For column D3: C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lunginjury, N=Neurotoxic, I=Immunotoxic. For column E1: NT=Not tainting (tested), T=Tainting test positive. For column E2: Fp=Persistent floater, F=Floater, S=Sinking substances. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard. (GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

A. General Product Information
Ignitability characteristic: use EPA hazardous waste number D001 (waste code I)

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.
¦ Puncture containers to prevent re-use and bury at an authorized landfill.
Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
A Hierarchy of Controls seems to be common - the user should investigate:
· Reduction
· Reuse
· Recycling
· Disposal (if all else fails)
This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.
DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.
· Recycle wherever possible.
· Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

Section 14 - TRANSPORTATION INFORMATION

DOT:
Symbols: None Hazard class or Division: 3
Identification Numbers: UN2256 PG: II

Label Codes: 3 Special provisions: IB2, T4,
TP1
Packaging: Exceptions: 150 Packaging: Non- bulk: 202
Packaging: Exceptions: 150 Quantity limitations: 5 L
Passenger aircraft/rail:
Quantity Limitations: Cargo 60 L Vessel stowage: Location: E
aircraft only:
Vessel stowage: Other: None
Hazardous materials descriptions and proper shipping names:
Cyclohexene

Air Transport IATA:

UN/ID Number: 2256 Packing Group: II
Special provisions: None
Cargo Only
Packing Instructions: 60 L Maximum Qty/Pack: 364
Passenger and Cargo Passenger and Cargo
Packing Instructions: 5 L Maximum Qty/Pack: 353
Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity
Packing Instructions: 1 L Maximum Qty/Pack: Y341
Shipping Name: CYCLOHEXENE

Maritime Transport IMDG:

IMDG Class: 3 IMDG Subrisk: None
UN Number: 2256 Packing Group: II
EMS Number: F-E , S-D Special provisions: None
Limited Quantities: 1 L
Shipping Name: CYCLOHEXENE

Section 15 - REGULATORY INFORMATION

cyclohexene (CAS: 110-83-8) is found on the following regulatory lists;

"Canada - Alberta Occupational Exposure Limits","Canada - British Columbia Occupational Exposure Limits","Canada - Northwest Territories Occupational Exposure Limits (English)","Canada - Nova Scotia Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits","Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)","Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits","Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances","Canada Ingredient Disclosure List (SOR/88-64)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","OECD Representative List of High Production Volume (HPV) Chemicals","US - Alaska Limits for Air Contaminants","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - California Permissible Exposure Limits for Chemical Contaminants","US - Connecticut Hazardous Air Pollutants","US - Hawaii Air Contaminant Limits","US - Idaho - Limits for Air Contaminants","US - Massachusetts Oil & Hazardous Material List","US - Michigan Exposure Limits for Air Contaminants","US - Minnesota Hazardous Substance List","US - Minnesota Permissible Exposure Limits (PELs)","US - New Jersey Right to Know Hazardous Substances","US - Oregon Permissible Exposure Limits (Z-1)","US - Pennsylvania - Hazardous Substance List","US - Rhode Island Hazardous Substance List","US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US - Washington Permissible exposure limits of air contaminants","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US ACGIH Threshold Limit Values (TLV)","US DOE Temporary Emergency Exposure Limits (TEELs)","US EPA Master Testing List - Index I Chemicals Listed","US NIOSH Recommended Exposure Limits (RELs)","US OSHA Permissible Exposure Levels (PELs) - Table Z1","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory","US TSCA Section 8 (a) - Preliminary Assessment Information Rules (PAIR) - Reporting List","US TSCA Section 8 (d) - Health and Safety Data Reporting"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

■ Contact with air may produce sufficient heat to ignite combustible materials.*.
■ Potentially explosive peroxides may form on standing.*.
■ Inhalation may produce health damage*.
■ Cumulative effects may result following exposure*.
■ Repeated exposure potentially causes skin dryness and cracking*.
* (limited evidence).

Denmark Advisory list for selfclassification of dangerous substances

Substance CAS Suggested codes cyclohexene 110- 83- 8 Xn; R22

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■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent

review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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