

SAFETY DATA SHEET



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CYCLOPENTANE

SDS No. M0049

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Cyclopentane

Synonyms: Pentamethylene

Recommended Use: This product is recommended for laboratory and manufacturing use only. It is not recommended for drug, food or household use.

2. HAZARDS IDENTIFICATION



Classification:

Flammable Liquids: GHS Category 2

Skin Irritation: GHS Category 2

Eye Irritation: GHS Category 2A

Label Elements

Signal Word: DANGER!

Hazard Statements:

H225 – Highly flammable liquid and vapor..

H303 – .May be harmful if swallowed.

H316 - .Causes mild skin irritation.

H320 – Causes eye irritation.

H333 – May be harmful if inhaled.

H336 – May cause drowsiness or dizziness.

H402 – Harmful to aquatic life.

Precautionary Statements:

P210 – Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

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.

Emergency Overview

Causes irritation to eyes.. May cause irritation to skin and respiratory tract. May cause central nervous system effects. Highly flammable liquid and vapor. Vapor may cause flash fire. Harmful to aquatic environments. Target Organs: Central nervous system and eyes.

HMIS Rating:

Health – 1 Flammability – 4 Physical Hazard – 0 PPE – User supplied

NOTE: HMIS ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. These ratings are based on the inherent properties of this chemical under expected conditions of normal use and are not intended to be used in emergency situations. PPE is determined by the user based on their needs and conditions.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS No</u>	<u>Percent</u>	<u>Hazardous</u>
Cyclopentane	287-92-3	>75%	Yes

4. FIRST-AID MEASURES

Inhalation: If inhaled, remove to fresh air. If breathing is labored or with coughing, give oxygen. If not breathing, begin artificial respiration. Get medical aid.

Ingestion: Get medical aid. Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation persists. Wash clothing before reuse.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention.

Notes to Physician: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flammability: Highly flammable liquid and vapor (GHS Category 2)

Auto-ignition Temperature: 380° C (716° F)

Flash Point: -37° C (-34° F)

Flammable Limits: Lower Limit – 1.5 vol %, Upper Limit – 8.7 vol %

Products of Combustion: Will decompose into highly toxic and irritating gases (carbon monoxide and carbon dioxide) under fire conditions.

Specific Fire Hazards: As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. May accumulate static electric charge and may cause ignition of its own vapors. Use water spray to keep fire exposed containers cool. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. Material floats on water and may travel to a source of ignition and spread fire.

Specific Explosion Hazards: Containers may explode in the heat of a fire.

Fire Fighting Media: Water may be ineffective. Material is lighter than water and insoluble in water. Fire could easily be spread by use of water where run-off cannot be contained. Do not use straight streams of water. Use dry chemical, carbon dioxide, or appropriate foam. Solid streams of water may be ineffective and spread material. For large fires, use water spray, fog, or regular foam. For small fires, use dry chemical, carbon dioxide, water spray, or regular foam. Cool containers with flooding quantities of water until well after the fire is out.

National Fire Protective Association: Health - 1, Flammability - 3, Reactivity - 0

NOTE: NFPA ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. They are for use by emergency personnel to address the hazards that are presented by short term, acute exposure to this product under fire, spill, or similar emergencies. Ratings involve data and interpretations that may vary from company to company.

6. ACCIDENTAL RELEASE MEASURES

Absorb spilled liquid with sorbent pads, socks, or other inert material such as vermiculite, sand, or earth. Provide ventilation to the affected area and remove all ignition sources. Avoid run-off into storm sewers and ditches that lead to waterways. Approach the spill from upwind and pick up absorbed material and place it in a suitable container. Use only non-sparking tools and equipment. A vapor suppressing foam may be used. Always use proper personal protective equipment as described in section 8.

7. HANDLING AND STORAGE

Precautions: Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Remove contaminated clothing and wash before reuse. Empty containers contain product residue (liquid and vapor) and can be dangerous. Keep container tightly closed and away from heat, spark, and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks, or open flames. Use with adequate ventilation. Avoid breathing vapor or mist.

Storage: Keep in a flammables area away from all sources of ignition and oxidizing materials. Keep in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or using the material should be equipped with eyewash station and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protection: Wear protective chemical goggles or appropriate eye protection. Use appropriate protective gloves and protective clothing to prevent skin exposure. A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever possible. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Exposure Limits:

ACGIH – 600 ppm TWA

NIOSH – 600 ppm TWA; 1720 mg/m³ TWA

OSHA Final PELs – None

OSHA Vacated PELs – 600 ppm TWA; 1720 mg/m³ TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance: Clear, colorless liquid.

Odor: fragrant odor

Odor Threshold: Not available

Molecular Formula: C₅H₁₀

Molecular Weight: 70.14

Auto-ignition Temperature: 380° C (716° F)

Flash Point: -37° C (-34° F)

Flammable Limits: Lower Limit – 1.5 vol %, Upper Limit – 8.7 vol %

pH: Not available.

Boiling Point: 50° C @ 760 mm Hg

Freezing/Melting Point: -94° C

Decomposition Temperature: Not available

Specific Gravity: 0.75 g/cm³ @ 20° C

Vapor Density (Air=1): 2.42

Vapor Pressure: 360 mm Hg @ 20° C.

Evaporation Rate (Butyl acetate = 1): 6.1

Viscosity: 0.44 mPa 20° C

Solubility: Insoluble

10. STABILITY AND REACTIVITY

Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: Ignition sources, excess heat, and incompatible materials.

Incompatibility With Various Substances: Strong oxidizing agents, oxygen.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, skin absorption, skin contact

Acute Exposure Hazards:

INHALATION HAZARD: May cause irritation of the respiratory tract. May be harmful if inhaled. May cause central nervous system effects.

INGESTION HAZARD: May cause irritation of the digestive tract. May be harmful if swallowed.

SKIN CONTACT HAZARD: May cause skin irritation. May be harmful if absorbed through skin.

EYE CONTACT HAZARD: Causes eye irritation.

Chronic Exposure Hazards: No information found.

Animal Toxicity:

Inhalation, mouse: LC50 = 72 gm/m³;

Inhalation, rat: LC50 = 106 gm/m³;

Oral, mouse: LD50 = 12800 mg/kg;

Oral, rat: LD50 = 11400 mg/kg;

Carcinogenicity: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Mutagenicity: No information available.

Neurotoxicity: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity: No information available.

Environmental Fate: Do not empty into drains.

13. DISPOSAL CONSIDERATIONS

Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options. Waste generators must decide if discarded material is a hazardous waste. State and local disposal regulations may differ from federal disposal definitions found in 40 CFR 261.3. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION

US DOT, IATA, IMO

Proper Shipping Name: Cyclopentane

Hazard Class: 3

UN Number: UN1146

Packing Group: II

Canada TDG

Additional Information: -37 C

1

15. REGULATORY INFORMATIONUS Federal Regulations:

TSCA: CAS# 287-92-3 is listed on the TSCA Inventory.

Health and Safety Reporting List: CAS# 287-92-3: Not listed.

Chemical Test Rules: CAS# 287-92-3: Not listed.

Section 12b: CAS# 287-92-3 is not listed.

TSCA Significant New Use Rule: Does not have an SNUR under TSCA.

CERCLA Hazardous Substances: CAS# 287-92-3 – Does not have a final RQ

SARA Section 302: Does not have a TPQ

SARA Codes: CAS# 287-92-3 – fire

Section 313: Cyclopentane (CAS# 287-92-3) is not subject to SARA Title III Section 313 and 40 CFR 373 reporting requirements.

Clean Air Act: CAS# 287-92-3 is not listed as a hazardous air pollutant (HAP). It is not a Class 1 Ozone Depleter. It is not a Class 2 Ozone Depleter.

Clean Water Act: CAS# 287-92-3 is not listed as a Hazardous Substance. It is not a Priority Pollutant. It is not a Toxic Pollutant.

OSHA: Not considered highly hazardous by OSHA.

US State Regulations:

CAS# 287-92-3 is on the following state right-to-know lists: California, New Jersey, Pennsylvania, Minnesota, and Massachusetts

California Prop 65: California No Significant Risk Level: Not listed

Canada:

DSL/NDL: CAS# 287-92-3 is listed on Canada's DSL list.

WHMIS: This product has a WHMIS classification of B2, D2B. This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and this MSDS contains all the information required by those regulations.

Ingredient Disclosure List: CAS# 287-92-3 is listed on Canada's Ingredient Disclosure List.

DSDL (EEC):

Hazard Symbols: Xn; F; N

Risk Phrases: R11 – Highly Flammable; R38 – Irritating to skin; R50/53 – Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment; R67 – Vapors may cause drowsiness and dizziness.

Safety Phrases: S9 – Keep container in well ventilated place; S16 – Keep away from sources of ignition-no smoking; S25 – Avoid contact with eyes; S29 – Do not empty into drains; S33 – Take precautionary measures against static discharge; S61 – Avoid release to the environment. Refer to special instructions/safety data sheets; S62 – If swallowed, do not induce vomiting, seek medical advice immediately and show this container or label.

WGK (Water Danger/protection): CAS# 287-92-3: 1

16. OTHER INFORMATION

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Last Revised: 12/16/2011 – Converted to GHS format.

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