

MSDS**MATERIAL SAFETY DATA SHEET****SECTION 1 COMPANY IDENTIFICATION AND CHEMICAL PRODUCT****MeiLong Cyclopentane Chemical Co., Ltd.**

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SUBSTANCE: Cyclopentane
CHEMICAL FAMILY: hydrocarbons, alicyclic
CREATION DATE: Dec. 01 1997
REVISION DATE: April 20 2003

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS**1. IDENTIFICATION**

Chemical Name:	Cyclopentane
Molecular Weight:	70.14
Chemical Family:	Cycloaliphatic Hydrocarbon
Formula:	C ₅ H ₁₀
Synonyms:	Not listed
DOT Proper Shipping Name:	Cyclopentane
DOT Hazard Class:	Flammable Liquid, Hazard Class 3, P.G. II
DOT Identification Number:	UN1146
EC NUMBER (EINECS):	206-016-6
EC INDEX NUMBER:	601-030-00-2
PERCENTAGE:	100.0

CAS Number:

CAS Number: 287-92-3

2. PHYSICAL AND CHEMICAL DATA

Boiling Point, 760 mm Hg:	49.3° C
Freezing Point:	-93.87° C
Vapor Density (air=1):	2.4
Solubility in Water:	Insoluble
Specific Gravity (H₂O=1):	@ 20° C 0.745
Stability:	Stable
Hazardous Polymerization:	Not expected to occur
Appearance and Odor:	Clear, colorless liquid with a strong hydrocarbon odor
Conditions to Avoid:	Heat, sparks, open flame, open containers, and poor ventilation
Materials to Avoid:	Strong oxidizing agents
Hazardous Decomposition Products:	Incomplete combustion can generate carbon monoxide and other toxic vapors

3. FIRE AND EXPLOSION HAZARD DATA

Flash Point :	-25° C
Auto Ignition Temperature:	361° C
Flammable Limits in Air % by Volume:	Lower Limit 1.4 Upper Limit:8.0
Unusual Fire and Explosion Hazards:	Very volatile and extremely flammable
Extinguishing Media:	Carbon dioxide, dry chemical, or foam
Special Fire Fighting Procedures:	Water will not be effective in extinguishing a fire and may spread it, but a water spray can be used to cool fire-exposed containers. Wear full protective clothing and self-contained breathing apparatus. Heat will build pressure and may rupture closed storage containers.

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=3 REACTIVITY=0

EMERGENCY OVERVIEW:

COLOR: colorless



PHYSICAL FORM: liquid

ODOR: distinct odor

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, central nervous system depression

PHYSICAL HAZARDS: Flammable liquid and vapor. Vapor may cause flash fire.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation, headache, drowsiness, symptoms of drunkenness

LONG TERM EXPOSURE: no information on significant adverse effects

SKIN CONTACT:

SHORT TERM EXPOSURE: irritation

LONG TERM EXPOSURE: same as effects reported in short term exposure

EYE CONTACT:

SHORT TERM EXPOSURE: irritation

LONG TERM EXPOSURE: same as effects reported in short term exposure

INGESTION:

SHORT TERM EXPOSURE: nausea, headache, drowsiness, symptoms of drunkenness

LONG TERM EXPOSURE: no information on significant adverse effects

CARCINOGEN STATUS:

OSHA: No

NTP: No

IARC: No

SECTION 4 FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

NOTE TO PHYSICIAN: For ingestion, consider gastric lavage. Consider oxygen.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive above flash point.

EXTINGUISHING MEDIA: regular dry chemical, carbon dioxide, water, regular foam

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Evacuation radius: 800 meters (1/2 mile). Water may be ineffective.

LOWER FLAMMABLE LIMIT: 1.4%

AUTOIGNITION: 682 F (361 C)

FLAMMABILITY CLASS (OSHA): IB

SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry.

SECTION 7 HANDLING AND STORAGE

STORAGE: Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of **explosion-proof equipment** is recommended and may be required. Do not enter confined spaces such as tanks or pits without following proper entry procedures. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits.

Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

“Empty” containers retain **residue** and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. “Empty” drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, and other references

pertaining to cleaning, repairing, welding, or other contemplated operations.

STORAGE: Keep containers tightly closed. Used and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material. Protect containers against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet the demand above-mentioned.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

CYCLOPENTANE:

600 ppm (1720 mg/m³) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)

600 ppm ACGIH TWA

600 ppm (1720 mg/m³) NIOSH recommended TWA 10 hour(s)

VENTILATION: Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full facepiece.

SECTION 9 STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Keep out of water supplies and sewers.

INCOMPATIBILITIES: oxidizing materials

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: miscellaneous decomposition products

POLYMERIZATION: Will not polymerize.

SECTION 10 TOXICOLOGICAL INFORMATION

TOXICITY DATA:

106 gm/m³ inhalation-rat LC50; 11400 mg/kg oral-rat LD50

LOCAL EFFECTS:

Irritant: inhalation, skin, eye

ACUTE TOXICITY LEVEL:

Slightly Toxic: inhalation, ingestion

TARGET ORGANS: central nervous system

ADDITIONAL DATA: Alcohol may enhance the toxic effects.

SECTION 11 ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

FISH TOXICITY: 100000 ug/L 96 day(s) (Mortality) Coho salmon, silver salmon (*Oncorhynchus kisutch*)

INVERTEBRATE TOXICITY: 3390000 ug/L 48 week(s) EC50 (Development) Pacific oyster (*Crassostrea gigas*)

ALGAL TOXICITY: 262000 ug/L 48 hour(s) (Population Growth) Cryptomonad (*Chilomonas paramecium*)

SECTION 12 DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

SECTION 13 TRANSPORT INFORMATION

PROPER SHIPPING NAME: Cyclopentane

ID NUMBER: UN1146

HAZARD CLASS OR DIVISION: 3

PACKING GROUP: II

LABELING REQUIREMENTS: Flammable liquid

DANGER/HAZARD SYMBOL: see the picture

