

上海路洋化工有限公司
Shanghai Ocean Line Chemical Industry Co.,Ltd

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

- Product Name : Cyclo-Pentane
- CAS No. : 287-92-3
- KE No. : KE-09297
- UN No. : 1146
- EU No. : 206-016-6
- Synonyms : Pentamethylene; UN 1146
- Molecular formula : C₅H₁₀
- CHEMICAL FAMILY : Hydrocarbon
- Product Uses : solvent for fat extraction, cellulose acetate solvent, aerosol propellant, organic synthesis
- PRODUCER INFORMATION
- NAME: SHANGHAI OCEAN LINE CHEMICAL INDUSTRY CO.,LTD.
- ADDRESS: ROOM 602, BUILDING 8#, NO. 1930 CAOAN ROAD, JIA DING, SHANGHAI, CHINA
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2. HAZARDS IDENTIFICATION

- GHS-Classification
- Flammable liquids, Category 2
- Aspiration hazard, Category 1
- Chronic aquatic toxicity, Category 3
- Acute aquatic toxicity, Category 3
- Target Organ Systemic Toxicant - Single exposure, Category 3, Inhalation, Central nervous system
- GHS-Labeling
- Symbol(s)



○ Signal Word : Danger

○ Hazard Statements

H225	Highly flammable liquid and vapor.
H304	May be fatal if swallowed and enters airways.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H412	Harmful to aquatic life with long lasting effects.

○ Precautionary Statements

– Prevention:

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P240	Ground/bond container and receiving equipment.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

– Response:

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Evacuate area. Use manufacturer/supplier or the competent authority to specify appropriate media for extinction.

– Storage:

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

P501	Dispose of contents/ container to an approved waste disposal plant.
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■ OTHER HAZARDS WHICH DO NOT RESULT IN CLASSIFICATION

○ NFPA: HEALTH = 2, FIRE = 3, REACTIVITY = 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

ChemicalName	Synonyms	CAS-No. / EINECS-No.	Concentration
Cyclo- Pentane	PENTAMETHYLE	287-92-3	Min 96.0 %
Benzene	NE	71-43-2	Max 1 ppm

4. FIRST AID MEASURES

■ General advice

- Move out of dangerous area.
- Show this material safety data sheet to the doctor in attendance.
- Symptoms of poisoning may only appear several hours later.
- Do not leave the victim unattended.

■ If inhaled

- Move to fresh air.
- If unconscious place in recovery position and seek medical advice.
- If symptoms persist, call a physician.

■ In case of skin contact

- If on skin, rinse well with water.
- If on clothes, remove clothes.

■ In case of eye contact

- Immediately flush eye(s) with plenty of water. Remove contact lenses.
- Protect unharmed eye. Keep eye wide open while rinsing.
- If eye irritation persists, consult a specialist.

■ If swallowed

- Keep respiratory tract clear.
- Do NOT induce vomiting. Never give anything by mouth to an unconscious person.
- Take victim immediately to hospital.

5. FIRE-FIGHTING MEASURES

■ Suitable extinguishing media

- Dry chemical. Carbon dioxide (CO₂). Alcohol-resistant foam.

■ Unsuitable extinguishing media

- High volume water jet.

■ Specific hazards during fire fighting

- Do not allow run-off from fire fighting to enter drains or water courses.

■ Special protective equipment for fire-fighters

- Wear self contained breathing apparatus for fire fighting if necessary.

■ Further information

- Collect contaminated fire extinguishing water separately.
- This must not be discharged into drains.
- Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- For safety reasons in case of fire, cans should be stored separately in closed containments.
- Use a water spray to cool fully closed containers.

■ Fire and explosion protection

- Do not spray on an open flame or any other incandescent material. Use only explosion-proof equipment. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep



away from open flames, hot surfaces and sources of ignition.

- Hazardous decomposition products : Hydrocarbons. Carbon oxides.
- Flash point : -35 ° C (-31 ° F) Method : Tag closed cup
- Autoignition temperature : 361 ° C (682 ° F)
- LOWER/UPPER FLAMMABLE LIMIT : 1.1 / 8.7 %

6. ACCIDENTAL RELEASE MEASURES

■ Personal precautions

- Use personal protective equipment.
- Ensure adequate ventilation.
- Remove all sources of ignition.
- Evacuate personnel to safe areas.
- Beware of vapors accumulating to form explosive concentrations.
- Vapors can accumulate in low areas.

■ Environmental precautions

- Prevent product from entering drains.
- Prevent further leakage or spillage if safe to do so.
- If the product contaminates rivers and lakes or drains inform respective authorities.

■ Methods for cleaning up

- Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

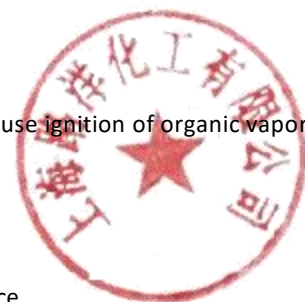
■ Handling

- Advice on safe handling
 - Avoid formation of aerosol.
 - Do not breathe vapors/dust. Avoid contact with skin and eyes.
 - For personal protection see section 8.
 - Smoking, eating and drinking should be prohibited in the application area.
 - Take precautionary measures against static discharges.

 - Provide sufficient air exchange and/or exhaust in work rooms.
 - Open drum carefully as content may be under pressure.
 - Dispose of rinse water in accordance with local and national regulations.
- Advice on protection against fire and explosion
 - Do not spray on an open flame or any other incandescent material.
 - Use only explosion-proof equipment.
 - Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).
 - Keep away from open flames, hot surfaces and sources of ignition.

■ Storage

- Requirements for storage areas and containers
 - No smoking. Keep container tightly closed in a dry and well-ventilated place.



- Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- Observe label precautions.
- Electrical installations / working materials must comply with the technological safety standards.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

■ EXPOSURE LIMIT

- 600 ppm ACGIH TWA

■ APPROPRIATE ENGINEERING CONTROLS : Not available

■ INDIVIDUAL PROTECTION MEASURES

- Respiratory protection : In the case of vapor formation use a respirator with an approved filter .
- Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.
- Skin and body protection : Impervious clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

■ PHYSICAL STATE	Liquid (Colorless)
■ ODOR	Mild
■ ODOR THRESHOLD	Not available
■ pH	not applicable
■ Density	0.7473(g/cm ³)
■ MELTING POINT/FREEZING POINT	-94 °C
■ BOILING POINT/RANGE	49 °C
■ FLASH POINT	-35 ° C (-31 ° F) Method : Tag closed cup
■ EVAPORATION RATE	No data available
■ FLAMMABILITY (SOLID, GAS)	No data available
■ LOWER/UPPER FLAMMABLE LIMIT	1.1 / 8.7 %
■ VAPOR PRESSURE	45 kPa (20°C(317.8mmHg, 25°C))
■ SOLUBILITY	0.016g/100 mL (25°C)
■ VAPOR DENSITY	2.4
■ SPECIFIC GRAVITY	No data available
■ COEFFICIENT OF N-OCTANOL/WATER DISTRIBUTION	3
■ AUTOIGNITION	361 °C
■ DECOMPOSITION TEMPERATURE	No data available
■ VISCOSITY	No data available
■ MOLECULAR WEIGHT	70.1329



10 STABILITY AND REACTIVITY

■ CHEMICAL STABILITY

○ This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

○ No decomposition if stored and applied as directed.

■ POSSIBILITY OF HAZARDOUS REACTIONS : Not available

■ Conditions to avoid : heat, sparks, fire, and oxidizing agents.

■ Materials to avoid : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

■ HAZARDOUS DECOMPOSITION PRODUCT : irritation, corrosive, poison gas

11. TOXICOLOGICAL INFORMATION

■ IMMEDIATE (ACUTE) EFFECTS:

○ Oral LD50 (rat) : 11,400 mg/kg.

○ Inhalation LC50 (rat) : 106 gm/m³.

○ Oral LD50 (mouse) : 12,800 mg/kg.

○ Inhalation LC50 (mouse) : 72 gm/m³.

■ DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS : No data is available.

■ OTHER DATA : None.

12. ECOLOGICAL INFORMATION

■ Toxicity to fish

○ Cyclopentane : NOEC: > 100mg /ℓ
Exposure time: 24 HR

Species : Oncorhynchus kisutch (Marine, fresh water)

○ Isopentane : LC50: 3,1mg /ℓ
Exposure time : 96 HR

Species : Oncorhynchus mykiss (rainbow trout)

○ Benzene : LC50: 5,3mg /ℓ
Exposure time: 96 HR

Species : Marone saxatilis (striped bass)

■ Toxicity to daphnia and other aquatic invertebrates.

○ Cyclopentane : EL50: 10,5mg /ℓ
Exposure time: 24 HR

Species : Daphnia magna (Water flea)

○ Isopentane : EC50: 2,3mg /ℓ
Exposure time: 48 HR

Species : Daphnia magna (Water flea)

○ Benzene : EC50: 120mg /ℓ
Exposure time: 48 HR

Species : Daphnia magna (Water flea)

■ Toxicity to algae

- Pennsylvania RTK : Cyclopentane
- Massachusetts RTK : Cyclopentane
- TSCA 8(b) inventory : Cyclopentane
- Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
- Other Classifications :
- WHMIS (Canada) : CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
- DSCL (EEC) : R11- Highly flammable. R36/38- Irritating to eyes and skin.
- HMIS (U.S.A.) :
- Health Hazard : 2
- Fire Hazard : 3
- Reactivity : 0
- Personal Protection : h
- National Fire Protection Association (U.S.A.) :
- Health : 2
- Flammability : 3
- Reactivity : 0
- Specific hazard :
- Protective Equipment : Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

16. OTHER INFORMATION

- SOURCE:
 - KOREAN OCCUPATIONAL SAFETY AND HEALTH AGENCY (KOSHA)
 - Chevron Phillips Chemicals (Shanghai) Corporation
- REFERENCES AND SOURCES FOR DATA: -
- REVISION NUMBER AND DATA:
 - 0-00: 2021 . 03. 01 CREATION

