



SAFETY DATA SHEET

CYCLOHEXANONE

1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

Product name: CYCLOHEXANONE

Recommended use: Chemical for industrial

Manufacturer/Supplier: **MODERN CHEMICAL CO.,LTD.**
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2. HAZARDS IDENTIFICATION

Label elements

Pictogram



Signal word

Danger

Hazard statement(s):

- 1.) Flammable liquid and vapour.
- 2.) Harmful if swallowed, in contact with skin or if inhaled.
- 3.) Causes skin irritation.
- 4.) Causes serious eye damage.

Precautionary statement(s):

- 1.) Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking.
- 2.) Avoid breathing mist/ fume/vapours/spray.
- 3.) Wear protective gloves/protective clothing/eye protection/face protection.
- 4.) Take precautionary measures against static discharge.



- 5.) IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- 6.) If exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
- 7.) IF ON SKIN: Wash with plenty of water.
- 8.) Keep container tightly closed.
- 9.) Ground/bond container and receiving equipment.
- 10.) Use non-sparking tools.
- 11.) IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- 12.) Store in a well-ventilated place. Keep cool.
- 13.) Dispose of contents and container in accordance with local regulational/national/international regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonym: Pimelic ketone, Cyclohexyl ketone, Ketoexamethylene, anone, sexton

Ingredients	% (w/w)	CAS NO.
CYCLOHEXANONE	100	108-94-1

4. FIRST AID MEASURES

General advice:

Show this safety data sheet to the doctor in attendance.

Inhalation:

Move to fresh air in case of accidental inhalation of vapors. Keep patient warm.

In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth. Use suitable instruments/apparatus.

Skin contact:

Remove contaminated clothing and wash affected skin with soap and water for at least 15 minutes. If skin irritation continues, consult a doctor.

Eye contact:

If the substance has got into the eyes, immediately wash out with plenty of water at least 15 minutes. Obtain medical attention.

Ingestion:

Rinse mouth. **Do not induce vomiting.** Never give anything by mouth to an unconscious person. Keep patient warm Use suitable instruments/apparatus. Obtain medical attention.



5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

Extinguish with carbon dioxide, dry chemical or foam. In the event of fire, cool tanks with water spray.

Unsuitable Extinguishing Media:

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from Chemicals:

Vapors may form explosive mixture with air. Flash back possible over considerable distance.

Special protective equipment for fire-fighters:

Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Evacuate personnel to safe areas. Do not breathe vapors or spray mist. Remove all sources of ignition. Wear a positive-pressure supplied-air respirator, flame retardant antistatic protective clothing. Shut off leaks if with out risk. Keep people away from and upwind of spill/leak.

Environmental precautions:

Prevent material from reaching sewage system, holes and cellars. Do not allow to enter sewing system, water bodies, groundwater or soil. Inform respective authorities in case large quantities of the product reach water, sewage system or soil.

Methods and Material for Containment and Clean Up:

Spillage: May react with combustible substances creating fire or explosion hazard and formation of toxic fumes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Soak up with inert absorbent material (e.g. sand, silicagel). Prevent liquid entering sewers, basements and workpits; vapor may create explosive atmosphere. Transfer to covered steel drums. Dispose of promptly.

7. HANDING AND STORAGE

Precautions for Safe Handling & Product Transfer:

Keep container tightly closed. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing.



Conditions for Safe Storage & Unsuitable Materials:

Keep tightly closed at room temperature in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Keep out of direct sunlight and away from incompatible material. Store in original container. Electrical equipment should be protected to the appropriate standard.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits: TWA 50 ppm

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined area. Use explosion-proof electrical/ventilating/lighting/equipment.

Individual Protection Measures

Respiratory protection: If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US).

Hand protection: Handle with gloves. In case full and splash contract wear gloves from butyl rubber.

Eye protection: Goggles giving complete protection to eyes.

Skin and body Protection: Chemical resistant apron /flame retardant antistatic protective clothing, heavy duty work shoes.

Hygiene measure: Smoking, eating and drinking water is forbidden in the workplace. After work, shower and change clothes.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form,Color and Odor: liquid, colourless, characteristic	Evaporation rate : N/A
Melting Point : (-47) – (-26) °C	Specific gravity : 0.946 - 0.948 g/cm ³ at 20 °C
pH: 7	Solubility in water : Solubility 90 g/l at 20 °C
Boiling: 153-156 °C	Viscosity : 2.2 mPas
Vapour pressure: 4.5 mbar at 20 °C	Vapour density: 3.4 (air = 1)
Lower explosion limits: 1.1 – 1.3 %Vol	Upper explosive limit: 9.4 %Vol
Auto-ignition temperature: 420 – 520 °C	Flash point: 43 - 44 °C
Odour threshold: 3 ppm	Flammability (solid, gas): N/A
Decomposition temperature: N/A	Solubility in other solvents: N/A
n-octanol/water partition coefficient (log P_{ow}): 0.81	



10. STABILITY AND REACTIVITY

- Chemical Stability:** Stable under recommended storage conditions.
- Reactions:** No data available.
- Possibility of Hazardous Reactions:** Forms explosive mixtures with air at elevated temperatures. Oxidizing agents.
Hydrogen peroxide. Nitric acid.
- Conditions to avoid:** Incompatible materials, ignition sources, heat, flames, sparks, electrostatic charges.
- Materials to be avoided:** Reducing agents, plastics, Oxidants, chloroform, bromoform and other organic solvent.
- Hazardous Decomposition Products:** Carbon monoxides, Carbon dioxides.

11. TOXICOLOGICAL INFORMATION

- Acute toxicity:** LD50 (Oral, rat): 1800-1890 mg/kg
LC50 (Inhalation, rat): >6.2 - 32.111 mg/l - 4h
LC50 (Inhalation, rat): 19000 mg/m³
LD50 (Dermal, rabbit): >794 - < 3160 mg/kg
- Sensitization:** Causes skin irritation. Causes serious eye irritation. Risk of serious damage to eyes. Harmful by inhalation, in contact with skin and if swallowed. In addition to local Irritant manifestation, there is a narcotic effect when inhaling high concentrations, with the danger of central respiratory arrest.
- Chonic toxicity:** The agent is not classifiable as to its carcinogenicity to humans.
- Further toxicological information:** The product should be handled with the care usual when dealing with chemicals.

12. ECOLOGICAL INFORMATION

Toxicity

- Toxicity to fish:** LC50 - Pimephales promelas: 527 - 732 mg/l - 96h
LC50 - Fish, 96h: 630 mg/L
LC50 - Fathead Minnow, 96h: 527 mg/l
- Toxicity to daphnia and other aquatic invertebrates:**
EC50 - Daphnia magna: 820 mg/l - 96h
EC50 - Daphnia magna: 800 mg/l - 24h



Toxicity to algae:	EC50 - Chlamydomonas: 32.9 mg/l - 72h
Toxicity to bacteria:	EC50 - Activated sludge: >1000 mg/l – 30min
Biodegradability Remarks:	90 – 100% / 28d, 87% / 14d
Bioaccumulative potential:	Due to the distribution coefficient n-octanol/water an accumulation in organisms is not expected (log P(o/w): <1)
Mobility:	No data available
Affected in any other way:	The product does not contribute to the AOX value of the waste water. Do not allow product to reach ground water, water bodies, sewage system or soil.

13. DISPOSAL CONSIDERATIONS

Material Disposal:	Must not be disposed of together with household garbage. Do not allow product to sewage system. Disposal must be made according to official regulations. A waste code in accordance with the European Waste Catalogue (EWC) may not be assigned to this product since it admits of a classification only when the consumer uses it for some purpose. In agreement with the waste code must be determined regional waste disposal authority or company.
Container Disposal:	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.

14. TRANSPORT INFORMATION

ADR/RID

UN-NO: 1915	Class: 3	Packing group: III
Proper shipping name: CYCLOHEXANONE		

IMDG

UN-NO: 1915	Class: 3	Packing group: III
Ems: F-E S-D		
Proper shipping name: CYCLOHEXANONE		

IATA

UN-NO: 1915	Class: 3	Packing group: III
Proper shipping name: CYCLOHEXANONE		

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture



TSCA (Toxic Substances Control Act): Substance is listed

National regulations

Information on occupational restrictions:

Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work

Council Directive 92/85/EEC Employment restrictions concerning pregnant and lactating women must be observed

Major Accident Hazard - Seveso Directive 96/82/EC:

Annex I - Categorie: 6

FLAMMABLE

(where the substance or preparation falls within the definition given in Note 3 (a))

Other regulations, imitations and prohibitive regulations

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

Regulation (EC) No 850/2004 on persistent organic pollutants and amending Directive 79/117/ EEC

not regulated

Substances of very high concern (SVHC) according to REACH, Article 57

This product contains no SVHC above the legal limit of concentration $\geq 0,1\%$ (w /w)

REGULATION (EU) No 649/2012 concerning the export and import of dangerous chemicals (PIC procedure): not regulated

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

Regulatory information

COMPONENT	A	B	C	D	E	F	G	H
Cyclohexanone	Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
		Listed	Listed	Listed	Listed	Listed	Listed	Listed

[A] Catalog of Hazardous Chemicals (2015 Edition), Notice 5th 2015, China State Administration of Work Safety.

[B] Catalog of Priority Hazardous Chemicals for Environment Management, Notice 33th 2014, Ministry of Environmental Protection of PRC.

[C] List of Toxic Chemicals Restricted to be Imported/Exported in China, Notice 85th 2013, Ministry of Environmental Protection of PRC.

[D] Catalog of Stupefacient and Psychotropic Substances (2013Edition), Notice 230th 2013, China Food and Drug Administration.

[E] Catalog of Hazardous Chemicals for Priority Management(First and Second batches), Notice 95th, 2011, Notice 12th 2013, China State Administration of Work Safety



[F] List of Ozone Depletion Chemicals Controlled to be Imported/Exported in China(First to Sixth batches), Notice from 2000 to 2012 Ministry of Environmental Protection of PRC.

[G] Dangerous Chemicals Directory Used to Manufacture Exploder(2011 Edition), Notice 25th Nov. 2011, Ministry of Public Security of PRC1.

[H] Catalog of Highly Toxic Chemicals, Notice 142th 2003, China Ministry of Health.

European/ International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:

R 10 Flammable

R 20 Harmful by inhalation.

Safety Phrases:

S 25 Avoid contact with eyes.

WGK (Water Danger/Protection): CAS#108-94-1: 1

Canada CAS#108-94-1 is listed on Canada'S DSL List

US Federal

TSCA; CAS#108-94-1 is listed on TSCA inventory

16. OTHER INFORMATION

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