



# 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.) Highly flammable liquid and vapour.
- 2.) Causes skin irritation.
- 3.) May be fatal if swallowed and enters airways.
- 4.) May cause drowsiness or dizziness.
- 5.) Toxic to aquatic life with long lasting effects.
- 6.) May damage the unborn child. Suspected of damaging fertility.

#### Precautionary statement(s)

- 1.) Keep away from heat/sparks/open flames/hot surfaces. - No smoking.



- 2.) Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- 3.) Avoid release to the environment.
- 4.) IF SWALLOWED: call a doctor/physician. Do NOT induce vomiting.
- 5.) IF IN EYES: Rinse cautiously with water for 15 minutes.
- 6.) IF ON SKIN Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

### 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.

Obtain medical attention. If signs of poisoning appear, treat as for inhalation.

Wash contaminated clothing before reuse. Contaminated combustible material, e.g. clothing ignites more readily and burns fiercely.

**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.** Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is mouth to mouth or mouth to nose. Use suitable instruments/apparatus. Obtain medical attention.

Never give anything by mouth to an unconscious person.

### 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:

Contain or absorb leaking liquid with sand or earth, consults an expert. Prevent liquid entering sewers, basements and work pits. If substance has entered a water course or sewer or contaminated soil or vegetation, advise police.

### 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. HANDLING 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:** OEL 10 ppm (40 mg/m<sup>3</sup>), STEL 408 ppm (100 mg/m<sup>3</sup>)  
TWA 10 ppm (40 mg/m<sup>3</sup>)

**Appropriate Engineering Controls:** The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Ventilation hoods and fans required when working with organic solvents or in hot melt applications.

### Individual Protection Measures

**Respiratory protection:** In case of insufficient ventilation, wear suitable respiratory equipment required when vapor/aerosols are generated. Filter A(acc. To DIN 3181) for vapors of organic compounds.

**Hand protection:** Handle with gloves. In case full and splash contract wear gloves from butyl rubber. The select protective gloves have to satisfy the specifications of EU Directive 89/686 EEC and standard En 374 derived from its.

**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:** Ventilation hoods and fans required when working with organic solvents or in hot melt applications. Keep working clothes separately. Keep away from food, drink and animal feeding stuffs.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Form,Color and Odor:</b> liquid, colourless, characteristic	<b>Evaporation rate:</b> 23 (n-Bu Acetate = 100)
<b>Melting Point:</b> -31°C	<b>Specific gravity:</b> 0.947-0.949 g/cm <sup>3</sup> at 20 °C
<b>pH:</b> N/A	<b>Solubility in water:</b> Soluble 24 g/l at 20 °C
<b>Boiling:</b> 153-156 °C	<b>Viscosity:</b> 2.2 mPa.s at 20 °C
<b>Vapour pressure:</b> 10 mbar at 38.7 °C	<b>Vapour density:</b> 3.4 g/l
<b>Lower explosion limits:</b> 1.1 %Vol	<b>Upper explosive limit:</b> 9.4 %Vol
<b>Auto-ignition temperature:</b> 420 °C	<b>Flash point:</b> 43 °C
<b>Odour threshold:</b> N/A	<b>Flammability (solid, gas):</b> N/A
<b>Decomposition temperature:</b> N/A	<b>Solubility in other solvents:</b> N/A
<b>n-octanol/water partition coefficient (log P<sub>ow</sub>):</b> 0.81	



## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable under recommended storage conditions.

**Reactions:** Unsuitable working materials: various plastic, rubber. Explosible with air in avaporous/gaseous state.

**Possibility of Hazardous Reactions:** No data available

**Conditions to avoid:** Heat, Flames and sparks.

**Materials to be avoided:** Nitric acid, hydrogen peroxide (risk of explosion), oxidizing agent, mineral acid.

**Hazardous Decomposition Products:** Carbon monoxides, Carbon dioxides (Hazardous decomposition products from under fire condition).

## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity:** LD50 Inhalation – rat – 32.65 mg/l - 4h

LD50 Dermal - rabbit – 948 mg/kg

LD50 Oral –rat - 1620 mg/kg

**Sensitization:** After inhalation of Vapors, in high doses: Irritation symptoms in the respiratory tract. After skin contact, after long term exposure, degreasing effect on the skin, possibly followed by secondary inflammation. Danger of skin absorption. After eyes contact:irritation. After swallowing: gastrointestinal complaints.After absorption of large quantities: Headache, dizziness,Nausea, Vomiting, salivation, narcosis, coma. Toxic effects on the liver and kidneys.

**Chonic toxicity:** Bacterial mutagenicity; Ames cell test is negative.

**Further toxicological information:**The product should be handled with the care usual when dealing with chemicals

## 12. ECOLOGICAL INFORMATION

### Toxicity

Toxicity to fish: LC<sub>50</sub> – L. idus – 527 mg/l - 96h

Toxicity to daphnia and other aquatic invertebrates: EC<sub>50</sub> - Daphnia magna – 800 mg/l - 24h

Toxicity to algae: IC<sub>50</sub> – Sc. quadricauda – 370 mg/l – 8d

Toxicity to bacteria: EC<sub>5</sub> – Ps. Putida – 180 mg/l/ - 16d

**Biodegradability Remarks:** Biodegradation 87% /14d. Readily Biodegradable

**Bioaccumulative potential:** Bioaccumulation is to be expected (log P o/w <1)

**Mobility:** No data available

**Affected in any other way:** No data available



### 13. DISPOSAL CONSIDERATIONS

**Material Disposal:** There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

**Container Disposal:** Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

### 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

#### GHS – Labelling:

##### Hazard statement(s)

H226 Flammable liquid and vapor.

H332 Harmful if inhaled.

##### Precautionary statement(s)



- P210 Keep away from heat/ sparks/open flames/hot surfaces. - No smoking.
- P233 Keep container tightly closed.
- P240 Ground/bond container and receiving equipment.
- P241 Use explosion-proof electrical/ventilating/lighting equipment.
- P242 Use only non-sparking tools.
- P243 Take precautionary measures against static discharge.
- P261 Avoid breathing vapors.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
- P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
- P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P370 + P378 In case of fire: Use carbon dioxide, dry chemical or foam for extinction.
- P403 + P235 Store in a well-ventilated place. Keep cool.

#### Hazard symbol(s)

X<sub>n</sub> Harmful

F Flammable

#### R - phrase(s)

R10 Flammable.

R20 Harmful by inhalation.

#### S - phrase(s)

S25 Avoid contact with eyes.

## 16. OTHER INFORMATION

Modern Chemical Co., Ltd. provides the information contained herein in good faith but makes no representation as to its comprehensive or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.



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