

## Cyclohexanone

### SECTION 1. IDENTIFICATION

<b>Product Identifier</b>	Cyclohexanone
<b>Other Means of Identification</b>	Cyclohexyl ketone, Pimelic ketone, Pimelin ketone, Nadone.
<b>Product Code(s)</b>	CY4710, CY4711, CY4720
<b>Product Family</b>	Organic
<b>Recommended Use</b>	Laboratory and industrial use.
<b>Restrictions on Use</b>	None known.
<b>Supplier Identifier</b>	Alphachem Limited, 2485 Milltower Court, Mississauga, Ontario, L5N 5Z6, (905) 821-2995
<b>Emergency Phone No.</b>	CANUTEC CANADA, 613-996-6666, 24 Hours CHEMTREC, 800-424-9300, 24 Hours
<b>SDS No.</b>	0104

### SECTION 2. HAZARD IDENTIFICATION

#### Classification

Flammable liquid - Category 3; Acute toxicity (Oral) - Category 4; Acute toxicity (Dermal) - Category 4; Acute toxicity (Inhalation) - Category 4; Skin irritation - Category 2; Serious eye damage - Category 1; Specific target organ toxicity (single exposure) - Category 3

#### Label Elements



Signal Word:

Danger

Hazard Statement(s):

Flammable liquid and vapour.

Harmful if swallowed.

Toxic in contact with skin.

Harmful if inhaled.

Causes skin irritation.

Causes serious eye damage.

May cause respiratory irritation.

May cause drowsiness or dizziness.

Precautionary Statement(s):

Wash hands and skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wear protective gloves/protective clothing/eye protection/face protection.

Use only outdoors or in a well-ventilated area.

Do not breathe dust/fume/gas/mist/vapours/spray.  
Keep away from heat, sparks, open flames, and hot surfaces. – No smoking.  
Keep container tightly closed.  
Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ventilating/lighting/equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Store in a well-ventilated place. Keep cool.

#### Other Hazards

May form explosive peroxides.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance:

Chemical Name	CAS No.	%	Other Identifiers
Cyclohexanone	108-94-1	99	Cyclohexyl ketone, Pimelic ketone, Pimelin ketone, Nadone.

### SECTION 4. FIRST-AID MEASURES

#### First-aid Measures

##### Inhalation

Move to fresh air. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. Avoid mouth-to-mouth contact by using a barrier device.

##### Skin Contact

Immediately wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 15-20 minutes. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely.

##### Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Immediately call a Poison Centre or doctor.

##### Ingestion

Never give anything by mouth if person is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. Rinse mouth with water. Immediately call a Poison Centre or doctor.

##### First-aid Comments

Some of the first-aid procedures recommended here require advanced first-aid training. If exposed or concerned, get medical advice or attention.

#### Most Important Symptoms and Effects, Acute and Delayed

If inhaled: can cause severe lung injury. If swallowed: can cause severe irritation of the nose and throat. If on skin: may cause moderate to severe irritation. If in eyes: may cause serious eye damage. May irritate or burn the eyes. Permanent damage including blindness may result.

#### Immediate Medical Attention and Special Treatment

##### Special Instructions

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

### SECTION 5. FIRE-FIGHTING MEASURES

#### Extinguishing Media

##### Suitable Extinguishing Media

Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog. Special "alcohol resistant fire-fighting foams".

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### Unsuitable Extinguishing Media

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

### Specific Hazards Arising from the Product

Closed containers may rupture violently when heated releasing contents. Flammable gas. Can easily ignite. Can readily form explosive mixture with air at room temperature. May travel a considerable distance to a source of ignition and flash back to a leak or open container.

Very toxic carbon monoxide, carbon dioxide.

### Special Protective Equipment and Precautions for Fire-fighters

Use extreme caution. Evacuate area. Fight fire from a protected, explosion-resistant location or maximum distance possible. Approach fire from upwind to avoid hazardous vapours or gases. For a massive fire, immediately evacuate the area and use unmanned hose holder or monitor nozzles.

A full-body encapsulating chemical protective suit with positive pressure SCBA may be necessary. Chemical protective clothing (e.g. chemical splash suit) and positive pressure SCBA may be necessary.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment, and Emergency Procedures

Use the personal protective equipment recommended in Section 8 of this safety data sheet. Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Increase ventilation to area or move leaking container to a well-ventilated and secure area. Eliminate all ignition sources if safe to do so.

### Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

### Methods and Materials for Containment and Cleaning Up

Contain and soak up spill with absorbent that does not react with spilled product. Place used absorbent into suitable, covered, labelled containers for disposal. Store recovered product in suitable containers that are: covered, corrosion-resistant. Review Section 13 (Disposal Considerations) of this safety data sheet. Contact emergency services and manufacturer/supplier for advice.

## SECTION 7. HANDLING AND STORAGE

### Precautions for Safe Handling

Wear personal protective equipment to avoid direct contact with this chemical. Do not get in eyes, on skin or on clothing. Only use where there is adequate ventilation. Eliminate heat and ignition sources such as sparks, open flames, hot surfaces and static discharge. Post "No Smoking" signs.

### Conditions for Safe Storage

Store in an area that is: cool, dry, well-ventilated, out of direct sunlight and away from heat and ignition sources, clear of combustible and flammable materials (e.g. old rags, cardboard). Protect from conditions listed in Conditions to Avoid in Section 10 (Stability and Reactivity). Store in the original, labelled, shipping container.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Cyclohexanone	20 ppm	50 ppm	100 mg/m3			

### Appropriate Engineering Controls

Use local exhaust ventilation and enclosure, if necessary, to control amount in the air. Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored. Do not allow product to accumulate in the air in work or storage areas, or in confined spaces. Provide eyewash and safety shower if contact or splash hazard exists.

### Individual Protection Measures

**Eye/Face Protection**

Wear chemical safety goggles and face shield when contact is possible.

**Skin Protection**

Wear chemical protective clothing e.g. gloves, aprons, boots.

Suitable materials are: butyl rubber, polyvinyl alcohol.

**Respiratory Protection**

Wear a full facepiece NIOSH approved air-purifying respirator with an acid gas cartridge.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

**Basic Physical and Chemical Properties**

<b>Appearance</b>	Colourless liquid.
<b>Odour</b>	Peppermint
<b>Odour Threshold</b>	0.12 ppm
<b>pH</b>	Not applicable
<b>Melting Point/Freezing Point</b>	-47 °C (-53 °F) (melting); Not available (freezing)
<b>Initial Boiling Point/Range</b>	155 °C (311 °F)
<b>Flash Point</b>	43 °C (109 °F)
<b>Evaporation Rate</b>	Not available
<b>Flammability (solid, gas)</b>	Not available
<b>Upper/Lower Flammability or Explosive Limit</b>	9.4% (upper); 1.10% (lower)
<b>Vapour Pressure</b>	0.45 kPa at 20 °C
<b>Vapour Density (air = 1)</b>	3.4
<b>Relative Density (water = 1)</b>	0.947
<b>Solubility</b>	Not available in water; Not available (in other liquids)
<b>Partition Coefficient, n-Octanol/Water (Log Kow)</b>	Not available
<b>Auto-ignition Temperature</b>	520 °C (968 °F)
<b>Decomposition Temperature</b>	Not available
<b>Viscosity</b>	Not available (kinematic); 2.2 mPa.s at 20 °C (dynamic)
<b>Other Information</b>	
<b>Physical State</b>	Liquid

## SECTION 10. STABILITY AND REACTIVITY

**Reactivity**

None known.

**Chemical Stability**

Normally stable.

**Possibility of Hazardous Reactions**

None expected under normal conditions of storage and use.

**Conditions to Avoid**

Incompatible materials. Heat. Open flames, sparks, static discharge, heat and other ignition sources. Sunlight.

**Incompatible Materials**

Strong oxidizing agents (e.g. perchloric acid), strong acids (e.g. hydrochloric acid).

**Hazardous Decomposition Products**

Very toxic carbon monoxide, carbon dioxide.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

### Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Cyclohexanone	8000 ppm (rat) (4-hour exposure)	800 mg/kg (rat)	948 mg/kg (rabbit)

### Skin Corrosion/Irritation

Human experience and animal tests show moderate or severe irritation. Repeated or prolonged exposure can irritate or burn the skin.

### Serious Eye Damage/Irritation

Human experience and animal tests show serious eye irritation.

### STOT (Specific Target Organ Toxicity) - Single Exposure

#### Inhalation

Causes damage to organs nose and throat irritation. Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest.

#### Skin Absorption

No information was located.

#### Ingestion

May cause irritation of the mouth, throat and stomach, depression of the central nervous system. Symptoms may include headache, nausea, dizziness, drowsiness and confusion.

### Aspiration Hazard

May be drawn into the lungs (aspirated) if swallowed or vomited.

### STOT (Specific Target Organ Toxicity) - Repeated Exposure

May cause harmful effects on the kidneys, harmful effects on the liver.

### Respiratory and/or Skin Sensitization

No information was located.

### Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Cyclohexanone	Group 3	A3	Not Listed	Not Listed

ACGIH®: A3 – Confirmed animal carcinogen.

IARC: Group 3 – Not classifiable as to its carcinogenicity to humans.

### Reproductive Toxicity

#### Development of Offspring

Animal studies show effects on the offspring.

#### Sexual Function and Fertility

May cause effects on sexual function and/or fertility.

#### Effects on or via Lactation

No information was located.

### Germ Cell Mutagenicity

No information was located.

### Interactive Effects

No information was located.

## SECTION 12. ECOLOGICAL INFORMATION

This section is not required by WHMIS. This section is not required by OSHA HCS 2012.

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal Methods

Dispose of contents and container in accordance with local, regional, national and international regulations. Contact local environmental authorities for approved disposal or recycling methods in your jurisdiction. Bury in a licensed landfill or burn in an approved incinerator according to federal, provincial/state, and local regulations.

## SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
IATA (Air)	UN1915	Cyclohexanone	3	III
Canadian TDG	UN1915	Cyclohexanone	3	III
US DOT	UN1915	Cyclohexanone	3	III

**Environmental Hazards** Not applicable (Cyclohexanone)

**Special Precautions** Not applicable

**Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

## SECTION 15. REGULATORY INFORMATION

### Safety, Health and Environmental Regulations

#### Canada

**Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)**

Listed on the DSL.

#### USA

**Toxic Substances Control Act (TSCA) Section 8(b)**

Listed on the TSCA Inventory.

## SECTION 16. OTHER INFORMATION

**SDS Prepared By** Alphachem Limited

**Phone No.** (905)-821-2995

**Date of Preparation** September 01, 2015

**Date of Last Revision** March 17, 2016

**References** CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). CSST - Repertoire toxicologique database.

**Disclaimer** This document is offered only as a guide in the safe handling of the above product, and has been prepared from the best information currently available. It is not intended to be all-inclusive and the conditions of use may involve other additional considerations. Since Alphachem Limited cannot anticipate or control the conditions under which the product may be used, it will not be liable for any claims, damages or losses which may result from the use or reliance on any information herein.