610, rue Adanac, Quebec (Quebec) G1C 7B7

SAFETY DATA SHEET

Poison control center (Quebec)
(800) 463-5060

Tel. (Qc): (418) 660-8666
Tel. (Mtl): (450) 443-1046
Fax. (Qc): (418) 660-8998

1. Identification

Product Name **Cyclohexanone**

Cat No. : **CP-0333, CR-0233, CR-0178**

CAS-No 108-94-1
Synonyms Ketohexamethylene; Pimelic ketone.

Recommended Use Laboratory chemicals.
Uses advised against Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Supplier
Laboratoire MAT Inc.
610 Adanac street, Quebec
QC, G1C 7B7, Canada
Tel: 418-660-8666
CANADA
www.labmat.com
labmat@labmat.com

Emergency Telephone Number
CANUTEC : 613-996-6666

2. Hazard(s) identification

Classification

WHMIS 2015 Classification Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

Flammable liquids	Category 3
Acute oral toxicity	Category 4
Acute dermal toxicity	Category 4
Acute Inhalation Toxicity	Category 4
Skin Corrosion/irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3

Target Organs - Respiratory system, Central nervous system (CNS).

Label Elements

Signal Word
Danger

Hazard Statements
Flammable liquid and vapor

Harmful if swallowed, in contact with skin or if inhaled
Causes skin irritation
Causes serious eye damage
May cause respiratory irritation
May cause drowsiness and dizziness

Precautionary Statements
Prevention
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. 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 discharges
Do not breathe dust/fumes/gas/mist/vapours/spray
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Response
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
IF INHALED: Remove person to fresh air and keep comfortable for breathing
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER/doctor
Rinse mouth
Wash contaminated clothing before reuse
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Cyclohexanone	108-94-1	>95

4. First-aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. Obtain medical attention. If not breathing, give artificial respiration.

Ingestion	Clean mouth with water and drink afterwards plenty of water.
Most important symptoms/effects	Breathing difficulties. Causes eye burns. Causes severe eye damage. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Cool closed containers exposed to fire with water spray.
Unsuitable Extinguishing Media	Water may be ineffective
Flash Point	46 °C / 114.8 °F
Method -	Closed cup
Autoignition Temperature	520 °C / 968 °F
Explosion Limits	
Upper	9.4 vol %
Lower	1.10 vol %
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical
Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products
Carbon monoxide (CO) Carbon dioxide (CO_2)
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	2	0	N/A

6. Accidental release measures

Personal Precautions	Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
Environmental Precautions	Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.
Methods for Containment and Clean Up	Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges.

7. Handling and storage

Handling	Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Ensure adequate ventilation. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges. Use explosion-proof equipment.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area.

8. Exposure controls / personal protection

Exposure Guidelines

Component	Alberta	British Columbia	Ontario TWAEV	Quebec	ACGIH TLV	OSHA PEL	NIOSH IDLH
Cyclohexanone	TWA: 20 ppm TWA: 80 mg/m^3 STEL: 50 ppm STEL: 200 mg/m^3 Skin	TWA: 20 ppm STEL: 50 ppm Skin	TWA: 20 ppm STEL: 50 ppm Skin	TWA: 25 ppm TWA: 100 mg/m^3 Skin	TWA: 20 ppm STEL: 50 ppm Skin	(Vacated) TWA: 25 ppm (Vacated) TWA: 100 mg/m^3 Skin TWA: 50 ppm TWA: 200 mg/m^3	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m^3

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.
Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Goggles
Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	Glove comments
Butyl rubber	> 480 minutes	0.35 mm	As tested under EN374-3
Viton (R)	> 480 minutes	0.70 mm	Determination of Resistance to
Nitrile rubber			Permeation by Chemicals

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly
Recommended Filter type: Organic gases and vapours filter Type A Brown conforming to EN14387

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State Liquid
Appearance Colorless
Odor mint-like

Odor Threshold	0.12 ppm
pH	No information available
Melting Point/Range	-47 °C / -52.6 °F
Boiling Point/Range	155 °C / 311 °F @ 760 mmHg
Flash Point	46 °C / 114.8 °F
Method -	Closed cup
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	9.4 vol %
Lower	1.10 vol %
Vapor Pressure	4.5 mbar @ 20 °C
Vapor Density	3.4
Specific Gravity	0.947
Solubility	soluble
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	520 °C / 968 °F
Decomposition Temperature	No information available
Viscosity	2.2 mPas @ 20°C
Molecular Formula	C6 H10 O
Molecular Weight	98.14

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.

Incompatible Materials Strong oxidizing agents, Strong acids,

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2)

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cyclohexanone	LD50 = 1544 mg/kg (Rat)	LD50 = 947 mg/kg (Rabbit)	LC50 = 8000 ppm (Rat) 4 h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Causes eye burns; Irritating to skin

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Cyclohexanone	108-94-1	Not listed	Not listed	A3	Not listed	Not listed

ACGIH: (American Conference of Governmental Industrial *A1 - Known Human Carcinogen*

Hygienists)

A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system Central nervous system (CNS)
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Cyclohexanone	EC50: = 20 mg/L, 96h (Chlorella vulgaris)	Leusiscus idus: LC50>500mg/L 48h	EC50 = 18.5 mg/L 5 min EC50 = 21.3 mg/L 10 min EC50 = 25 mg/L 5 min	EC50: = 800 mg/L, 24h (Daphnia magna)

Persistence and Degradability based on information available. May persist

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility. Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Cyclohexanone	0.86

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Cyclohexanone - 108-94-1	U057	-

14. Transport information

TDG

UN-No UN1915
Proper Shipping Name CYCLOHEXANONE
Hazard Class 3
Packing Group III
Limited Quantity Index: 5
ERAP Index:
Special Provisions:

IATA

UN-No	UN1915
Proper Shipping Name	CYCLOHEXANONE
Hazard Class	3
Packing Group	III

15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

Component	DSL	NDSL	TSCA	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Cyclohexanone	X	-	X	203-631-1	-		X	X	X	X	X

Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

16. Other information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Laboratoire MAT Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

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