

Safety Data Sheet

Cyclohexanone Reagent

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Cyclohexanone

Synonyms/Generic Names: Cyclohexyl ketone; Anone; Hexanon; Ketohexamethylene; Pimelic ketone; Pimelin ketone; Sextone

Product Number: 1770

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information: 920-623-2140 (Monday-Friday 8:00-4:30)
www.columbuschemical.com

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

Hazard Not Otherwise Classified (HNOC): None

Signal Words: Danger

Pictograms:



GHS Classification:

Flammable liquids	Category 3
Acute toxicity, Oral	Category 4
Acute toxicity, Inhalation	Category 4
Acute toxicity, Dermal	Category 4
Skin irritation	Category 2
Serious eye damage	Category 1

GHS Label Elements, including precautionary statements:

Hazard Statements:

H226	Flammable liquid and vapor.
H302+H312+H332	Harmful if swallowed, in contact with skin or if inhaled.
H315	Causes skin irritation.
H318	Causes serious eye damage.

Precautionary Statements:

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 dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/eye protection/face protection/protective clothing.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	If exposed or concerned: Get medical advice/attention.
P330	Rinse mouth.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use dry chemical, alcohol-resistant foam, or carbon dioxide to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of all contents/container to an approved waste disposal plant.

Potential Health Effects

Eyes	Causes eye serious eye damage.
Inhalation	Harmful if inhaled. Causes respiratory tract irritation.
Skin	Harmful if absorbed through skin. Causes skin irritation.
Ingestion	Harmful if swallowed.

NFPA Ratings

Health	1
Flammability	2
Reactivity	0
Specific hazard	Not Available

HMIS Ratings

Health	1
Fire	2
Reactivity	0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Cyclohexanone	>99.5	108-94-1	203-631-1	C ₆ H ₁₀ O	98.14 g/mol

4. FIRST-AID MEASURES

Eyes	Rinse with plenty of water for at least 15 minutes and seek medical attention if necessary.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if necessary.
Skin	Flush with plenty of water and wash using soap. Get medical attention.
Ingestion	Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention if necessary.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product is flammable. Use dry chemical, alcohol-resistant foam, or carbon dioxide on fires involving this product. Use appropriate media for adjacent fire. Cool unopened containers with water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes (carbon oxides) under fire conditions. (See also Stability and Reactivity section).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Neutralize spill if necessary. Absorb spill with noncombustible absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation and avoid inhalation of vapors/mists. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of aerosols. Keep away from sources of ignition.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Cyclohexanone	20 ppm 50 mg/m ³	TLV	NIOSH
	50 ppm 200 mg/m ³	PEL	OSHA
	25 ppm 100 mg/m ³	REL	ACGIH

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health
WEEL: Workplace Environmental Exposure Levels
CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses or goggles. Use face shield if splashing is likely to occur.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear nitrile or rubber gloves, apron or lab coat. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Other	Not Available

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Clear, colorless liquid.
Odor	Odor reminiscent of peppermint and acetone.
Odor threshold	0.88 ppm
pH	Not Available
Melting point/freezing point	-47 °C (-53°F)
Initial boiling point and boiling range	155 °C (311°F)
Flash point	44 °C (111°F)
Evaporation rate	Not Available
Flammability (solid, gas)	Flammable
Upper/lower flammability or explosive limit	LEL: 1.1% (V) UEL: 9.4% (V)
Vapor pressure	4.5 hPa (3.4 mmHg) at 20 °C (68 °F) 13 hPa (10 mmHg) at 38.7 °C (101.7 °F)
Vapor density	3.4 (air=1)
Density	0.944 – 0.948 (water = 1)
Solubility (ies)	Soluble in diethyl ether, acetone. Partially soluble in water.
Partition coefficient: n-octanol/water	log Pow: 0.81
Auto-ignition temperature	245°C (473°F)
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Heat, flames, sparks.
Incompatible Materials	Strong oxidizing agents, plastics, strong alkalis (bases), amines, nitric acid.
Hazardous Decomposition Products	Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity*Cyclohexanone*

Skin	LD50 Dermal - rabbit - 794 - 3,160 mg/kg
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Eyes	Not Available
Respiratory	LC50 Inhalation - rat - 4 h - > 6.2 mg/l
Ingestion	LD50 Oral - rat - 1,534 mg/kg

Carcinogenicity

IARC	3 - Group 3: Not classifiable as to its carcinogenicity to humans (cyclohexanone).
ACGIH	A3: Confirmed animal carcinogen with unknown relevance to humans (cyclohexanone).
NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Irritation, redness, itching.
Eyes	Irritation, redness, watering eyes.
Respiratory	Coughing, wheezing, shortness of breath, dizziness, drowsiness.
Ingestion	Nausea, vomiting, diarrhea, dizziness, drowsiness.

Chronic Toxicity	Prolonged or repeated exposure to skin causes defatting and dermatitis.
Teratogenicity	Not Available
Mutagenicity	Human fibroblast Result: Laboratory experiments have shown mutagenic effects.
Embryotoxicity	Not Available
Target Organ(s)	Acute inhalation toxicity - Breathing difficulties. Liver, Kidneys, Central nervous system, Lungs
Reproductive Toxicity	Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity*Cyclohexanone*

Aquatic Vertebrate	LC50 – Pimephales promelas – 527 mg/L – 96h
Aquatic Invertebrate	EC50 - Daphnia magna (Water flea) - 820 mg/l - 24 h
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Not Available

13. DISPOSAL CONSIDERATIONS

Waste Product or Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residue.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	UN1915, Cyclohexanone, 3, pg III
TDG	UN1915, CYCLOHEXANONE, 3, PG III
IMDG	UN1915, CYCLOHEXANONE, 3, PG III
Marine Pollutant	No
IATA/ICAO	UN1915, Cyclohexanone, 3, pg III

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA Active inventory.
DSL / NDSL	All ingredients are listed on the DSL inventory.
California Proposition 65	Not Listed
Rhode Island: Hazardous Substance List	Listed: Cyclohexanone
Massachusetts: Toxic or Hazardous Substance List, Right to Know	Listed: Cyclohexanone
Pennsylvania: Hazardous Substance List	Listed: Cyclohexanone
New Jersey: Right to Know Hazardous Substance List	Listed: Cyclohexanone
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	No SARA Hazards.
SARA 312	No SARA Hazards.
SARA 313	Not Listed
WHMIS Canada	Class B3: Flammable and combustible liquid – Combustible liquid. Class D1B: Poisonous and infectious material – Immediate and serious effects – Toxic. Class D2B: Poisonous and infectious material – Other effects – Toxic.

16. OTHER INFORMATION

Revision	Date
Original	03/25/2013
Revision 1	09/23/2014
Revision 2	02/18/2015
Revision 3	09/09/2016
Revision 4	08/15/2022

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