

Safety Data Sheet

Cyclohexanone

Version 1.4

Revision Date: 09/01/2019

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Cyclohexanone

Recommended use of the chemical and restrictions on use

Recommended use : Solvent.

Manufacturer or supplier's details

Company : Univar Solutions USA, Inc.
Address : 3075 Highland Pkwy Suite 200
 Downers Grove, IL 60515
 United States of America (USA)

Emergency telephone number:

Transport North America: CHEMTREC (1-800-424-9300)
 CHEMTREC INTERNATIONAL Tel # 703-527-3887

Additional Information: : Responsible Party: Product Compliance Department
 E-mail: SDSNA@univarsolutions.com
 SDS Requests: 1-855-429-2661
 Website: www.univarsolutions.com

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Acute toxicity (Dermal) : Category 3

Skin irritation : Category 2

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H226 Flammable liquid and vapour.
 H302 + H332 Harmful if swallowed or if inhaled.
 H311 Toxic in contact with skin.
 H315 Causes skin irritation.
 H318 Causes serious eye damage.

Precautionary statements : **Prevention:**
 P210 Keep away from heat/sparks/open flames/hot surfaces.
 No smoking.
 P233 Keep container tightly closed.

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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/ vapours/ spray.
 P264 Wash skin 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.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
 P305 + P351 + P338 + P310 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.
 P332 + P313 If skin irritation occurs: Get medical advice/ attention.
 P362 Take off contaminated clothing and wash before reuse.
 P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Hazardous components

CAS-No.	Chemical name	Weight percent
108-94-1	Cyclohexanone	90 - 100

Any Concentration shown as a range is due to batch variation.

Molecular formula : C₆H₁₀O

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
 Show this safety data sheet to the doctor in attendance.
 Do not leave the victim unattended.

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|-------------------------|---|---|
| If inhaled | : | Consult a physician after significant exposure.
If unconscious, place in recovery position and seek medical advice. |
| In case of skin contact | : | If on skin, rinse well with water.
If on clothes, remove clothes.
If skin irritation persists, call a physician. |
| In case of eye contact | : | Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
Take victim immediately to hospital. |
| If swallowed | : | Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Do not induce vomiting without medical advice. |

SECTION 5. FIREFIGHTING MEASURES

- | | | |
|---|---|---|
| Suitable extinguishing media | : | Alcohol-resistant foam
Carbon dioxide (CO ₂)
Dry chemical |
| Unsuitable extinguishing media | : | High volume water jet |
| Specific hazards during fire-fighting | : | Do not allow run-off from fire fighting to enter drains or water courses. |
| Specific extinguishing methods | : | Use a water spray to cool fully closed containers. |
| Further information | : | Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
For safety reasons in case of fire, cans should be stored separately in closed containments.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains. |
| Special protective equipment for firefighters | : | Wear self-contained breathing apparatus for firefighting if necessary.
Use personal protective equipment. |

SECTION 6. ACCIDENTAL RELEASE MEASURES

- | | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.
Ensure adequate ventilation.
Remove all sources of ignition.
Evacuate personnel to safe areas.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. |
| Environmental precautions | : | Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities. |

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Methods and materials for containment and cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from open flames, hot surfaces and sources of ignition. Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

Advice on safe handling : Avoid formation of aerosol. Do not breathe vapours/dust. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
108-94-1	Cyclohexanone	TWA	20 ppm	ACGIH
		STEL	50 ppm	ACGIH
		TWA	25 ppm 100 mg/m ³	NIOSH REL
		TWA	50 ppm 200 mg/m ³	OSHA Z-1
		TWA	25 ppm 100 mg/m ³	OSHA P0

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required. In the case of vapour formation use a respirator with an ap-

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Hand protection	proved filter.
Remarks	: The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	: Eye wash bottle with pure water Tightly fitting safety goggles
Skin and body protection	: Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	: When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: Clear, Colorless, light yellow
Odour	: characteristic, acetone-like, mint-like
Odour Threshold	: 0.12 ppm
pH	: Not applicable
Freezing Point (Melting point/freezing point)	: -47 - -26 °C (-53 - -15 °F)
Boiling Point (Boiling point/boiling range)	: 130 - 170 °C (266 - 338 °F) (1013.33 hPa)
Flash point	: 44 °C (111 °F) Method: closed cup
Evaporation rate	: < 1 (Butyl Acetate = 1)
Flammability (solid, gas)	: No data available
Upper explosion limit	: 9.4 - 12.75 %(V)
Lower explosion limit	: 1 %(V)
Vapour pressure	: < 4 mmHg @ 20 °C (68 °F)
Relative vapour density	: 3.4 @ 20 - 25 °C (68 - 77 °F) (Air = 1.0)
Relative density	: 0.946 @ 20 °C (68 °F) Reference substance: (water = 1)
Density	: 0.95 g/cm ³ @ 20 °C (68 °F)
Bulk density	: 7.88 lb/gal
Solubility(ies)	
Water solubility	: 150 g/l slightly soluble
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: log Pow: 0.81 - 0.86

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Auto-ignition temperature : 420 °C
Thermal decomposition : No data available
Viscosity
Viscosity, kinematic : 2 mm²/s

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : No hazards to be specially mentioned.
Conditions to avoid : Keep away from heat, flame, sparks and other ignition sources.
Incompatible materials : Strong acids
Strong bases
Strong oxidizing agents
Nitric acid
Peroxides
hydrogen peroxide
Hazardous decomposition products : Nitrogen oxides (NO_x)
Smoke
Hydrocarbons
carbon dioxide and carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity****Product:**

Acute oral toxicity : Acute toxicity estimate: 1,909 mg/kg
Acute inhalation toxicity : Acute toxicity estimate: 11.11 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Acute dermal toxicity : Assessment: The component/mixture is toxic after single contact with skin.

Components:**108-94-1:**

Acute oral toxicity : LD50 (Rat): 1,890 mg/kg
Assessment: The component/mixture is moderately toxic after single ingestion.
Acute inhalation toxicity : LC50 (Rat): 15 mg/l
Test atmosphere: vapour
Assessment: The component/mixture is moderately toxic after short term inhalation.

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Acute dermal toxicity : LD50 (Rabbit): 946 mg/kg
Assessment: The component/mixture is moderately toxic after single contact with skin.

Skin corrosion/irritation**Components:****108-94-1:**

Species: Rabbit
Exposure time: 4 h
Result: Irritating to skin.

Serious eye damage/eye irritation**Components:****108-94-1:**

Species: Rabbit
Result: Risk of serious damage to eyes.
Exposure time: 24 h

Carcinogenicity**IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH

Confirmed animal carcinogen with unknown relevance to humans

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Aspiration toxicity**Product:**

No aspiration toxicity classification

Further information**Product:**

Remarks: Solvents may degrease the skin.

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SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

No data available

Persistence and degradability**Product:**Biodegradability : Biodegradation: > 60 %
Remarks: Readily biodegradable**Bioaccumulative potential**

No data available

Mobility in soil

No data available

Other adverse effects**Product:**Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.
For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Univar Solutions ChemCare: 1-800-909-4897Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.**SECTION 14. TRANSPORT INFORMATION****DOT (Department of Transportation):**
UN1915, CYCLOHEXANONE, 3, III

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IATA (International Air Transport Association):

UN1915, CYCLOHEXANONE, 3, III

IMDG (International Maritime Dangerous Goods):

UN1915, CYCLOHEXANONE, 3, III, Flash Point:44 °C(111 °F)

Special Notes: : The flash point for this material is greater than 100 F (38 C). Therefore, in accordance with 49 CFR 173.150(f) non-bulk containers (<450L or <119 gallon capacity) of this material may be shipped as non-regulated when transported solely by land, as long as the material is not a hazardous waste, a marine pollutant, or specifically listed as a hazardous substance.

SECTION 15. REGULATORY INFORMATION

WHMIS Classification : B3: Combustible Liquid
D1B: Toxic Material Causing Immediate and Serious Toxic Effects
D2B: Toxic Material Causing Other Toxic Effects

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Cyclohexanone	108-94-1	5000	5000

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

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Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

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This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

108-94-1	Cyclohexanone	90 - 100 %
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Pennsylvania Right To Know

108-94-1	Cyclohexanone	90 - 100 %
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New Jersey Right To Know

108-94-1	Cyclohexanone	90 - 100 %
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California Prop 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA	: On TSCA Inventory
DSL	: On the inventory, or in compliance with the inventory
AICS	: On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PHIL	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory

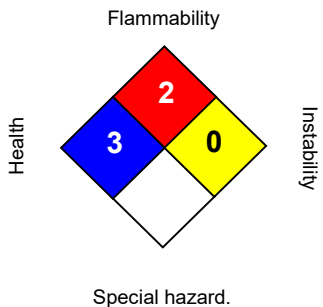
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SECTION 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	3
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Univar Solutions Product Compliance Department (1-855-429-2661) SDSNA@univarsolutions.com.

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Legacy SDS: : R0000746

Material number:

16120379, 16101956, 16055962, 704071, 20155, 55078, 53680, 87839, 70677, 70847, 70566, 86419, 69093, 16102230, 16055963, 16062071, 54100, 70850, 103609, 69373, 103328, 20158, 20153, 20157

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration

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EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		