



Safety Data Sheet according to Globally Harmonized System (GHS)

Printing date 2021-11-16

Revision: 2021-11-16

1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** Cyclohexanone
- **Synonyms:** None
- **CAS Number:**
108-94-1
- **Relevant identified uses of the substance or mixture and uses advised against :**
- **Identified/Recommended uses:** Chemical for synthesis
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Taiwan Prosperity Chemical Corporation, Linyuan
No.9, Gongye 3rd Rd., Linyuan Dist., Kaohsiung City 83245 Taiwan (R.O.C)
Tel: +886-7-6431247 ext 603 Fax: +886-7-6425426
- **Further information obtainable from:** SDS-info@ccp.com.tw
- **Emergency telephone number:** During normal opening times: +886-7-6431247 (8:30-17:30; GMT+8)

2 Hazards identification

- **Classification of the substance or mixture:**
Flam. Liq. 3 H226 Flammable liquid and vapour.
Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H312 Harmful in contact with skin.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Dam. 1 H318 Causes serious eye damage.
STOT SE 3 H335 May cause respiratory irritation.

- **Label elements:**
- **Hazard pictograms:**



GHS02 GHS05 GHS07

- **Signal word:** Danger
- **Hazard statements:**
Flammable liquid and vapour.
Harmful if swallowed or in contact with skin.
Causes skin irritation.
Causes serious eye damage.
May cause respiratory irritation.
- **Precautionary statements:**
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Wear protective gloves/protective clothing/eye protection/face protection.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
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.
Specific treatment (see on this label).
Rinse mouth.
Take off contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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Other hazard: None known.**3 Composition/information on ingredients**

- **Chemical characterisation: Substances**
- **CAS No. Description**
108-94-1 cyclohexanone 99%

4 First aid measures

- **Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Do not induce vomiting; call for medical help immediately.
Call for a doctor immediately.
- **Most important symptoms and effects, both acute and delayed:**
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
Carbon dioxide
Dry chemical
Foam
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** Combustible.
- **Advice for firefighters**
- **Protective equipment:**
Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves).

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralising agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

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Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

7 Handling and storage

Handling:**Precautions for safe handling**

- Ensure good ventilation/exhaustion at the workplace.
- Prevent formation of aerosols.
- Use personal protective equipment as required.

Information about fire - and explosion protection:

- Keep ignition sources away - Do not smoke.
- Protect against electrostatic charges.

Storage:**Conditions for safe storage, including any incompatibilities**

- Store in a cool location.
- Store in cool, dry place in tightly closed receptacles.
- Further information about storage conditions:** Keep container tightly sealed.

8 Exposure controls/personal protection

Additional information about design of technical facilities:

- Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines.
- Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Control parameters**Ingredients with limit values that require monitoring at the workplace:****108-94-1 cyclohexanone**

PEL (USA)	Long-term value: 200 mg/m ³ , 50 ppm
REL (USA)	Long-term value: 100 mg/m ³ , 25 ppm Skin
TLV (USA)	Short-term value: 50 ppm Long-term value: 20 ppm Skin, BEI, A3
IOELV (EU)	Short-term value: 81.6 mg/m ³ , 20 ppm Long-term value: 40.8 mg/m ³ , 10 ppm Skin
OELV (Korea)	Short-term value: 50 ppm Long-term value: 25 ppm 발암성2,Skin

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Ingredients with biological limit values:**108-94-1 cyclohexanone**

BEI (USA)	80 mg/L Medium: urine Time: end of shift at end of workweek Parameter: 1,2-Cyclohexanediol (with hydrolysis, nonspecific, nonquantitative)
	8 mg/L Medium: urine Time: end of shift Parameter: Cyclohexanol (with hydrolysis, nonspecific, nonquantitative)

Personal protective equipment:**General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

Be sure to clean skin thoroughly after work and before breaks.

Ensure that washing facilities are available at the work place.

Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Protection of hands:

Protective gloves

The selected protective gloves have to satisfy the specifications of standard EN 374 or its equivalent.

Replace gloves immediately when torn or any change in appearance (dimension, colour, flexibility etc) is noticed.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation



Tightly sealed goggles

Safety glasses with side shields conforming to EN166, ANSI 87.1-2010, or equivalent.

Protection of hands:

Protective gloves

The selected protective gloves have to satisfy the specifications of standard EN 374 or its equivalent.

Replace gloves immediately when torn or any change in appearance (dimension, colour, flexibility etc) is noticed.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

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· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:

Tightly sealed goggles

Safety glasses with side shields conforming to EN166, ANSI 87.1-2010, or equivalent.

· Body protection:

Flame retardant antistatic protective clothing.

The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

9 Physical and chemical properties

· Information on basic physical and chemical properties**· General Information****· Appearance:****Form:**

Liquid

Colour:

White to Yellow

· Odour:

Characteristic

· Odour threshold:

Not determined.

· pH-value:

Not determined.

· Change in condition**Melting point/freezing point:**

-47 °C

Initial boiling point and boiling range:

157 °C

· Flash point:

44 °C (closed cup)

· Evaporation rate

Not determined.

· Flammability (solid, gas):

Not applicable.

· Ignition temperature:

420 °C

· Decomposition temperature:

Not determined.

· Auto-ignition temperature:

Not determined.

· Explosive properties:

Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· Explosion limits:**Lower:**

1.1 Vol %

Upper:

9.4 Vol %

· Vapour pressure at 20 °C:

5 hPa

· Density at 20 °C:0.95 g/cm³**· Relative density**

Not determined.

· Vapour density

Not determined.

· Evaporation rate

Not determined.

· Solubility in / Miscibility with**water at 20 °C:**

23 g/l

· Partition coefficient: n-octanol/water:

0.81 log POW

· Viscosity:**Dynamic:**

Not determined.

Kinematic:

Not determined.

Organic solvents:

99.0 %

VOC (EC)

99.00 %

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10 Stability and reactivity

- **Reactivity:** When properly handled and stored, no dangerous reaction is known.
- **Chemical stability:** This product is stable under prescribed use and storage.
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** Heating
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**
Harmful if swallowed.
Harmful in contact with skin.

LD/LC50 values relevant for classification:**108-94-1 cyclohexanone**

Oral	LD50	1,620 mg/kg (rat)
Dermal	LD50	1,100mg/kg (rabbit)
Inhalative	LC50/4 h	8,000 mg/l (rat)

- **Skin corrosion/irritation:**
Causes skin irritation.
Rabbit: irritating to the skin (OECD 404)
- **Serious eye damage/eye irritation:** Causes serious eye damage.
- **Respiratory or skin sensitization:** Sensitising to the respiratory system.
- **Germ Cell Mutagenicity:** Not classified based on available data.
- **Carcinogenicity:** Not classified based on available data.
- **Reproductive Toxicity:** Not classified based on available data.
- **Specific Target Organ Toxicity - Single Exposure (STOT SE):** May cause respiratory irritation.
- **Specific Target Organ Toxicity - Repeated Exposure (STOT RE):**
Not classified based on available data.
- **Aspiration Hazard:** Not classified based on available data.
- **Primary irritant effect:**
- **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** Strong irritant with the danger of severe eye injury.
- **Respiratory or skin sensitisation** No sensitising effects known.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** Not classified based on available data.
- **Persistence and degradability**
Easily biodegradable
Degradation : 97% (10d, OECD 302B)
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

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Additional ecological information:**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralised.

Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods**Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system. Any disposal method should also comply with national, regional, provincial, and local laws.

Uncleaned packaging:**Recommendation:**

Disposal must be made according to official regulations.

Empty containers may still contain hazardous residue.

14 Transport information

UN-Number**ADR, IMDG, IATA**

UN1915

UN proper shipping name**ADR**

1915 CYCLOHEXANONE solution

IMDG, IATA

CYCLOHEXANONE solution

Transport hazard class(es)**ADR, IMDG, IATA****Class**

3 Flammable liquids.

Label

3

Packing group**ADR, IMDG, IATA**

III

Environmental hazards:

Not applicable.

Special precautions for user

Warning: Flammable liquids.

Hazard identification number (Kemler code): 30**EMS Number:**

F-E,S-D

Stowage Category

A

Transport/Additional information:**ADR****Limited quantities (LQ)**

5L

Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

Transport category

3

Tunnel restriction code

D/E

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- **IMDG**
- **Limited quantities (LQ)** 5L
- **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml
- **UN "Model Regulation":** UN 1915 CYCLOHEXANONE SOLUTION, 3, III

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

16 Other information

- **Abbreviations and acronyms:**
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- **Sources**
Most toxicological and eco-toxicological data are obtained from European Chemical Agency (ECHA)'s public dissemination website.
- **General Disclaimers:**
CCP Group recommends that all the users/customers/recipients to study this Safety Data Sheet (SDS) carefully and understand all the data or any potential hazards associated with this product. Please consult with appropriate expert if necessary. The information herein is provided in good faith and is believed to be accurate on the date of issue. No warranty, expressed or implied, is given. It is the customer's/user's responsibility to ensure that they are complying with local, regional, state, provincial, and/or national laws in using this product, as regulatory requirement may differ at each level. It is also the customer's/user's responsibility to determine the necessary condition required for using this product safely, as actual operating or usage conditions are beyond CCP Group's control. CCP Group will not be responsible for any SDS obtained from elsewhere other than from CCP Group. If you are unsure whether the SDS you have is current or have obtained the SDS from another source; please contact us to obtain the latest version.

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