



Safety Data Sheet



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Section 1 - Product and Company Identification

Product name : Cyclohexanone	
Other names : --	
Product use : Organic synthesize, especially for adipic acid and caprolactam. Polyvinyl chloride and it's copolymers. Wood coloring , paint cleaning , metal defat. Solvent for paraffin and fat.	
Supplier's name : San Fu Chemical Co., Ltd.	
Supplier's address : 340 Hsiao Hsin Li, Shan-Hua District, Tainan City, Taiwan, R.O.C.	
Supplier's phone : 886-6-5837608	Emergency phone : 886-6-5837608
FAX. : 886-6-5839498	

Section 2 - Hazards Identification

Classification : <ol style="list-style-type: none">1. Inflammable Liquids (Category 3)2. Acute toxicity Category 4 (Ingestion)3. Acute toxicity Category 3 (Skin)4. Serious Eye Damage/Eye Irritation (Category 2)
The Most Important Hazards and effect
Label element : <ul style="list-style-type: none">■ Hazard symbol : Flame、Skull and crossbones <div style="text-align: center;"></div> <ul style="list-style-type: none">■ Signal word : Danger
Hazard statement : <ol style="list-style-type: none">1. Inflammable liquid and vapor/mist2. Harmful if swallowed3. Harmful in contact with skin4. May cause eye irritation
Precautionary statement : <ol style="list-style-type: none">1. Place the containers in well-ventilated area.2. Do not inhale of vapors, mists, or sprays of this product.3. Avoid contacting with eyes.
Others Hazard : --

Section 3 - Composition/Information On Ingredients

Pure substance :



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Chemical name : Cyclohexanone
Synonyms : Anone、Cyclohexyl ketone、Hexanon、Ketoexamethylene、Nadone、Pimelic ketone、 Pimelin ketone、Sextone
CAS No. : 108-94-1
Ingredient contributing to the hazard(%) : 100 %

Section 4 - First Aid Measures

<p>The First-aid Information :</p> <ul style="list-style-type: none">■ Inhalation :<ol style="list-style-type: none">1. Seek medical attention immediately.2. If the person is not breathing give Artificial Respiration immediately.3. Seek medical attention immediately. ■ Skin Contact :<ol style="list-style-type: none">1. Flush with water for at least 30 minutes.2. Remove contaminated clothing as needed.3. Wash affected skin thoroughly with soap and water.4. Clean thoroughly the contaminated clothing before reuse or discard. ■ Eye Contact :<ol style="list-style-type: none">1. Wear appropriate protective gloves to prevent skin exposure if necessary.2. Immediately flush the eyes with large amounts of clean low-pressure water for at least 20 minutes, occasionally lifting the upper and lower lids.3. Avoid contaminated unaffected area.4. Flush repeatedly if still feels the irritation.5. Get medical attention immediately. ■ Ingestion :<ol style="list-style-type: none">1. Never give anything by mouth to an unconscious or convulsive person.2. If the patient is conscious, rinse mouth thoroughly with water.3. Do not induce vomiting.4. Have victim drink 240-300ml of water.5. Get medical attention immediately.
<p>The Most Important Symptoms and Hazardous Effects :</p> <p>Inhalation of cyclohexanone vapors may cause narcosis, headache, drowsiness, tremors and other CNS effects.</p>
<p>Protection of First-aiders :</p> <p>Wear category C protective equipments to practice the first aid in the safety area.</p>
<p>Notes to a Physician :</p>



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If swallow, gastric lavage or active carbon may be considered.

Section 5 - Fire Fighting Measures

Extinguishing Media : Use carbon dioxide, dry chemical, foam

Specific Hazards when Fire-fight :

1. Flammable liquid , vapor-air mixtures are explosive above 44°C.
2. Vapor is heavier than air may spread far. Once the substance meet the source of fire, may cause tempering.
3. Accumulation in the low lying place will increase the danger of burning and poisoning.
4. Containers may fracture when heated.

Specific Fire-fighting Procedure :

1. Fight fire from protected location or safe distance.
2. Approach fire from upwind. Stay away from the low or confined area.
3. Stop leak before fire fighting. If impossible to stop leak and no danger around, let it burn out. If fire fighting without stopping leak, vapors may form an explosive mixture with air.
4. Isolate materials not caught on fire, and protect personnel.
5. Move the undamaged containers from fire area if safe to do so.
6. Water spray may be used to reduce vapors and cool containers exposed to fire.
7. It may be ineffective to extinguish the fire with water.
8. If materials not caught on fire, use water spray to reduce vapors and protect people who try to stop leak.
9. It is ineffective to extinguish fire with water.
10. In case of large-scale fire, cool containers with water from unmanned hose holder or monitor nozzles.
11. If possible, evacuate from fire area and let it burn out.
12. Keep away from tanks.
13. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire.
14. Do not enter unless wear specific protective gears.

Specific Protection of Firefighters : In the event of a fire, wear protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Section 6 - Accidental Release Measures

Personal Precautions :

1. Restrict access to area until completion of clean up.
2. Ensure clean up is inducted by trained personnel only.
3. Wear appropriate personal protective equipment.

Environmental Precautions :

1. Well-ventilated the contaminated area.
2. Remove all sources of ignition.
3. Notify the occupational safety health unit or environmental protection unit.



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Methods for Cleaning up :

1. Prevent contacting with the spills or leaks.
2. Prevent entry into sewers or confined area.
3. Stop leak if without risk.
4. Absorb with dry earth or sand. Dike if necessary.
5. Small Spill: Cover and soak up with inert absorbent material. The waste absorbent material is hazardous as the product. Store in the appropriate containers with covers and hazardous label. Small amounts of residue may be flushed with plenty of water.
6. Large Spill: Contact the fire department, emergency management agency, or the suppliers immediately.

Section 7 - Handling and Storage

Handling :

1. This chemical is combustible and toxic liquid. Engineering measures should be running while handling.
2. The staff should receive proper training and inform the risk and safety handling method.
3. Do not operate alone. Must assist by someone who is trained and knows how to first-aid.
4. If possible, use a confined process.
5. In the event that a ventilation system fails, report to the supervisor immediately if experience toxic symptoms or sings. Avoid contact this substance or polluted equipments if not wear proper protective gears.
6. Remove all sources of ignition and put up no smoking signs
7. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.
8. Separate from incompatibles.
9. Handling amount of usage should be kept to a minimum.
10. Consider install equipment to prevent fire and spilling.
11. Do not pour unused portion back into the container.
12. Label the container.
13. Before handling, check leak in a well-ventilated area away from storage place, and keep the container closed while not use.
14. Store in cool, dry, and well-ventilated area. Dark area is preferred. Keep away from any sources of ignition.
15. Indoor and outdoor, do not have any combustible.
16. Keep away from oxidants, corrosion materials, and other incompatible materials.

Storage :

1. Store in a cool, dry, well-ventilated area, away from sunshine, heat sources, and incompatible substances.
2. Ensure the storage in an isolated fireproof building.
3. The flooring should be impermeable to the product.
4. Make a threshold at the door and build a slope or a groove in front of the door to enable the fluid leakage to be emitted to a safe place.
5. Clearly labeled in the entrance of the storage place, no obstacle. Only allowed trained personnel access.
6. Separate the working area, eating area, and protective gear storage place.



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7. Keep MSDS, a fire extinguisher and cleaning equipment nearby.
8. All equipments should be regularly checked and maintained.
9. All containers should be regularly checked and maintained for the label and damage.
10. Ground barrels that store the liquids.
11. Store in the suggested temperature from the chemical manufacturer or supplier. If necessary, install the temperature alarm.
12. Install Well-ventilated system. Keep away from sources of spark, open flame, oxidizing agents. Use explosion-proof equipment and certified safety electric equipments. Use proof electrical equipment (ventilating, lighting and handling).
13. The exhaust of the storage tank should install the extinguisher.

Section 8 - Exposure Controls & Personal Protection

Engineering measures :			
Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.			
Control parameters			
TWA	STEL	Ceiling	Biological standards
37.5ppm	37.5ppm	--	--
Personal protective equipment :			
<ul style="list-style-type: none"> ■ Respiratory Protection : <ul style="list-style-type: none"> • Below 625 ppm : Wear continuous-flow mode respirator with oxygen contained breathing apparatus and a full-face organic vapor respirator. • Below 700 ppm : a full-face organic vapor PAPR respirator or chemical cartridge respirator. Wear a NIOSH approved full-face piece self-contained breathing apparatus. • Unknown concentration : Wear a NIOSH approved full-face piece self-contained breathing apparatus and positive pressure. • Rescue : Wear a full-face organic vapor respirator or NIOSH approved full-face piece self-contained breathing apparatus. ■ Hand Protection : Wear impervious gloves made of Butyl rubber, 4H, PVA . ■ Eye Protection : Wear chemical splash goggles and face shield. ■ Skin and Body Protection : Wear protective clothing, overalls, working boots made by rubber materials mention above. 			
Hygiene measures :			
<ol style="list-style-type: none"> 1. Immediately change contaminated clothing after work. Appropriate warning before cleaning. 2. Wash hands thoroughly after handling. 3. Maintain cleanness in the work places. 			

Section 9 - Physical & Chemical Properties

Appearance : oily liquid. Darkens on exposure to light or air.	Odor : Acetone or peppermint odor
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Sense of smell threshold value : 0.12-100ppm (detection) 0.12ppm (recognition)	Melting Point: -47°C
pH value : near neutral	Boiling point/boiling range : 157°C
Flammability: --	Flash point : 44°C
Decomposition temp : --	Test method : --
Auto ignition temp : 615 °C (1139°F)	Explosion properties : 1.1 % @100°C ~ 9.4 %
Vapor pressure : 4 mmHg @20°C	Vapor density : 3.38(air=1)
Density : 0.95 (H ₂ O=1)	Solubility : 2.3g/100g H ₂ O @20°C
log Kow : 0.81	Evaporation Rate : 0.29

Section 10 - Stability & Reactivity Data

Stability : Stable under normal temperature and pressure , may formed peroxide.
Possible hazardous reactions under specific conditions : <ol style="list-style-type: none">1. Oxidizer (strong): may cause fire or explosion.2. Nitric acid and peroxide: cause oily and exploded peroxide.3. Corrode plastic.
Conditions to avoid : Spark, heat, fire, ignition sources
Materials to avoid : Strong oxidant
Hazardous decomposition products : Imine and polymer with deep color

Section 11 - Toxicological Information

Route of exposure : Inhalation、Skin、Eye、Ingestion
Symptoms : Skin and eye irritation, headache, vomiting, dizzy, drowsiness, death, mental disorder
Immediate Toxicity : <ol style="list-style-type: none">1. Skin: Irritation to skin depend on concentration. Harmful to central nervous system if absorbed through the skin.2. Inhalation: Expose for 3-5 mins, 75ppm irritation to nose and throat, 50ppm irritation to throat. 25ppm no perception. High concentration vapor harm central nervous system. Super high concentration may lose consciousness or death.3. Eye: Concentration more than 15% solution causes serious and corrosive damage, may lead to permanent harm or ablespia. Concentration less than 10% causes irritation. Vapor causes eye irritation.4. Ingestion: Ingestion large amounts of cyclohexanone harm central nervous system. Inhaled will cause fatal lung edema, which leads to severe lung damage, breathing, heart failure and death.



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- LD₅₀: 1535 mg/kg (Oral, rat) ; 948(Skin, hare)
- LC₅₀: 8000 ppm/4H (Inhale, rat)
- 500mg(Skin, hare): Slight irritation
- 20mg(Eye, hare): Serious irritation

Specific effects :

Prolonged or repeated skin contact may cause defatting and dermatitis. Prolonged exposure may cause non-specific nervous system effects. Animal studies indicate that the product may affect the liver and kidneys.

Section 12 - Ecological Information

Ecotoxicology :

- LC₅₀(fish) : --
- EC₅₀(Aquatic Invertebrates) : --
- Bioconcentration factor (BCF) : --

Persistence and degradability :

- Half-Life (Air) : 24-100 hr
- Half-Life (Water surface) : 74-100 hr
- Half-Life (Groundwater) : --
- Half-Life (Soil) : --

Bioaccumulative potential : --

Mobility in soil : If released to soil, it is expected to biodegrade fairly rapidly following acclimation.

Other adverse effects : It is harmful for the bioconcentration in the water.

Section 13 - Disposal Considerations

Methods of disposal :

1. Follow ROC Environmental Laws and Regulations.
2. Follow the processing of the storage condition for the waste products.

Section 14 - SDS Transport Information

UN classification number : 1915

Proper D.O.T Shipping Name : Cyclohexanone

Hazard Class : Class 3: Flammable Liquids

Packing Group : III

Marine pollution : --



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Specific precautionary transport measures and conditions : --

Section 15 - Regulatory Information

Regulations :

1. Occupational Safety and Health Act
2. Regulations for the Labelling and Hazard Communication of Hazardous Chemicals
3. Road Traffic Safety Regulations
4. Industrial Waste Storage and Disposal Regulations
5. Assessment and Classification Administration of Hazardous Chemicals
6. Permissible Exposure Limits of Hazardous Substances in the Work Environment
7. Public Hazardous Materials and Flammable Pressurized Gases Establishment Standards and Safety Control Regulations.
8. Organic Solvent Poisoning Prevention Regulations

Section 16 - Other Information

Literature references	1. CHEMINFO Database , CCINFO Disc , 2005-2	
	2. HAZARDTEXT Database , TOMES PLUS Disc , Vol.63 , 2005	
	3. RTECS Database , TOMES PLUS , Vol.63 Disc , 2005	
	4. HSDB Database , TOMES PLUS , Vol.63 Disc , 2005	
	5. ChemWatch Database , 2004-4	
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