




Safety Data Sheet for Acetone

I. Identification

Chemicals name: ACETONE
Other Information: -
Relevant identified uses of the substance or mixture and uses advised against :Specification tests for Chemical products (such as Methyl isobutyl ketone, Methyl isobutyl carbinol (MIBC); Methylmethacrylate); solvents such as paint, lacquer, enamels, cellulose acetate textile solvent; cleaning and sterilizing of precision equipment; Potassium Iodide and Potassium Permanganate solvents; Methylmethacrylate fiber deglazer; sulfurized rubber products.
Information on Producer/Supplier Name, Addresses, Phone: Linyuan Factory, LCY Chemical Corp / NO.11, Shihhua 3 rd Rd., Linyuan District, Kaohsiung City, Taiwan (R.O.C)
Emergency Phone / Fax: (07) 6419966-137 / (07) 6410537

II. Hazard Identification:

Hazard Category: Class 2 flammable liquids, Class 3 skin corrosion/irritation substance, Class 2 severe injury/eye irritation materials, Class 2 hazardous inhalation substance.	
Labeled Contents:	
	
Symbols:	Flame, Exclamation Point, Health hazard
Warning:	Danger
Hazard Warning Information:	
Highly flammable liquid and vapor	
Produces light skin irritation	
Produces eye irritation	
May cause injuries if ingested and entered into the respiratory tract.	
Hazard Prevention Measures:	
Place container in a well-ventilated area.	
Keep away from inflammables. – Smoking prohibited.	
For contact with eyes, wash with large amount of water and then seek medical help.	
Other Hazards: -	

III. COMPOSITION OF MIXTURE

Single

English Name: ACETONE
Synonyms: Dimethyl Formaldehyde, Dimethylketal, Dimethyl Ketone, Ketone Propane, Beta-Ketopropane, Methyl Ketone, 2-Propanone, Pyroacetic Acid, Pyroacetic Ether
Chemical Abstracts Number (CAS No.): 00067-64-1
Percentage for Chemical Ingredient (%): 100



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IV. First Aid Measures:

Emergency and First Aid Procedures:

Inhalation:

1. Remove the pollution source or the patient to a place with fresh air.
2. If discomfort persists, seek medical care immediately.

Skin Contact: :

1. Use warm water to alleviate and wash the contaminated areas for 5 minutes or until the contaminants are removed.

Eye Contact:

1. Immediately lift eyelids, use running warm water to wash contaminated eye(s) for 20 minutes or until the contaminants are removed.
2. Prevent clean water from contacting the unaffected eye.
3. Get medical attention immediately.

Ingestion:

1. If the patient is losing consciousness, unconscious or in spasm, do not feed anything orally.
2. If the patient is conscious, let the patient rinse his/her mouth completely with water.
3. Do not induce vomiting.
4. Let the patient drink 240-300ml of water.
5. Seek medical care immediately.

Major Disease and Harm Effect: Concentration higher than 2000 ppm may induce sleepiness, nausea, vomit, intoxication and dizziness.

First-Aid Personal Protection: Must wear Class C protective gear and perform emergency rescue in safe area.

Prompt to Doctor: If ingested accidentally, gastric lavage and active carbon should be administered.

V. Fire Fighting Measure:

Suitable Extinguishing Media: chemical powder, alcoholic foam and carbon dioxide

Special Exposure Hazards:

1. Liquid is extremely flammable and may be ignited at room temperature.
2. Vapor is heavier than air and may travel to far places and flashback from ignition sources.
3. Will accumulate in closed areas.
4. Containers in burning areas may rupture and explode.
5. Even diluted solution may ignite.

Special Extinguishing Procedure:

1. Retreat and extinguish the fire from a safe distance or a protected area.
2. Stay upwind to keep away from hazardous vapor and toxic decomposition.
3. Any leakage should be stopped before extinguishing the fire. If the leakage cannot be stopped and there is no immediate danger in the surrounding area, allow it to burn away. If the leakage is not stopped before extinguishing the fire, the vapor and the air will form an explosive mixture and ignite afterwards.
4. Separate materials that are not on fire and protect the personnel.
5. Move the container away from the fire field under safe conditions.
6. Use water mist to cool the tanks or containers in exposed the fire field.
7. The use of water mist to extinguish fire may be ineffective unless executed by fire fighters trained for extinguishing flammable liquids.
8. If the leakage is not ignited, spray water mist to disperse vapor and protect the personnel who try to stop the leakage.
9. A water spout is ineffective for extinguishing the fire.
10. For a big fire in a large area, use the unmanned water mist stand or the automatic water fire monitor.
11. Retreat from the fire field and allow the fire to burn out.
12. Stay away from the tanks.
13. When the safety valve alarm of the tank sounds or



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the color changes due to fire, retreat immediately. 14. Personnel without special protective equipment should not enter the fire field.

Special Protection Equipment: Fire fighters must wear air respirators, fire fighting coats, and protective gloves.

VI. Accidental Release Measures:

Personal Protection:

1. Restrict the access to the area till the polluted area is cleaned up completed. 2. Make sure the cleaning work is performed by trained personnel. 3. The personnel should wear appropriate personal protective equipment.

Environmental Protection:

1. The air in the area should be ventilated and exchanged. 2. All flammable sources should be eliminated. 3. Report the accident to the safety, health, and environmental protection authorities of the government.

Methods for Cleaning Up:

1. Do not come in contact with the released chemical. 2. Avoid the released chemical from entering the sewers, drains, or sealed spaces. 3. Stop or reduce the leakage under safe conditions if possible. 4. Use sand, earth, or other absorbents that do not react with the released chemical to block the leakage. 5. Small Quantity: Use an absorbent that does not react with the released chemical to absorb. The polluted absorbent becomes as harmful as the released chemical and should be placed in the appropriate container that is capped and labeled. Use water to clean up the leakage area. The small release may be diluted with a large quantity of water. 6. Large Quantity: Contact the fire fighting department, emergency response department, and the supplier for assistance.

VII. Handling and Storage:

Handling:

1. This substance is a highly flammable and toxic liquid. Therefore, personal protective equipment should be utilized during disposal while the engineer control is operational. The staff should receive relevant trainings on the risk and safe handling of this substance. 2. All flammable sources should be removed and kept away from heat and incompatible substances. 3. The "Smoking Prohibited" sign should be present in the work area. 4. All tanks, transfer containers and pipes must be grounded and in contact with bare metal. 5. When the operation is not conducted in the sealed system, the connections between the operation container and the receiving transmission equipment should be at the equivalent electric potential. 6. The empty tanks, containers, and lines may contain harmful residues. Therefore, there should be no welding, cutting, drilling, or heating before they are cleaned. 7. The tanks or containers may be filled with inert gas to reduce the risk of fire and explosion. 8. The ventilation system or equipment that does not produce sparks used in the work area should be explosion-proof. 9. The aisles and exits should be free from obstruction. 10. The installation of the system for detecting leakage and fire, the appropriate fire-fighting system, or emergency operation equipment in the storage area and large quantity operation area should be taken into consideration. 11. The formation of mist or vapor during the operation should be avoided. The operation should be conducted in a well-ventilated area in the smallest quantity possible. The operation area should be separated from the storage area. 12. Wear appropriate personal protective equipment when necessary to avoid contact with this chemical substance or the polluted equipment. 13. Do not use with incompatible chemicals (such as strong oxidants) in order to decrease the risks of fire and explosion. 14. Use containers made from compatible materials. Do not spill during dispensing. 15. Do not use air or inert gas to



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pressurize the liquid for the transport out of the container. 16. Unless the area is isolated with a fire-resistant structure, do not conduct the handling operation in the storage area. 17. Use a certified flammable liquid storage container and handling equipment. 18. Do not pour polluted liquid back to the original container. 19. The containers should be labeled clearly. Keep the container fastened to avoid damage when not in use.

Storage:

1. The chemical should be stored in cool, dry, and well-ventilated area away from direct sunlight. Keep away from heat sources, flammable sources, and incompatibles. 2. Consider the installation of spill and alarm devices in the storage areas. 3. Storage facilities must be constructed using fireproof materials. 4. Use no-spark ventilation system, approved anti-explosion equipment and safe electrical systems for the storage area. 5. The floor should be construction with non-permeable materials to prevent absorption by the floor. 6. Set up slopes, doorsills or furrows at doorways so that leaking substances are discharged to a safe place. 7. Label storage areas clearly with no obstacles and only assigned or trained personnel are allowed to enter. 8. Separate the storage area from the work area; stocks should stay away from lifts, construction objects, room exits or main passages. 9. There should be adequate fire extinguishers and leakage cleaning equipment nearby the storage area. 10. Inspect the storage containers regularly for damages or leakages. 11. Inspect all new containers to see if they are properly labeled and without damage. 12. Limit the storage quantity. 13. Use storage containers made of compatible materials to store the spilled or leaked substances. 14. Ground and potentially bond storage tanks with other equipment. 15. Use anti-explosive refrigerators for small amount of storage. Empty tanks may still contain hazardous residues so they should be sealed and stored separately. 16. Tanks used for storing inflammable liquids must be installed with relief valve and vacuum relief valve. 17. Store under the temperature recommended by the chemical manufacturer or supplier. If necessary, install a temperature detector alarm for warning if the temperature is too high or too low. 18. The storage of large quantities should be avoided. The chemical should be stored in the isolated fireproof building. 19. The exhaust pipes of tanks should be installed with flame arresters. 20. The storage tanks should be built on the ground level with the entire bottom sealed to prevent leakage. The liquid control dam able to hold the entire volume should be present in the surrounding area.

VIII. Exposure Control / Personal Protection:

Engineering Control:

1. A separate and grounded ventilation system that will not produce sparks shall be applied.
2. Exhaust opening is connected directly outside the window.
3. Provide sufficient fresh air to replenish the air exhausted by the exhaust system.

Control Factor

TWA	STEL	CEILING	BEI
750 ppm	937.5 ppm	—	100mg/L (Acetone in urine)

Personal Protection Equipment:**Respiratory Protection:**

Below 2500ppm: Chemical filter cartridge type with organic vapor filter cartridge, powered air purifying type, supplied air type, and self-contained breathing apparatus.

Unknown concentration: Positive-pressure self-contained respiratory apparatus, positive-pressure full air-supply respiratory apparatus with positive-pressure self-contained respiratory apparatus.

Escape: Gas mask with organic vapor filter cartridge, life escape self-contained breathing apparatus.



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Hand Protection:	Impermeable gloves made from butyl rubber, Teflon, 4H, Barricade, Chemrel, Responder, Trelchem and Tychem 10000 preferred.
Eye Protection:	Anti-chemical splashing safety goggles and mask (lowest limit is 8 inches)
Skin & Body Protection:	The above-mentioned one-piece protective rubber clothing, work boots, eye wash and quick shower facilities.
Hygiene Procedures:	
1. Polluted clothes should be removed as soon as the work is completed. The clothes should be worn or discarded only after being washed. The washing staff should be informed of the harmful effects of the pollution. 2. Eating, drinking, and smoking are strictly prohibited in the work area. 3. Wash hands thoroughly after handling the substance. 4. Keep the work area clean.	

IX. Physical and Chemical Properties / Characteristics:

Appearance: Colorless and transparent liquid	Odor: Special sweet flavor, mint flavor
Odor threshold: 3.6-653ppm (detected), 33-699ppm (sensed)	Melting point: -94.6°C
pH value:	Boiling Point / Boiling Range: 56.2°C
Flammability (solid, gas): -	Flash Point: -18°C
Decomposition Temperature: -	Test Method: Close Cup
Spontaneous Temperature: 465 °C	Exposure Limits: 2.5 ~ 12.8%
Vapor Pressure: 180 mmHg	Vapor Density: 2
Specific Gravity: 0.791	Solubility in Water: Completely soluble
Log Kow: -0.24	Percent volatile: 5.6 (n-Butyl Acetate = 1)

X. Stability and Reactivity:

Stability: Stable under normal conditions
Special Conditions of Hazardous Reaction:
1. Acute reaction to oxidizer (such as oxide, nitrate, perchlorate), strong reducing agent, chlorinated solution and alkaline mixture (such as chloroform and sodium hydroxide), increases the risk of fire and explosion. 2. Strong reaction to potassium t-butoxide, hexachloromelamine, sulfur dichloride.
Conditions to Avoid: Sparks, fire, heat, ignition sources, long exposure to heat.
Incompatibility: 1. Oxidizer, chlorinated solution and alkaline mixture, potassium t-butoxide, hexachloromelamine, sulfur dichloride and strong reducing agent.
Hazardous Decomposition Products: Heat decomposition produces carbon monoxide and carbon dioxide.

XI. Toxicological Information

Exposure route: inhalation, skin contact, eye contact, ingestion
Symptoms: Headache, weakness, tiredness, nausea, feelings of intoxication, vomiting, atrophy, unconsciousness, defatting of the skin, dermatitis, disorientation
Acute Toxicity:
Skin: 1. Direct contact may cause mild irritation.
Inhalation: 1. No acute effect at low concentration. Slight irritation to nose and pharynx at high concentration (about 1000ppm). 2. Concentration higher than 2000ppm may induce sleep, nausea, vomiting,



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Ingestion:	feeling of intoxication and dizziness. 3. Concentration higher than 10000ppm may induce unconsciousness and death. 1. Irritates pharynx, esophagus and stomach. 2. Symptoms for large amount of ingestion are the same as for inhalation (such as headache, weakness, tiredness, etc.) 3. Aspiration into lungs may produce fatal lung damage.
Eye:	1. High concentration vapor (1000ppm) can cause slight but short irritation. 2. The liquids are severely irritating to the eyes. LD50 (test animal, absorption route): 5800 mg/kg (rat, ingestion) LC50 (test animal, absorption route): 50100 ppm/6H (rat, inhalation) 500mg/24H (rabbit, skin): causes slight irritation 20mg/24H (rabbit, eyes): causes medium level irritation.
Chronic:	1. Prolonged or repeated skin contact may cause defatting of the skin or dermatitis (dryness, irritation, redness and cracking). 2. Daily exposure of 3 hours at 1000ppm concentration for 7 to 15 years will result in nose and pharynx irritation, disorientation and weakness. 3. Exposure to acetone will increase the liver toxicity of chlorinated solutions such as 1,1-dichloroethylene, 1,1,2-trichloroethane, carbonyl chloride, chloroform, trichloroethylene, bromodichloroethylene, dibromochloropentadecane, etc. 31500ug/m3/24H (mammals, inhalation) affects fertility.

XII. Ecological Information:

Eco-toxicity: LC50 (Fish): 8300-40000mg/l/96H EC50 (aquatic invertebrates): 10mg/l/48H (cyclops) Bio-concentration Factor (BCF): 0.69
Durability and Degradability: 1. Although acetone biodegrades rapidly with or without the presence of oxygen, but under high concentration, acetone is toxic to microorganisms. 2. When released into the air, it will react with the free oxygen radicals (half-life is about 22 days). 3. When released into water, this material is expected to readily biodegrade. Half-life (air): 279~2790 hr Half-life (water surface): 24~168 hr Half-life (underground water): 48~336 hr Half-life (soil): 24~168 hr
Biological Accumulation: 1. Will not accumulate; a large portion of the acetone will be discharged through respiration. A small amount of acetone will oxidize to form carbon dioxide and discharged through respiration and urine.
Fluidity in the Soil: 1. When released into the soil, it is expected to readily biodegrade and quickly evaporate.
Other adverse effects: -

XIII. Disposal Information:

Disposal Information:



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1. Dispose according to related regulations.
2. Small amounts can be burned in an approved incinerator while large amounts can be sent to an approved waste facility for disposal.
3. Waste substances must be kept in a safe container before they are disposed.
4. Substances with absorbed acetone can be buried in approved landfills.

XVI. Transport Information:

The United Nations Number (Un-No): 1090
UN Transport Name: Acetone
Transport Hazard Classification: Class 3 Flammable Liquids
Packaging Category: II
Marine Pollutant (Yes/No): No
Special Transport Way and Note: -

XV. Regulation Information:

Apply Regulation:
1. Enforcement Rules of the Occupational Safety and Health Act
2. Regulation of Labelling and Hazard Communication of Dangerous and Harmful Materials
3. Ordinance on Prevention of Organic Solvent Poisoning
4. Standards of Permissible Exposure Limits of Airborne Hazardous Substances in Workplace
5. Traffic Safety Regulations
6. Standards for the Storage, Clearance, and Disposal of Industrial Waste
7. Public Hazardous Materials and Flammable Pressurized Gases Establishment Standards and Safety Control Regulations

XVI. Other Information:

Reference	1. CHEMINFO Database, CCINFO CD, 2005-2 2. RTECS Database, TOMES PLUS CD, Vol.63 , 2005 3. HSDB Database, TOMES PLUS CD, Vol.63 , 2005 4. ChemWatch Database, 2004-4	
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Date	January 27, 2015	
Note	This SDS version is intended for reference only.	