

Section 1 - Chemical Product and Company Identification

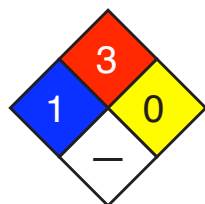
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Material Name: Acetone **CAS Number:** 67-64-1
Chemical Formula: C₃H₆O
Structural Chemical Formula: CH₃COCH₃
EINECS Number: 200-662-2
ACX Number: X1001253-6
Synonyms: ACETON; ACETONE; CHEVRON ACETONE; DIMETHYL KETONE;
 DIMETHYLFORMALDEHYDE; DIMETHYLKETAL; EPA PESTICIDE CHEMICAL CODE 004101; KETONE
 PROPANE; KETONE,DIMETHYL; BETA-KETOPROPANE; METHYL KETONE; 2-PROPANONE;
 PROPANONE; PYROACETIC ACID; PYROACETIC ETHER
General Use: Solvent for fats, oils, waxes, resins, rubber, plastics, lacquers.
 Used in manufacture of methyl isobutyl ketone, mesityl oxide, acetic acid, diacetone alcohol, isoprene. Used in solvent
 extraction processes.
 Solvent in the manufacture of explosives and rayon. Component of adhesives, glues, cleaning solvents, lacquer
 thinners, nail polish, paint removers.
 Storing acetylene gas (takes up about 24 times its volume of the gas).
 Purifying paraffin and biomedical hardening and dehydrating tissues.
 Minor food additive, permitted in USA.

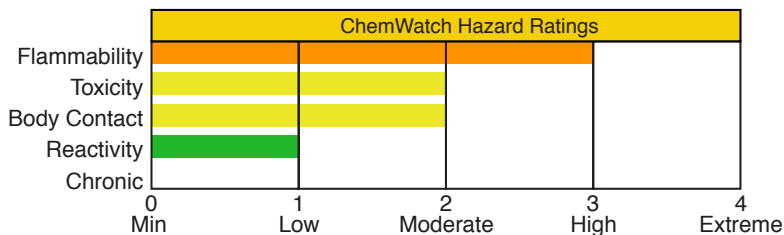
Section 2 - Composition / Information on Ingredients

Name	CAS	%
acetone	67-64-1	95-99.5
OSHA PEL TWA: 1000 ppm; 2400 mg/m ³ .	NIOSH REL TWA: 250 ppm (590 mg/m ³).	DFG (Germany) MAK TWA: 500 ppm; PEAK: 1000 ppm.
ACGIH TLV TWA: 500 ppm; STEL: 750 ppm.	IDLH Level 2500 ppm (10% LEL).	
EU OEL TWA: 500 ppm.		

Section 3 - Hazards Identification



Fire Diamond



HMIS	
1	Health
3	Flammability
0	Reactivity

ANSI Signal Word

Danger!



Flammable

☆☆☆☆☆ **Emergency Overview** ☆☆☆☆☆

Colorless, highly volatile liquid; sweet odor. Irritating. Other Acute Effects: muscle weakness, mental confusion, coma (high concentrations). Ingestion: GI irritation, kidney/liver damage, metabolic changes, coma. Chronic Effects: dermatitis. Highly flammable.

Potential Health Effects

Target Organs: respiratory system, central nervous system (CNS), skin
Primary Entry Routes: inhalation, skin contact, eye contact, ingestion
Acute Effects
Inhalation: The vapor is discomforting to the upper respiratory tract.

Inhalation hazard is increased at higher temperatures.

Exposure to ketone vapors may produce nose, throat and mucous membrane irritation. High concentrations of vapor may produce central nervous system depression characterized by headache, vertigo, loss of coordination, narcosis and cardiorespiratory failure. Some ketones produce neurological disorders (polyneuropathy) characterized by bilateral symmetrical paresthesia and muscle weakness primarily in the legs and arms.

Symptoms of exposure may include restlessness, headache, vomiting, stupor, low blood pressure and rapid and irregular pulse, eye and throat irritation, weakness of the legs, dizziness and lightheadedness.

Inhalation of high concentrations produces dryness of the mouth and throat, dizziness, nausea, incoordinated movements, loss of coordinated speech, drowsiness, and in extreme cases, coma.

Inhalation of acetone vapors over long periods causes irritation of the respiratory tract, coughing, headache. Acetone concentrations of 52200 ppm for 1 hour produced narcosis in rats and fatalities at 126600 ppm.

Eye: The liquid may produce eye discomfort and is capable of causing temporary impairment of vision and/or transient eye inflammation, ulceration.

The vapor is discomforting to the eyes.

The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Skin: The liquid is discomforting to the skin if exposure is prolonged and may cause drying of the skin, which may lead to dermatitis.

Toxic effects may result from skin absorption.

Open cuts, abraded or irritated skin should not be exposed to this material.

The material may accentuate any pre-existing skin condition.

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterized by skin redness (erythema) and swelling (edema) which may progress to vesiculation, scaling and thickening of the epidermis. Histologically there may be intercellular edema of the spongy layer (spongiosis) and intracellular edema of the epidermis.

Ingestion: Considered an unlikely route of entry in commercial/industrial environments.

The liquid is highly discomforting and mildly toxic if swallowed but may be harmful if swallowed in quantity.

Small amounts or low dose rates are regarded as practically non-harmful.

Carcinogenicity: NTP - Not listed; IARC - Not listed; OSHA - Not listed; NIOSH - Not listed; ACGIH - Not listed; EPA - Class D, Not classifiable as to human carcinogenicity; MAK - Not listed.

Chronic Effects: Prolonged or continuous skin contact with the liquid may cause defatting with drying, cracking, irritation and dermatitis following.

Workers exposed to 700 ppm acetone for 3 hours/day for 7-15 years showed inflammation of the respiratory tract, stomach and duodenum, attacks of giddiness and loss of strength. Exposure to acetone may enhance liver toxicity of chlorinated solvents.

Section 4 - First Aid Measures

Inhalation: Remove to fresh air.

Lay patient down. Keep warm and rested.

If available, administer medical oxygen by trained personnel.

If breathing is shallow or has stopped, ensure clear airway and apply resuscitation. Transport to hospital or doctor, without delay.

Eye Contact: Immediately hold the eyes open and flush with fresh running water.

Ensure irrigation under the eyelids by occasionally lifting upper and lower lids. If pain persists or recurs seek medical attention.

Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact: Immediately remove all contaminated clothing, including footwear (after rinsing with water).

Wash affected areas thoroughly with water (and soap if available).

Seek medical attention in event of irritation.

Ingestion: Rinse mouth out with plenty of water.

Contact a Poison Control Center.

Do NOT induce vomiting. Give a glass of water.

After first aid, get appropriate in-plant, paramedic, or community medical support.

Note to Physicians: For acute or short-term repeated exposures to acetone:

1. Symptoms of acetone exposure approximate ethanol intoxication.

2. About 20% is expired by the lungs and the rest is metabolized.

Alveolar air half-life is about 4 hours following two hour inhalation at levels near the Exposure Standard; in overdose, saturable metabolism and limited clearance, prolong the elimination half-life to 25-30 hours.

3. There are no known antidotes and treatment should involve the usual methods of decontamination followed by supportive care.

See
DOT
ERG

Section 5 - Fire-Fighting Measures

Flash Point: -20 °C

Autoignition Temperature: 465 °C

LEL: 2.15% v/v

UEL: 13% v/v

Extinguishing Media: Water spray or fog; alcohol stable foam.

Dry chemical powder.

Bromochlorodifluoromethane (BCF) (where regulations permit).

Carbon dioxide.

General Fire Hazards/Hazardous Combustion Products: Liquid and vapor are highly flammable.

Severe fire hazard when exposed to heat, flame and/or oxidizers.

Vapor forms an explosive mixture with air.

Severe explosion hazard, in the form of vapor, when exposed to flame or spark. Vapor may travel a considerable distance to source of ignition.

Heating may cause expansion/decomposition with violent rupture of containers.

On combustion, may emit toxic fumes of carbon monoxide (CO). Other combustion products include carbon dioxide (CO₂).

Fire Incompatibility: Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PLEASE NOTE: 10% of acetone in water has a flash point below 20 deg. C.

Fire-Fighting Instructions: Contact fire department and tell them location and nature of hazard.

May be violently or explosively reactive. Wear breathing apparatus plus protective gloves. Prevent, by any means available, spillage from entering drains or waterways. Consider evacuation.

Fight fire from a safe distance, with adequate cover.

If safe, switch off electrical equipment until vapor fire hazard removed.

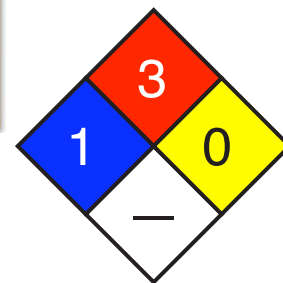
Use water delivered as a fine spray to control the fire and cool adjacent area. Avoid spraying water onto liquid pools.

Do not approach containers suspected to be hot.

Cool fire-exposed containers with water spray from a protective location.

If safe to do so, remove containers from path of fire.

See
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Fire Diamond

Section 6 - Accidental Release Measures

Small Spills: Remove all ignition sources. Clean up all spills immediately.

Avoid breathing vapors and contact with skin and eyes.

Control personal contact by using protective equipment.

Contain and absorb small quantities with vermiculite or other absorbent material. Wipe up. Collect residues in a flammable waste container.

Large Spills: Clear area of personnel and move upwind.

Contact fire department and tell them location and nature of hazard.

Avoid breathing vapors and contact with skin and eyes.

May be violently or explosively reactive. Wear breathing apparatus plus protective gloves. Prevent, by any means available, spillage from entering drains or waterways. Consider evacuation.

Shut off all possible sources of ignition and increase ventilation.

Water spray or fog may be used to disperse vapor.

Stop leak if safe to do so. Contain spill with sand, earth or vermiculite.

Collect residues and place in flammable waste container.

Any electric cleaning equipment must be explosion proof.

Wash spill area with large quantities of water.

If contamination of drains or waterways occurs, advise emergency services.

After clean-up operations, decontaminate and launder all protective clothing and equipment before storing and reusing.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

See
DOT
ERG

Section 7 - Handling and Storage

Handling Precautions: Avoid all personal contact, including inhalation.

Wear protective clothing when risk of exposure occurs.

Use in a well-ventilated area. Prevent concentration in hollows and sumps.

DO NOT enter confined spaces until atmosphere has been checked.

Avoid smoking, bare lights, heat or ignition sources.

When handling, DO NOT eat, drink or smoke.

Vapor may ignite on pumping or pouring due to static electricity.

DO NOT use plastic buckets. Ground and secure metal containers when dispensing or pouring product. Use spark-free tools when handling.

Avoid contact with incompatible materials.

Keep containers securely sealed. Avoid physical damage to containers.

Always wash hands with soap and water after handling.

Work clothes should be laundered separately.

Use good occupational work practices. Observe manufacturer's storing and handling recommendations. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

Recommended Storage Methods: Metal can; metal drum. Packing as recommended by manufacturer.

Check all containers are clearly labeled and free from leaks.

Regulatory Requirements: Follow applicable OSHA regulations.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: CARE: Use of a quantity of this material in confined space or poorly ventilated area, where rapid build-up of concentrated atmosphere may occur, could require increased ventilation and/or protective gear. Use in a well-ventilated area. Local exhaust ventilation may be required for safe working, i. e. , to keep exposures below required standards; otherwise, PPE is required.

None required when handling small quantities. OTHERWISE: If inhalation risk of overexposure exists, wear NIOSH-approved organic-vapor respirator.

Personal Protective Clothing/Equipment:

Eyes: Safety glasses with side shields; or as required, chemical goggles.

Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them.

Hands/Feet: Barrier cream with polyethylene gloves or Butyl rubber gloves or Neoprene rubber gloves.

Safety footwear.

Respiratory Protection:

Exposure Range >1000 to <2500 ppm: Supplied Air, Constant Flow/Pressure Demand, Full Face

Exposure Range 2500 to unlimited ppm: Self-contained Breathing Apparatus, Pressure Demand, Full Face

Note: use ov (black) cartridge for nuisance(<1000)

Other: Overalls. Ensure that there is ready access to eye wash unit and Ensure there is ready access to an emergency shower.

Glove Selection Index:

BUTYL/NEOPRENE Best selection

PE/EVAL/PE Best selection

PVDC/PE/PVDC Best selection

BUTYL Best selection

SARANEX-23 2-PLY Satisfactory; may degrade after 4 hours continuous immersion

TEFLON Satisfactory; may degrade after 4 hours continuous immersion

SARANEX-23 Poor to dangerous choice for other than short-term immersion

CPE Poor to dangerous choice for other than short-term immersion

HYPALON Poor to dangerous choice for other than short-term immersion

NITRILE+PVC Poor to dangerous choice for other than short-term immersion

PVA Poor to dangerous choice for other than short-term immersion

VITON/NEOPRENE Poor to dangerous choice for other than short-term immersion

NEOPRENE Poor to dangerous choice for other than short-term immersion

PVC Poor to dangerous choice for other than short-term immersion

NATURAL+NEOPRENE Poor to dangerous choice for other than short-term immersion

NATURAL RUBBER Poor to dangerous choice for other than short-term immersion

NITRILE Poor to dangerous choice for other than short-term immersion

Section 9 - Physical and Chemical Properties

Appearance/General Info: Clear, colorless, highly volatile, highly flammable liquid with characteristic sweet odor.

Mixes in alcohol, ether, most hydrocarbons and oils.

Physical State: Liquid

pH: Not applicable

Odor Threshold: 47.5 to 1613.9 mg/m³

pH (1% Solution): Not applicable.

Vapor Pressure (kPa): 24 at 20 °C

Boiling Point: 56.2 °C (133 °F) at 760 mm Hg

Vapor Density (Air=1): 2.0

Freezing/Melting Point: -95.35 °C (-139.63 °F)

Formula Weight: 58.08

Volatile Component (% Vol): 100

Specific Gravity (H₂O=1, at 4 °C): 0.79 at 20 °C

Water Solubility: Miscible

Evaporation Rate: 11 (BuAc=1) VFast

Section 10 - Stability and Reactivity

Stability/Polymerization/Conditions to Avoid: Product is considered stable. Hazardous polymerization will not occur.

Storage Incompatibilities: Avoid storage with oxidizers, strong acids and strong alkalis.
Reacts violently with bromoform and chloroform in the presence of alkalis or in contact with alkaline surfaces.

Section 11 - Toxicological Information

Toxicity

Oral (man) TD_{Lo}: 2857 mg/kg
Oral (rat) LD₅₀: 5800 mg/kg
Inhalation (human) TC_{Lo}: 500 ppm
Inhalation (man) TC_{Lo}: 12000 ppm/4 hr
Inhalation (man) TC_{Lo}: 10 mg/m³/6 hr
Inhalation (rat) LC₅₀: 50100 mg/m³/8 hr
Dermal (rabbit) LD₅₀: 20000 mg/kg

Irritation

Eye (human): 500 ppm - irritant
Eye (rabbit): 3.95 mg - SEVERE
Eye (rabbit): 20 mg/24 hr -moderate
Skin (rabbit): 395 mg (open) - mild
Skin (rabbit): 500 mg/24 hr - mild

See RTECS AL 3150000, for additional data.

Section 12 - Ecological Information

Environmental Fate: If released on soil, it will both volatilize and leach into the ground and probably biodegrade. If released into water, it will probably biodegrade. It will also be lost due to volatilization (estimated half-life 20 hr from a model river). Bioconcentration in aquatic organisms and adsorption to sediment should not be significant. In the atmosphere, it will be lost by photolysis and reaction with photochemically produced hydroxyl radicals. Half-life estimates from these combined processes average 22 days and are shorter in summer and longer in winter. It will also be washed out by rain.

Ecotoxicity: LD₁₀₀ Asellus aquaticus 3 ml/l (within 3 days of exposure) /Conditions of bioassay not specified; LC₅₀ Mexican axolotl 20.0 mg/l/48 hr (3-4 weeks after hatching) /Conditions of bioassay not specified; TL_m Mosquito fish 13,000 mg/l/24, 48, 96 hr /Conditions of bioassay not specified; LD₁₀₀ Gammarus fossarum 10 ml/l (within 48 hr) /Conditions of bioassay not specified; LC₅₀ Poecilia reticulata (guppy) 7,032 ppm/14 days /Conditions of bioassay not specified; LC₅₀ Ring-necked pheasant oral greater than 40,000 ppm, in diet, age 10 days, (no mortality to 40,000 ppm); LC₅₀ Salmo gairdneri (Rainbow trout) 5,540 mg/l/96 hr at 12 °C (95% confidence limit 4,740-6,330 mg/l), wt 1.0 g /static bioassay; LC₅₀ Clawed toad 24.0 mg/l/48 hr (3-4 weeks after hatching) /Conditions of bioassay not specified; TL_m Daphnia magna 10 mg/l/24, 48 hr /Conditions of bioassay not specified

Henry's Law Constant: 3.97 x 10⁻⁵

BCF: negligible

Biochemical Oxygen Demand (BOD): theoretical 122%, 5 days

Octanol/Water Partition Coefficient: log K_{ow} = -0.24

Section 13 - Disposal Considerations

Disposal: Consult manufacturer for recycling options and recycle where possible.
Follow applicable federal, state, and local regulations.
Incinerate residue at an approved site.
Recycle containers where possible, or dispose of in an authorized landfill.

Section 14 - Transport Information

DOT Hazardous Materials Table Data (49 CFR 172.101):

Shipping Name and Description: Acetone

ID: UN1090

Hazard Class: 3 - Flammable and combustible liquid

Packing Group: II - Medium Danger

Symbols:

Label Codes: 3 - Flammable Liquid

Special Provisions: IB2, T4, TP1

Packaging: Exceptions: 150 Non-bulk: 202 Bulk: 242

Quantity Limitations: Passenger aircraft/rail: 5 L Cargo aircraft only: 60 L

Vessel Stowage: Location: B Other:



Section 15 - Regulatory Information**EPA Regulations:**

RCRA 40 CFR: Listed U002 Ignitable Waste

CERCLA 40 CFR 302.4: Listed per RCRA Section 3001 5000 lb (2268 kg)

SARA 40 CFR 372.65: Not listed

SARA EHS 40 CFR 355: Not listed

TSCA: Listed

Section 16 - Other Information

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