

# Material Safety Data Sheet

## Acetic acid MSDS

### Section 1: Chemical Product and Company Identification

**Product Name:** Acetic acid  
**Catalog Codes:** 11001, 12002, 14004  
**CAS#:** 64-19-7  
**TSCA:** TSCA 8(b) inventory: Acetic acid  
**CI#:** Not applicable.  
**Synonym:** Acetic acid; glacial acetic acid  
**Chemical Name:** Acetic Acid, Glacial  
**Chemical Formula:** C2-H4-O2  
**Contact Information:** Runa Chemicals Pvt. Ltd.  
W-11 & W-23, M.I.D.C., Phase 2  
Dombivli – 421204. Maharashtra. (India)  
International Sales: +91 (0) 251 2871 106 / 2870473  
Fax: +91 (0) 251 2871 757  
Order Online: [www.runachemicals.com](http://www.runachemicals.com)  
**Emergency Telephone:** +91 (0) 251 2871 106

### Section 2: Composition and Information on Ingredients

**Composition:**

Name	CAS #	% by Weight
Acetic acid	64-19-7	100

**Toxicological Data on Ingredients:** Acetic acid: ORAL (LD50): Acute: 3310 mg/kg [Rat]. 4960 mg/kg [Mouse]. 3530 mg/kg [Rat]. DERMAL (LD50): Acute: 1060 mg/kg [Rabbit]. VAPOR (LC50): Acute: 5620 ppm 1 hours [Mouse].

### Section 3: Hazards Identification

**Potential Acute Health Effects:**

Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive). Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

**Potential Chronic Health Effects:**

Hazardous in case of skin contact (irritant), of ingestion, of inhalation.  
CARCINOGENIC EFFECTS: Not available.  
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.  
TERATOGENIC EFFECTS: Not available.  
DEVELOPMENTAL TOXICITY: Not available.  
The substance may be toxic to kidneys, mucous membranes, skin, teeth.

Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.

#### Section 4: First Aid Measures

**Eye Contact:**

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

**Skin Contact:**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**Serious Skin Contact:**

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation:**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Serious Inhalation:**

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

**Ingestion:**

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

**Serious Ingestion:** Not available.

#### Section 5: Fire and Explosion Data

**Flammability of the Product:** Flammable.

**Auto-Ignition Temperature:** 463°C (865.4°F)

**Flash Points:** CLOSED CUP: 39°C (102.2°F). OPEN CUP: 43°C (109.4°F).

**Flammable Limits:** LOWER: 4% UPPER: 19.9%

**Products of Combustion:** These products are carbon oxides (CO, CO<sub>2</sub>).

**Fire Hazards in Presence of Various Substances:**

Flammable in presence of open flames and sparks, of heat.

Slightly flammable to flammable in presence of oxidizing materials, of metals.

**Explosion Hazards in Presence of Various Substances:**

Risks of explosion of the product in presence of mechanical impact: Not available.

Risks of explosion of the product in presence of static discharge: Not available.

Slightly explosive in presence of oxidizing materials.

**Fire Fighting Media and Instructions:**

Flammable liquid, soluble or dispersed in water.

SMALL FIRE: Use DRY chemical powder.

LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent

pressure build-up, autoignition or explosion.

**Special Remarks on Fire Hazards:**

Reacts with metals to produce flammable hydrogen gas.  
It will ignite on contact with potassium-tert-butoxide.  
A mixture of ammonium nitrate and acetic acid ignites when warmed, especially if warmed.

**Special Remarks on Explosion Hazards:**  
Acetic acid vapors may form explosive mixtures with air.  
Reactions between acetic acid and the following materials are potentially explosive: 5-azidotetrazole, bromine pentafluoride, chromium trioxide, hydrogen peroxide, potassium permanganate, sodium peroxide, and phosphorus trichloride.  
Dilute acetic acid and dilute hydrogen can undergo an exothermic reaction if heated, forming peracetic acid which is explosive at 110 degrees C.  
Reaction between chlorine trifluoride and acetic acid is very violent, sometimes explosive.

### Section 6: Accidental Release Measures

**Small Spill:**

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.

**Large Spill:**

Flammable liquid. Corrosive liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. If the product is in its solid form: Use a shovel to put the material into a convenient waste disposal container. If the product is in its liquid form: Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Absorb with an inert material and put the spilled material in an appropriate waste disposal. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

### Section 7: Handling and Storage

**Precautions:**

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, metals, acids, alkalis.

**Storage:**

Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

### Section 8: Exposure Controls/Personal Protection

**Engineering Controls:**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**Personal Protection:**

Splash goggles. Synthetic apron. Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Gloves (impervious).

**Personal Protection in Case of a Large Spill:**

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist

BEFORE handling this product.

**Exposure Limits:**

TWA: 10 STEL: 15 (ppm) [Australia]

TWA: 25 STEL: 27 (mg/m<sup>3</sup>) [Australia]

TWA: 10 STEL: 15 (ppm) from NIOSH

TWA: 25 STEL: 37 (mg/m<sup>3</sup>) from NIOSH

TWA: 10 STEL: 15 (ppm) [Canada]

TWA: 26 STEL: 39 (mg/m<sup>3</sup>) [Canada]

TWA: 25 STEL: 37 (mg/m<sup>3</sup>)

TWA: 10 STEL: 15 (ppm) from ACGIH (TLV) [United States] [1999]

TWA: 10 (ppm) from OSHA (PEL) [United States]

TWA: 25 (mg/m<sup>3</sup>) from OSHA (PEL) [United States] Consult local authorities for acceptable exposure limits.

## Section 9: Physical and Chemical Properties

**Physical state and appearance:** Liquid.

**Odor:** Alcohol like. Pungent when crude.

**Taste:** Not available.

**Molecular Weight:** 32.04 g/mole

**Color:** Colorless.

**pH (1% soln/water):** Not available.

**Boiling Point:** 64.5°C (148.1°F)

**Melting Point:** -97.8°C (-144°F)

**Critical Temperature:** 240°C (464°F)

**Specific Gravity:** 0.7915 (Water = 1)

**Vapor Pressure:** 12.3 kPa (@ 20°C)

**Vapor Density:** 1.11 (Air = 1)

**Volatility:** Not available.

**Odor Threshold:** 100 ppm

**Water/Oil Dist. Coeff.:** The product is more soluble in water; log(oil/water) = -0.8

**Ionicity (in Water):** Non-ionic.

**Dispersion Properties:** See solubility in water.

**Solubility:** Easily soluble in cold water, hot water.

## Section 10: Stability and Reactivity Data

**Physical state and appearance:** Liquid.

**Odor:** Pungent, vinegar-like, sour (Strong.)

**Taste:** Vinegar, sour (Strong.)

**Molecular Weight:** 60.05 g/mole

**Color:** Colorless. Clear (Light.)

**pH (1% soln/water):** 2 [Acidic.]

**Boiling Point:** 118.1°C (244.6°F)

**Melting Point:** 16.6°C (61.9°F)

**Critical Temperature:** 321.67°C (611°F)

**Specific Gravity:** 1.049 (Water = 1)

**Vapor Pressure:** 1.5 kPa (@ 20°C)

**Vapor Density:** 2.07 (Air = 1)

**Volatility:** Not available.

**Odor Threshold:** 0.48 ppm

**Water/Oil Dist. Coeff.:** The product is more soluble in water;  $\log(\text{oil/water}) = -0.2$

**Ionicity (in Water):** Not available.

**Dispersion Properties:** See solubility in water, diethyl ether, acetone.

**Solubility:**

Easily soluble in cold water, hot water.

Soluble in diethyl ether, acetone.

Miscible with Glycerol, alcohol, Benzene, Carbon Tetrachloride.

Practically insoluble in Carbon Disulfide.

### Section 11: Toxicological Information

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Heat, ignition sources, incompatible materials

**Incompatibility with various substances:** Reactive with oxidizing agents, reducing agents, metals, acids, alkalis.

**Corrosivity:**

Highly corrosive in presence of stainless steel(304).

Slightly corrosive in presence of aluminum, of copper.

Non-corrosive in presence of stainless steel(316).

**Special Remarks on Reactivity:**

Reacts violently with strong oxidizing agents, acetaldehyde, and acetic anhydride. Material can react with metals,

strong bases, amines, carbonates, hydroxides, phosphates, many oxides, cyanides, sulfides, chromic acid, nitric

acid, hydrogen peroxide, carbonates, ammonium nitrate, ammonium thiosulfate, chlorine trifluoride, chlorosulfonic

acid, perchloric acid, permanganates, xylene, oleum, potassium hydroxide, sodium hydroxide, phosphorus

isocyanate, ethylenediamine, ethylene imine.

**Special Remarks on Corrosivity:** Moderate corrosive effect on bronze. No corrosion data on brass

**Polymerization:** Will not occur.

### Section 12: Ecological Information

**Ecotoxicity:** Ecotoxicity in water (LC50): 29400 mg/l 96 hours [Fathead Minnow].

**BOD5 and COD:** Not available.

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are less toxic than the product itself.

**Special Remarks on the Products of Biodegradation:**

Methanol in water is rapidly biodegraded and volatilized. Aquatic hydrolysis, oxidation, photolysis, adsorption to sediment, and bioconcentration are not significant fate processes. The half-life of methanol in surface water ranges from 24 hrs. to 168 hrs.

Based on its vapor pressure, methanol exists almost entirely in the vapor phase in the ambient atmosphere. It is degraded by reaction with photochemically produced hydroxyl radicals and has an

estimated half-life of 17.8 days. Methanol is physically removed from air by rain due to its solubility. Methanol can react with NO<sub>2</sub> in polluted to form methyl nitrate. The half-life of methanol in air ranges from 71 hrs. (3 days) to 713 hrs. (29.7 days) based on photooxidation half-life in air.

### Section 13: Disposal Considerations

**Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

### Section 14: Transport Information

**DOT Classification:**

CLASS 3: Flammable liquid.

Class 8: Corrosive material

**Identification:** : Acetic Acid, Glacial UNNA: 2789 PG: II

**Special Provisions for Transport:** Not available.

### Section 15: Other Regulatory Information

**Federal and State Regulations:**

New York release reporting list: Acetic acid

Rhode Island RTK hazardous substances: Acetic acid

Pennsylvania RTK: Acetic acid

Florida: Acetic acid

Minnesota: Acetic acid

Massachusetts RTK: Acetic acid

New Jersey: Acetic acid

California Director's List of Hazardous Substances (8 CCR 339): Acetic acid

TSCA 8(b) inventory: Acetic acid

CERCLA: Hazardous substances.: Acetic acid: 5000 lbs. (2268 kg)

**Other Regulations:**

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

**Other Classifications:**

**WHMIS (Canada):**

CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).

CLASS E: Corrosive liquid.

**DSCL (EEC):**

R10- Flammable.

R35- Causes severe burns.

S23- Do not breathe gas/fumes/vapour/spray

[\*\*\*]

S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**HMIS (U.S.A.):**

**Health Hazard: 3**

**Fire Hazard: 2**

**Reactivity: 0**

**Personal Protection: H**

**National Fire Protection Association (U.S.A.):**

**Health: 3**

**Flammability: 2**

**Reactivity: 0**

**Specific hazard:**

**Protective Equipment:**

Gloves (impervious).

Synthetic apron.

Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator

### **Section 16: Other Information**

**References:**Not available.

**Other Special Considerations:** Not available.

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