

N.Z. CROP CARE LTD.

Science our Future

Material Safety Data Sheet - MSDS

Section 1: Chemical Product and Company Identification

Product Name: Acetic Acid

also known as Ethanoic acid - Glacial acetic acid

Ethylic acid - Methane carboxylic acid - Vinegar acid (Vinegar when very dilute)

Chemical Formula: CH₃COOH

Contact Information:

NZ Crop Care Ltd

164 Manuaku Rd

Pukekohe 2340

New Zealand

NZ Sales: **09 238-0449**

International Sales: **0064-9-2380449**

ERMA NZ Approval Code: HSR000975

HSNO Hazard Classifications:

3.1C – 6.1D – 6.9B – 8.1A – 8.2B – 8.3A – 9.1D – 9.3C

NATIONAL POISONS CENTRE:

0800 764-766

CHEMCALL: 0800 243-622

Section 2: Composition and Information on Ingredients

COMPOSITION:

Name	C.A.S No	% 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, . Hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive). Slightly hazardous in case of inhalation (lung sensitizer). Non-corrosive for lungs. 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.

CARCINOGENIC EFFECTS: Not available.

MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Acetic acid, 90%]. Mutagenic for bacteria and/or yeast. [Acetic acid, 90%].

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: The lowest known value is CLOSED CUP: 39 °C (102.2 °F). OPEN CUP: 43 °C (109.4 °F). (Acetic acid)

Flammable Limits: UPPER: 19.9%

Products of Combustion: These products are carbon oxides (CO, CO₂).

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 produces 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 locked up. Keep container dry. 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). Do not store above 24 °C (75.2 °F).

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/m3) [Australia]
TWA: 10 STEL: 15 (ppm) from NIOSH	TWA: 25 STEL: 37 (mg/m3) from NIOSH
TWA: 10 STEL: 15 (ppm) [Canada]	TWA: 26 STEL: 39 (mg/m3) [Canada]
TWA: 10 (ppm) from OSHA (PEL) [United States]	TWA: 25 STEL: 37 (mg/m3)
TWA: 10 STEL: 15 (ppm) from ACGIH (TLV) [United States] [1999]	
TWA: 25 (mg/m3) from OSHA (PEL) [United States]	3 Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

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

Taste: Vinegar, sour (Strong.)

Molecular Weight: Not applicable.

Color: Colorless. Clear (Light.)

pH (1% soln/water): Acidic.

Boiling Point:

The lowest known value is 100°C (212°F) (Water). Weighted average: 116.29°C (241.3°F)

Melting Point: May start to solidify at 16.6°C (61.9°F) based on data for: Acetic acid.

Critical Temperature: The lowest known value is 321.67°C (611 °F) (Acetic acid).

Specific Gravity: Weighted average: 1.05 (Water = 1)

Vapor Pressure:

The highest known value is 2.3 kPa (@ 20°C) (Water). Weighted average: 1.58 kPa (@ 20°C)

Vapor Density:

The highest known value is 2.07 (Air = 1) (Acetic acid). Weighted average: 1.92 (Air = 1)

Volatility: Not available.

Odor Threshold: The highest known value is 0.48 ppm (Acetic acid)

Water/Oil Dist. Coeff.: The product is more soluble in water.

Ionicity (in Water): Not available.

Dispersion Properties:

Partially dispersed in methanol, diethyl ether, n-octanol.

See solubility in water, methanol, diethyl ether, n-octanol, acetone.

Solubility: Easily soluble in cold water, hot water.

Partially soluble in methanol, diethyl ether, n-octanol, acetone. cold water, hot water.

Soluble in acetone. Partially soluble in methanol.

Insoluble in diethyl ether.

Section 10: Stability and Reactivity Data

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 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals: WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE.

Acute oral toxicity (LD50): 3310 mg/kg [Rat].

Acute dermal toxicity (LD50): 1060 mg/kg [Rabbit].

Acute toxicity of the vapor (LC50): 5620 1 hours [Mouse].

Chronic Effects on Humans: MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast.

Other Toxic Effects on Humans:

Extremely hazardous in case of inhalation (lung corrosive).

Very hazardous in case of skin contact (irritant), of ingestion, .

Hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: May affect genetic material and may cause reproductive effects based on animal data. No human data found.

Special Remarks on other Toxic Effects on Humans:

Skin: Extremely irritating and corrosive. Causes skin irritation (reddening and itching, inflammation). May cause blistering, tissue damage and burns.

Eyes: Extremely irritating and corrosive. Causes eye irritation, redness, and pain. May cause burns, blurred vision, conjunctivitis, conjunctival and corneal destruction and permanent injury.

Inhalation: Causes severe respiratory tract irritation. Affects the sense organs (nose, ear, eye, taste), and blood. May cause chemical pneumonitis, bronchitis, and pulmonary edema. Severe exposure may result in lung tissue damage and corrosion of the mucous membranes.

Ingestion: Moderately toxic. Corrosive. Causes gastrointestinal tract irritation (burning and pain of the mouth, throat, and abdomen, coughing, ulceration, bleeding, nausea, abdominal spasms, vomiting, hematemesis, diarrhea. May Also affect the blood, metabolism, liver, and the urinary system - kidneys, bladder, ureter-(Hematuria, Albuminuria, Nephrosis). May also cause asphyxia
Chronic Potential Health Effects: Chronic exposure via ingestion may produce erosion of the teeth and jaw necrosis.

Section 12: Ecological Information

Ecotoxicity: Ecotoxicity in water (LC50): 423 mg/l 24 hours [Fish (Goldfish)]. 88 ppm 96 hours [Fish (fathead minnow)]. 75 ppm 96 hours [Fish (bluegill sunfish)]. >100 ppm 96 hours [Daphnia].

BOD5 and COD: BOD-5: 0.34-0.88 g oxygen/g

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: Not available.

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 8: Corrosive material

Class 3: Flammable liquid.

Identification: Acetic Acid, Glacial : UN2789 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Other Regulations:

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

Other Classifications:

Protective Equipment: Gloves (impervious). Synthetic apron. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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