ACETIC ACID (FOOD GRADE)

SECTION 1: PRODUCT IDENTIFICATION

Product Name: ACETIC ACID (FOOD GRADE)
Product Code: 5000
CAS#: 64-19-7
Synonym: NA
Chemical Name: Acetic Acid
Chemical Formula: CH_3·COOH
Formula Weight: 60.05

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Composition:
Name: ACETIC ACID (FOOD GRADE)
Toxicological Data on Ingredients:
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200):
H314: Causes severe skin burns and eye damage.
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H314: Causes severe skin burns and eye damage.
H224: Extremely flammable liquid and vapour
H319: Causes serious eye irritation.
H315: Causes skin irritation.

SECTION 3: HAZARDS IDENTIFICATION

Classification of the substance or mixture
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: The substance may be toxic to kidneys, mucous membranes, skin, teeth. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated p. 2 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. Get medical attention. WARM water MUST be used. Get medical attention if irritation occurs
Skin Contact: In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention..
Serious Skin Contact: Not available

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Serious Inhalation: Not Available
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 FIGHTING MEASURES

Flammability of the Product: Flammable
Auto-Ignition Temperature: 485°C
Flash Points: Closed Cup:104 °F
Flammable Limits: N/A
Minimum ignition energy: More than 80 µJ .e.g. Propane
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 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 conditions: 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).
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

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. Dust 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: 25 STEL: 37 (mg/m3); TWA: 10 STEL: 15 (ppm) from ACGIH (TLV) [United States] [1999]; TWA: 10 (ppm) from OSHA (PEL) [United States]; TWA: 25 (mg/m3) from OSHA (PEL) [United States]
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.)
Color	:	Colourles
Molecular Weight	:	60.05
PH	:	Acidic
Boiling Point	:	Not available
Melting Point	:	Not available
Critical Temperature	:	321.67°C (611°F
Specific Gravity	:	Not available
Vapor Pressure	:	Not applicable
Vapor Density	:	Not available
Volatility	:	Not available
Odor Threshold	:	Not available
Water/Oil Dist. Coeff.	:	Not available
Ionicity (in Water)	:	Not available
Dispersion Properties	:	Not available
Solubility	:	Miscible in water

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: The product is stable.
Instability Temperature: Not available
Conditions of Instability: Incompatible materials, high temperatures
Incompatibility with various substances: Highly reactive with metals. Reactive with acids. Slightly reactive to reactive with oxidizing agents
Special Remarks on Corrosivity: Dissolves copper and zinc. Corrosive to aluminum and its alloys. Corrosive to galvanized surfaces. Severe corrosive effect on brass and bronze
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
Polymerization: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION.

Routes of Entry: Absorbed through skin. Dermal contact, Eye contact, Inhalation, Ingestion
Toxicity to Animals:
LD_{50}: Acute oral toxicity - 350 mg/kg [Rat]
LC_{50}: Inhalation Rat - 2000 ppm 4 hours
Chronic Effects on Humans:
Mutagenic Effects: Mutagenic for bacteria and/or yeast. [ACETIC ACID] May cause damage to the following organs: mucous membranes, skin, eyes
Other Toxic Effects on Humans: Very hazardous in case of skin contact (corrosive, irritant, permeator), of ingestion, . Hazardous in case of eye contact (corrosive), of inhalation (lung corrosive)
Special Remarks on Toxicity to Animals: Highly toxic to aquatic organisms
Special Remarks on Chronic Effects on Humans: May affect genetic material based on tests with microorganisms and animals May cause cancer (tumorigenic) based on animal data. No human data found at this time. (Ammonia, anhydrous)
Special Remarks on other Toxic Effects on Humans: Acute Potential Health Effects: Skin: Causes severe irritation. Causes skin burns. May cause deep, penetrating ulcers of the skin. Contact with skin may cause staining, inflammation, and thickening of the skin. Eye: Contact with liquid or vapor causes severe burns and possible irreversible eye damage including corneal injury and cataracts. Inhalation: Causes severe irritation of the upper respiratory tract with coughing, burns, breathing difficulty. May cause acute pulmonary edema, pneumoconiosis, fibrosis, and even coma. It is a respiratory stimulant when inhaled at lower concentrations. It may also affect behavior/ central nervous system (convulsions, seizures, ataxia, tremor), cardiovascular system (increase in blood pressure and pulse rate). Ingestion: Harmful if swallowed. Affects the Gastrointestinal tract (burns, swelling of the lips, mouth, and larynx, throat constriction, nausea, vomiting, convulsions, shock, and may cause severe and permanent damage), liver, and urinary system (kidneys) May affect behavior (convulsions, seizures, ataxia, excitement). Chronic Potential Health Effects: Ingestion: May cause effects similar to those of acute ingestion. Inhalation: Repeated exposure to low concentrations may cause bronchitis with cough, phlegm, and/or shortness of breath. May also cause liver and kidney damage, and affect the brain, and blood. Eye: May cause corneal damage and the development of cataracts and glaucoma. Skin: Repeated skin contact to low concentrations may cause dryness, itching, and redness (dermatitis)

SECTION 12: ECOLOGICAL INFORMATION

Eco toxicity: Not Available
LC50: 0.1 ppm 24 hours [Rainbow trout]
8.2mg/l 96 hours [Fathead minnow]
0.1 ppm 48 hours [Bluegill]
BOD 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: 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

UN number:
ADR/RID: 2789 **IMDG:** 2789 **IATA:** 2789
UN proper shipping name
ADR/RID: Acetic Acid
IMDG: Acetic Acid
IATA: Acetic Acid
Transport hazard class (es):
ADR/RID: 8 (3) **IMDG:** 8 (3) **IATA:** 8 (3)
Packaging group:
ADR/RID: II **IMDG:** II **IATA:** II
Environmental hazards:
ADR/RID: no **IMDG Marine pollutant:** No **IATA:** No

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006
Chemical Safety Assessment: Not available
References: Full text of H AND R-Statements. Not available
Other Special Considerations: Not available
Other Classifications:
WHMIS (Canada): CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS E: Corrosive liquid.
DSCL (EEC): R10/ R35
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. Lab coat Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses

SECTION 16: OTHER INFORMATION

References:
H314: Causes severe skin burns and eye damage.
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H314: Causes severe skin burns and eye damage.
H224: Extremely flammable liquid and vapour
H319: Causes serious eye irritation.
H315: Causes skin irritation.
STOT - single exposure respiratory system
Other Special Considerations: Not available

The information contained in this data sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. The information is offered solely for user's obligation to investigate and determine the suitability of the information for their particular purpose.