

Acetic Acid, Glacial

Date of Preparation: September 2003

Revision: 1

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Acetic Acid, Glacial
Chemical Formula: CH₃COOH, C₂H₄O₂
Other Designations: Glacial acetic acid, ethanoic acid, methanecarboxylic acid, vinegar acid, ethylic acid
General Use: Solvent in semiconductor industry, formation of rayon, creating of cellulose acetate, polymerization to form poly(vinyl acetate)
Manufacturer: Kanto Corporation, 13424 N. Woodrush Way, Portland, OR 97203
Non-Emergency Contact: Customer Service, Phone (503) 283-0405, FAX (503) 240-0409

For All Transportation Emergencies Call CHEMTREC at 1-800-424-9300

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% wt
Acetic Acid	64-19-7	>99

Occupational Exposure Limits

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
	TWA	STEL	TWA	STEL	TWA	STEL	IDLH
Acetic Acid	10 ppm 25 mg/m ³	None established	10 ppm 25 mg/m ³	15 ppm 37 mg/m ³	10 ppm 25 mg/m ³	15 ppm 37 mg/m ³	50 ppm

Section 3 - Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

Flammable and corrosive colorless liquid and vapor. Causes severe eye, skin, and respiratory tract burns. May be harmful if absorbed through the skin. May freeze into expanding solid below 62°F.

HMIS
H 3
F 2
R 0
PPE †
†Sec. 8

Potential Health Effects

Primary Entry Routes: Inhalation, skin or eye contact.
Target Organs: Skin, eyes, respiratory system, teeth, mucous membranes.
Acute Effects
Eye: Severe irritation, conjunctivitis, lacrimation, burns and possible irreversible eye damage.
Skin: Severe irritation and burns, black skin, blistering and corrosion, possible sensitization.
Ingestion: If swallowed, solution causes perforation of the esophagus, digestive tract ulcerations, uremia, bloody vomitus, diarrhea, shock and possibly death from coma. Rapidly absorbed into body from the digestive tract.
Inhalation: Irritation, pharyngeal edema, chronic bronchitis; high concentrations or extended exposure can cause bronchial constriction and breathing difficulties; effects may be delayed after exposure.
Carcinogenicity: IARC, NTP, and OSHA do not list acetic acid as a carcinogen.
Medical Conditions Aggravated by Long-Term Exposure: Skin or eye injuries, impaired respiratory systems
Chronic Effects: Chronic bronchitis, dental erosion, hyperkeratosis, edema around eyelids, lymph node enlargement, digestive disorders

Section 4 - First Aid Measures

Inhalation: Remove exposed person to an uncontaminated atmosphere. For severe exposure, use oxygen if a qualified operator is available and if breathing is difficult. If not breathing, give artificial respiration. Seek medical attention immediately.
Eye Contact: Gently lift eyelids and flush immediately and continuously with copious amounts of water for at least 15 minutes. Do not allow the victim to rub or keep eyes tightly shut. Consult an ophthalmologist immediately.
Skin Contact: Rinse with flooding amounts of water, while removing contaminated clothing, for at least 15 minutes. Wash with soap and water. Seek medical attention immediately. Wash clothing before reuse.
Ingestion: Never give anything by mouth to an unconscious or convulsing person. Contact a poison control center. Unless the poison control center advises otherwise, have the *conscious and alert* person drink 1 to 2 glasses of water. Do not induce vomiting.

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

Section 5 - Fire-Fighting Measures

Flash Point: 103 °F (40 °C)
Flash Point Method: CC
Burning Rate: No data
Autoignition Temperature: 799 °F (426 °C)
LEL: 4.0% v/v
UEL: 19.9% v/v



Flammability Classification: Class II Combustible Liquid

Extinguishing Media: Dry chemical, carbon dioxide, foam, or water spray

Unusual Fire or Explosion Hazards: Extreme heat or contact with many metals liberates hydrogen gas. Concentrated acetic acid can pose an explosion hazard. Vapors are heavier than air and may travel away from release, encounter an ignition source, and flash back.

Hazardous Combustion Products: Carbon monoxide, carbon dioxide, hydrogen gas, and toxic vapors.

Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full-face piece operated in pressure-demand or positive-pressure mode.

Section 6 - Accidental Release Measures

Small Spills: Notify appropriate personnel, isolate area and deny entry. Extinguish all ignition sources. Release can cause fire or explosions. Do not flood with water as chemical may float on the surface. Properly protected personnel should pick up small spills with an absorbent, noncombustible material such as dry soda ash or calcium carbonate. Place clean-up material in appropriate disposal containers and dispose of according to local, state and federal requirements.

Large Spills: Notify appropriate personnel and implement facility emergency response plan. Evacuate nonessential personnel, isolate area, and extinguish all ignition sources. Use only non-sparking equipment. Release can cause fire or explosions. Cleanup personnel should wear fully protective equipment for vapor inhalation, and skin and eye contact. Check area for vapor concentration before reentering area. Do not release into sewers or waterways. Place clean-up material in appropriate disposal containers and dispose of according to local, state and federal requirements.

Regulatory Requirements: Any release to the environment of this product may be subject to federal and state reporting requirements. Check with appropriate agencies.

Section 7 - Handling and Storage

Handling Precautions: Use only in a well ventilated environment. Avoid contact with heat, sparks, flame. Empty containers may still contain liquid or vapors and may be hazardous. Do not ingest or inhale. Do not pressurize, weld, grind, or drill on container.

Storage Requirements: Keep away from heat, sparks, and flame. Keep warm. Do not allow material to freeze due to possible splitting of the storage container. Keep away from oxidizing materials. Store with other corrosives away from alkaline and other incompatible substances.

Regulatory Requirements: Follow all applicable local, state, and federal requirements.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA.

Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9 - Physical and Chemical Properties

Physical State: Liquid (solid below 62°F)

Appearance and Odor: Clear to turbid, colorless with sour, vinegar-like odor

Vapor Pressure: 11 mm Hg at 20°C

Vapor Density (Air=1): 2.10

Formula Weight: 60.5

Density: 1.05 kg/L

Specific Gravity (H₂O=1, at 4 °C): 1.05

pH: 2.4 (1M solution)

Water Solubility: Complete, releases heat and vapor

Other Solubility: Soluble with alcohol, ether glycol, and acetone

Boiling Point: 244°F

Freezing: 62 °F

Viscosity: 1.22 cP

Refractive Index: 13.715

Surface Tension: 28.8 mN/m at 10°C

% Volatile: 100

Evaporation Rate (n-butyl acetate=1): 0.97

Section 10 - Stability and Reactivity

Stability: Acetic Acid is stable at room temperature in closed containers under normal storage and handling conditions.

Polymerization: Hazardous polymerization will not occur.

Chemical Incompatibilities: Strong oxidizers (especially chromic acid, sodium peroxide and nitric acid), strong caustics.

Corrosive to metals, attacks forms of plastics, rubber and coatings; avoid contact with acetaldehyde, ammonium nitrate, nitric acid, bromine and chlorine trifluorides, peroxides, acetic anhydride, alcohols, amines, permanganates, hydroxides, carbonates, potassium-tert-butoxide, and calcium salts.

Conditions to Avoid: Contact with heat or water and ignition sources, cold temperatures.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, hydrogen gas, irritating and toxic vapors

Section 11- Toxicological Information*

Eye Effects:

Rabbit, eye, 5mg/30 sec rinse: mild irritation

Skin Effects:

Human, skin, 50mg/24hr: mild irritation

Rabbit, skin, 50mg/24hr: mild irritation

Mutagenicity: Human, 5mmol/L, lymphocyte: sister chromatid exchange

Teratogenicity: Rat, 700mg/kg: behavioral effects

Acute Inhalation Effects:

Human, inhalation, TC_{LO}: 816ppm/3min

Rat, inhalation, TC_{LO}: 16000ppm/4hr

Mouse, inhalation, LC₅₀: 5620ppm/1hr

Acute Oral Effects:

Rat, oral, LD₅₀: 3310 mg/kg

Chronic Effects: Chronic bronchitis, dental erosion, hyperkeratosis, edema around eyelids, lymph node enlargement, digestive disorders

Carcinogenicity: None listed

* See NIOSH, *RTECS* (AF1225000), for additional toxicity data.

Section 12 - Ecological Information

Ecotoxicity: Fathead Minnow: LC50 88mg/L/96hr. Bluegill: LC50 75mg/L/96hr.

Environmental Fate: Readily biodegrades in soil and water; shows no potential for bioaccumulation.

Environmental Degradation: Estimated half-life of 27 days.

Section 13 - Disposal Considerations

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

Disposal Regulatory Requirements: Contaminated product, soil, or water may be hazardous waste (40 CFR 261 and 29CFR 1910).

Container Cleaning and Disposal: Empty container in accordance with applicable regulations. Vapors may still be in the container after emptying presenting a possible fire or explosion hazard.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Acetic acid,
glacial

Shipping Symbols:

Hazard Class: 8

ID No.: UN 2789

Packing Group: II

Label: 8, 3

Special Provisions (172.102):

A3, A6, A7, A10, B2, IB2, T7

Packaging Authorizations

a) **Exceptions:** 173.154

b) **Non-bulk Packaging:** 173.202

c) **Bulk Packaging:** 173.243

Quantity Limitations

a) **Passenger, Aircraft, or Railcar:** 1L

b) **Cargo Aircraft Only:** 30L

Vessel Stowage Requirements

a) **Vessel Stowage:** A

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Section 15 - Regulatory Information

EPA Regulations:

RCRA Hazardous Waste Number (40 CFR 261.33): Not listed

RCRA Hazardous Waste Characteristics (40 CFR 261.21): waste(s) may show characteristics of ignitability (D001)

CERCLA Hazardous Substance (40 CFR 302.4) listed specific per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4); CWA, Sec. 307(a), CAA, Sec. 112

CERCLA Reportable Quantity (RQ): 5000 lb (2270 kg)

SARA 311/312 Codes: Acute, Chronic, Flammable, Reactive

SARA Toxic Chemical (40 CFR 372.65): Not listed

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed

TSCA: Listed

OSHA Regulations:

Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): 10ppm (25mg/m³)

Section 16 - Other Information

Revision Notes: Revised to 16 sections

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