

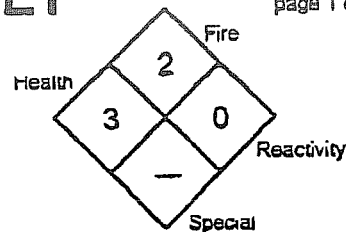
**MATERIAL SAFETY DATA SHEET**



GW International MSDS #: 64014
MSDS Revision/Issue Date: 03/15/01
Supercedes Revision Date: 02/23/98

NFPA 704 DESIGNATION  
HAZARD RATING

4=Extreme  
3=High  
2=Moderate  
1=Slight  
0=Insignificant



**1. CHEMICAL PRODUCT IDENTIFICATION & COMPANY IDENTIFICATION**

**PRODUCT IDENTIFIER:** ACETIC ACID, GLACIAL

**GENERAL USE:** Used in the manufacture of various acetates, acetyl compounds, cellulose acetate, acetate rayon, plastics and rubber, in tanning; as a laundry sour, as a solvent for gums, resins and volatile oils.

**PRODUCT DESCRIPTION:** An organic acid. Synonyms include: Ethanoic Acid, Ethylic Acid, Methanecarboxylic Acid and vinegar acid.

**INFORMATION PROVIDED BY:** GW INTERNATIONAL  
Corporate Office  
808 S.W. 15<sup>th</sup> Avenue  
Portland, OR 97205  
For MSDS call: PHONE: 503-228-2600 or 800-547-1400

**EMERGENCY PHONE NUMBERS**

GW INTERNATIONAL: 800-497-7455  
CHEMTREC: 800-424-9300  
CANUTEC: 613-996-6666

**2. COMPOSITION & INFORMATION ON INGREDIENTS**

COMPONENT	CAS #	OSHA HAZARD	WT %	ACGIH		OSHA	
				TLV <sub>(TWA)</sub>	STEL	PEL <sub>(TWA)</sub>	STEL
Acetic Acid	000064-19-7	Combustible Liquid; Corrosive; Lung Toxin; Eye, Skin Hazard	99.8	10 ppm	15 ppm	10 ppm	None

NDA = No Data Available

N/A = Not Applicable

**3. HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW:** A clear, colorless liquid having a very strong, pungent, vinegar odor. Vapors, mists and liquid may be severely irritating or corrosive to all tissues contacted. Combustible liquid and vapors. Vapors from this material may concentrate in confined spaces and form an explosive mixture. Inhalation of high concentrations of vapor or mist may cause permanent lung damage. The NIOSH I.D.L.H. for Acetic Acid is: 50 ppm.

**POTENTIAL HEALTH EFFECTS**

**INHALATION:** Inhalation of vapors or mists may cause severe irritation or burns to the nose, mouth, throat, mucous membranes and lungs. Symptoms of exposure may include sneezing, coughing, choking, chest pain and impairment of lung function. Inhalation of high concentrations may produce pulmonary edema (fluid in the lungs) or bronchopneumonia that can lead to permanent lung damage.

**EYE CONTACT:** Exposure to vapors, mists or liquid can cause severe eye irritation or burns. Symptoms of exposure may include tearing, redness, swelling, pain and mucous discharge. Exposure may cause corneal damage with impairment of vision.

**SKIN CONTACT:** Exposure to mists or liquid may cause severe skin irritation or burns. Symptoms of exposure may include redness, swelling, a stinging sensation and pain. No published reports indicate this material is absorbed through the skin.

**INGESTION:** Ingestion can cause severe irritation and/or burns to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding and possible tissue ulceration.

**CHRONIC:** Chronic inhalation exposure may cause dental discoloration and erosion of the teeth, darkening of the skin, pharyngitis and/or catarrhal bronchitis. Otherwise, the chronic health effects of exposure to this material are expected to be the same as for acute exposure.

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**4. FIRST AID MEASURES**

- INHALATION:** If inhaled, immediately move to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; use the Holger Nielsen method (back pressure-arm lift) or proper respiratory device. If breathing is difficult, give oxygen. Call a physician.
- EYE CONTACT:** In case of contact, immediately flush eyes with plenty of clean running water for at least 15 minutes, lifting the upper and lower lids occasionally. Remove contact lenses, if worn. Get medical attention immediately.
- SKIN CONTACT:** In case of contact, immediately flush skin with plenty of clean running water for at least 15 minutes, while removing contaminated clothing and shoes. If burn or irritation occurs, call a physician.
- INGESTION:** If swallowed, DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give plenty of water to drink. Never give anything by mouth to an unconscious person.
- NOTE TO PHYSICIANS:** The oral toxicity of Acetic Acid, Glacial is relatively low, but it is severely irritating to the eyes, skin and mucous membranes. If ingested, consideration should be given to careful endoscopy as stomach or esophageal burns, perforations or strictures may occur. Careful gastric lavage with an endotracheal tube in place should be considered. Treat exposure symptomatically.

**5. FIRE FIGHTING MEASURES**

Flashpoint and Method: 103 °F (39 °C) Tagliabue Closed Cup

Flammable Limits (in air, % by volume) Lower: 5.4 Upper: 16.0

Autoignition Temperature: 867 °F (463 °C)

**GENERAL HAZARD:** The Uniform Fire Code physical hazard classification for this material is: **Combustible Liquid, Class II**; the health hazard is: **Corrosive (Acidic)**. Vapors from this product may concentrate in confined spaces and form an explosive mixture. Heated containers may rupture violently from the excessive heat in a fire. This material may produce hazardous fumes and hazardous decomposition products.

**FIRE FIGHTING INSTRUCTIONS:** **EXTINGUISHING MEDIA:** Water fog, foam, CO<sub>2</sub> or dry chemicals.  
Use a water spray or fog to cool the containers exposed to the heat of a fire.

**FIRE FIGHTING EQUIPMENT:** Fire fighters should wear full protective equipment, including self-contained breathing apparatus.

**HAZARDOUS COMBUSTION PRODUCTS:** When heated to decomposition, it emits toxic carbon monoxide and carbon dioxide plus irritating smoke.

**6. ACCIDENTAL RELEASE MEASURES**

**LAND SPILL:** Remove all ignition sources. Vapors, which are heavier than air, can be concentrated at ground level. Wearing recommended protective equipment and clothing, dike the spill and pick up the bulk of liquid using non-sparking tools, or absorb the liquid in sand or a non-combustible absorbent. Place in approved containers for recovery, disposal, or satellite accumulation. Neutralize the acidity, of the remaining liquid, using soda ash, lime, or other suitable agent appropriate for neutralizing acidic liquids. Flush the spill area with water; collect the rinsates for disposal or sewer, as appropriate. For large spills, vapors may be dispersed by the use of a water fog; the run-off must be controlled and disposed of properly.

**WATER SPILL:** Wear recommended protective equipment and clothing if contact with hazardous material can occur. Stop or divert water flow. Dike contaminated water and remove for disposal and/or treatment. As appropriate, notify all downstream users of possible contamination.

**7. HANDLING AND STORAGE****STORAGE TEMPERATURE:** Ambient**STORAGE PRESSURE:** Ambient

**GENERAL:** Store in a cool, dry, well ventilated area away from all sources of ignition and incompatible materials or products. Do not store in direct sunlight. Store above the freezing point. Do not get this material in eyes, on skin or on clothing. Wear recommended personnel protective equipment. Do not breathe vapors, mists or aerosols. Use only with adequate ventilation. Do not drink this material. Keep container tightly closed when not in use. Wash thoroughly after handling. **Always electrically ground and bond all containers and equipment before transferring product.**

The empty containers may be hazardous. They can contain flammable residues and vapors. Do not cut, puncture or weld on or near these containers.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**CONTROL MEASURES:** Use a local or general, mechanical exhaust ventilation system capable of maintaining emissions, in the work area, below the ACGIH-TLV or OSHA-PEL.

**RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT**

**RESPIRATOR:** For exposure above the OSHA-PEL or ACGIH-TLV, wear a NIOSH approved full facepiece or half mask air-purifying cartridge respirator equipped with a good organic vapor cartridge or supplied air. For exposures to Acetic Acid, above 50 ppm, a full facepiece supplied air respirator or self-contained breathing apparatus (SCBA), operated in the pressure demand and positive pressure modes is required.

**EYES:** Wear chemical goggles (recommended by ANSI Z87.1-1979), unless a full facepiece respirator is worn.

**GLOVES:** Wear neoprene or butyl rubber gloves.

**CLOTHING & EQUIPMENT:** Wear a neoprene or butyl rubber apron, or full protective clothing. An eye wash station and safety shower should be available in the work area.

**FOOTWEAR:** Wear neoprene or butyl rubber boots.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Clear, colorless	<b>Bulk Density (pounds/ft<sup>3</sup>):</b>	Not applicable
<b>Physical State:</b>	Liquid	<b>Vapor Pressure:</b>	11.4 mm Hg @ 20 °C
<b>Odor:</b>	Very strong, pungent, vinegar odor	<b>Vapor Density (air=1):</b>	2.07
<b>Odor Threshold:</b>	0.21 to 1.0 ppm	<b>Evaporation Rate (n-Butyl Acetate=1):</b>	Approximately 1.0
<b>Molecular Formula:</b>	CH <sub>3</sub> COOH	<b>VOC Content:</b>	Approximately 1,049 g/liter
<b>Molecular Weight:</b>	60.05	<b>% Volatile:</b>	100
<b>Boiling Point:</b>	Approximately 118.1 °C (245 °F)	<b>Solubility in H<sub>2</sub>O:</b>	Complete
<b>Freezing/Melting Point:</b>	Approximately 16.6 °C (62 °F)	<b>Octanol/Water Partition Coefficient:</b>	Log P <sub>oct</sub> = -0.31
<b>Specific Gravity:</b>	Approximately 1.049 @ 20 °C	<b>pH (as is):</b>	Less than 2.0
<b>Density (pounds/gallon):</b>	Approximately 8.75	<b>pH (1% solution):</b>	Approximately 3

**10. STABILITY AND REACTIVITY**

**GENERAL:** This product is stable and hazardous polymerization will not occur.

**CONDITIONS TO AVOID:** Hot storage and all sources of ignition.

**INCOMPATIBLE MATERIAL:** Caustics and alkali, strong oxidizers, reducing agents, sulfides, cyanides and chlorine releasers.

**HAZARDOUS DECOMPOSITION PRODUCTS:** When heated to decomposition, it emits toxic oxides of carbon plus irritating smoke.

**SENSITIVITY TO MECHANICAL IMPACT:** This material is not sensitive to mechanical impact.

**SENSITIVITY TO STATIC DISCHARGE:** This material is sensitive to static discharge.

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**11. TOXICOLOGICAL INFORMATION**

**Components:** Acetic Acid

**Eye Contact:** Rabbit: 50 ug open; Severe

**Skin Contact:** Human: 50 mg/24 hours; Mild

**Oral Rat LD<sub>50</sub>:** 3,310 mg/kg

**Dermal Rabbit LD<sub>50</sub>:** 1,060 mg/kg

**Inhalation Rat LC<sub>50</sub>:** Inhalation Rat LCLo: 16,000 ppm/4 hours

**Human Data:** Unknown Route Man LDLo: 308 mg/kg

**Other Toxicological Data:** Inhalation Human TCLo: 816 ppm/3 minutes; Sense Organs & Special Senses

**Carcinogenicity:** No data available

**Teratogenicity:** Oral Rat TDLo: 700 mg/kg (female 18 Days after birth) Effects on Newborn; Behavior

**Mutagenicity:** Sister Chromatid Exchange - Human Lymphocyte: 5 mmol/Liter

**Synergistic Products:** None Reported

**Target Organs:** Eyes, Skin, Mucous Membranes, Lungs, Gastrointestinal Tract, Teeth

**Medical Conditions Aggravated By Exposure:** Skin, Respiratory, Gastrointestinal Disorders

**12. ECOLOGICAL INFORMATION****ENVIRONMENTAL FATE:**

Acetic Acid has the following properties: a high biochemical oxygen demand and a potential to cause oxygen depletion in aqueous systems, a low potential to effect aquatic organisms, a high potential to biodegrade (low persistence) with unacclimated microorganisms from activated sludge and a low potential to bioconcentrate.

**ENVIRONMENTAL CONSIDERATIONS:**

Aquatic toxicity: Goldfish: lethal at 423 mg/liter, 20 hours. Goldfish: period of survival at pH 7.3 = 4 days at 10 ppm. Creek chub, Detroit River; LD<sub>0</sub> = 100 mg/liter, 24 hours & LD<sub>100</sub> = 200 mg/liter, 24 hours. Bluegill: TLm (96 hours) = 75 mg/liter.

**13. DISPOSAL CONSIDERATIONS**

**RCRA 40 CFR 261 CLASSIFICATION:** Ignitable & Corrosive Waste

**U.S. EPA WASTE NUMBER/DESCRIPTION:** D001 & D002

If this product is disposed of as shipped, it meets the criteria of a hazardous waste as defined under 40 CFR 261 due to its ignitability and corrosivity. If this product becomes a waste, it will be a hazardous waste which is subject to the Land Disposal Restrictions under 40 CFR 268 and must be managed accordingly. As a hazardous liquid waste, it must be disposed of in accordance with local, state, and federal regulations in a permitted hazardous waste treatment, storage, and disposal facility, by incineration.

**14. TRANSPORTATION INFORMATION**

**DOT PROPER SHIPPING NAME:** Acetic Acid, Glacial

**Hazard Class:** 8 **UN Number:** UN2789 **Packing Group:** II

**Primary Label:** Corrosive **Subsidiary Label(s):** Flammable Liquid

**Primary/Subsidiary Placards:** Corrosive / Flammable Liquid

**DOT Reportable Quantity (RQ):** 5,000 pounds (CH<sub>3</sub>COOH) **RQ for Product:** 5,000 pounds (570.8 gallons)

**Marine Pollutant:** No

**2000 North American Emergency Response Guidebook No.:** 132

**TDG PROPER SHIPPING NAME:** Acetic Acid, Glacial

**Hazard Class:** 8 (9.2) **UN Number:** UN2789 **Packing Group:** II

**Primary Label:** Corrosive **Subsidiary Label(s):** None Required

**Primary/Subsidiary Placards:** Corrosive / None Required

**TDG Reportable Quantity (RQ):<sup>#</sup>** At least 5 kg or 5 liters

**TDG Schedule XII:** No

**Regulated Limit (RL):<sup>##</sup>** 50 kg (CH<sub>3</sub>COOH) **RL for Product:** 50 kg (47.6 liters)

**Other Shipping Information:** None

<sup>#</sup> Canadian Transportation of Dangerous Goods Regulations (TDGR), Part IX, Table 1, Quantities or levels for immediate reporting: releases of reportable quantities, RQ, that meet the definition of a "dangerous occurrence" (a threat to life, health, property, or the environment) must be reported to the appropriate authorities as outlined in TDGR 9.13(1) and 9.14(1).

<sup>##</sup> Reporting to Environment Canada is required for any releases exceeding the regulated limits, RL, of 9.2 materials (primary or secondary). The regulated limits are found in Schedule XIII of the TDGR.

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**15. REGULATORY INFORMATION****COMPONENTS:**Acetic Acid**OSHA Target Organs:**Eyes, Skin, Mucous Membranes,  
Lungs, Gastrointestinal Tract, Teeth**Carcinogenic Potential:**

Regulated by OSHA:	No
Listed on NTP Report:	No
Listed by IARC:	No
IARC Group:	Not applicable
ACGIH Appendix A:	Not listed
A1 Confirmed Human:	Not applicable
A2 Suspected Human:	Not applicable

**U.S. EPA Requirements****Release Reporting****CERCLA (40 CFR 302)**

Listed Substance:	Yes
Reportable Quantity:	5,000 pounds
Category:	D
RCRA Waste No.:	Not listed
Unlisted Substance:	Not applicable
Reportable Quantity:	Not applicable
Characteristic:	Not applicable
RCRA Waste No.:	Not applicable

**SARA TITLE III****Section 302 & 303 (40 CFR 355):**

Listed Substance:	No
Reportable Quantity:	Not applicable
Planning Threshold:	Not applicable

**Section 311 & 312 (40 CFR 370):**

Hazard Categories (product):	Fire: <input checked="" type="checkbox"/> Sudden Release of Pressure: <input type="checkbox"/> Reactive: <input type="checkbox"/> Acute Health: <input checked="" type="checkbox"/> Chronic Health: <input type="checkbox"/>
Planning threshold:	10,000 pounds

**Section 313 (40 CFR 372):**

Listed Toxic Chemical:	No
Reporting Threshold:	Not applicable

**U.S. TSCA Status**

Listed (40 CFR 710):	Yes
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**State Regulations****State of California: Safe Drinking Water and Toxins Enforcement Act, 1986 (Proposition 65):**

Carcinogen:	No
Reproductive Toxin:	No

**Other Regulations**

State Right To Know Laws:	MA, NJ, PA
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**Canadian Regulations****Product Information:**

Controlled Product:	Yes
WHMIS Hazard Symbols:	Combustible Liquid; Corrosive Material
WHMIS Class & Division:	B.3; E

**Ingredient Information:**

IDL Substance:	Yes
Domestic Substance List:	Yes

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**16. OTHER INFORMATION**

EPA Registration number: Not applicable

Approved Product Uses: Not applicable

**Special Notes:**

**WARNING:** Hot organic chemical vapors or mists are susceptible to sudden spontaneous combustion when mixed with air. Ignition may occur at temperatures below those published in the literature as "autoignition" or "ignition" temperatures. Ignition temperatures decrease with increasing vapor volume and vapor/air contact time and are influenced by pressure changes.

Ignition may occur at typical elevated-temperature process conditions, especially in processes operating under vacuum, if subjected to a sudden ingress of air, or outside process equipment operating under elevated pressure if a sudden escape of vapors or mists to the atmosphere occurs. Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained.

**Special Instructions:** Do not add this material to hypochlorite bleaches, chlorine sanitizers or chlorinated cleaners as this can liberate toxic, corrosive Chlorine gas.

**MSDS Revision Information:** Information Revised This Issue Date: Updated information sections - 3, 4, 5, 7, 8, 10, 11, 14 & 16.  
Form Revision made 08/01/00

**MSDS Distributed by:** GW International  
Environmental Department  
Phone: 800-547-1400 FAX: 503-412-3390

Prepared By: Edward Doheny

Date Prepared: March 15, 2001

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