Material Safety Data Sheet

Revision Issued: 9/25/2009 Supercedes: 1/31/2006 First Issued: 2/25/1987

Section I - Chemical Product And Company Identification

Product Name: Acetic Acid, Glacial

CAS Number: 64-19-7 HBCC MSDS No. CA01000

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Section II - Composition/Information On Ingredients

			Exposure Limits (TWAs) in Air		
Chemical Name	CAS Number	%	ACGIH TLV	OSHA PEL	STEL
Acetic Acid, Glacial	64-19-7	100	10 ppm	10 ppm	15 ppm

Section III - Hazard Identification

Routes of Exposure: Acetic acid can affect the body if it is inhaled, ingested, or comes in contact with the eyes and skin.

Summary of Acute Health Hazards

Ingestion: Swallowing acetic acid may cause severe injury or death. May result in penetration of the esophagus, bloody vomiting, diarrhea, shock, hemolysis, and hemoglobinuria which is followed by anuria. Ingestion of as little as 1.0 ml has resulted in perforation of the esophagus.

Inhalation: May cause serious damage to the lining of the nose, throat, and lungs. Delayed breathing difficulties may occur. Mist or vapor may be irritating to the respiratory tract. Neither odor nor degree of irritation are adequate to indicate vapor concentration.

Skin: Contact with concentrated solution may cause serious damage to the skin. Effects may include redness, pain, skin burns. High vapor concentrations may cause skin sensitizations.

Eyes: May very rapidly cause severe eye damage which may be followed by loss of sight. Contact lenses should not be worn when working with this material. Mist or vapor may be irritating to the eyes. Exposure to vapor may cause intense watering and irritation to eyes.

Effects of Overexposure: Repeated or prolonged exposure to Acetic Acid may cause darkening or irritation of the skin, erosion of the exposed front teeth, and chronic inflammation of the nose, throat, and bronchial tubes. Bronchopneumonia and pulmonary edema may develop following acute exposure. Chronic exposure may result in pharyngitis and catarrhal bronchitis.

Medical Conditions Generally Aggravated by Exposure: N/A

Note to Physicians: N/A

Section IV - First Aid Measures

Ingestion: Call a physician or poison control center immediately. Do NOT induce vomiting. If victim is fully conscious, give large quantities of water. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than the hips to help prevent aspiration.
Inhalation: Move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Get medical attention as soon as possible.
Skin: Immediately flush with plenty of water for at least 15 minutes. Remove any contaminated clothing immediately, and flush underlying skin. Get medical attention immediately.
Eyes: Wash eyes immediately with large amounts of water for at least 15 minutes, lifting the lower and upper lids occasionally. Get medical attention immediately.

Section V - Fire Fighting Measures

Flash Point: 103°F (39°C) **Autoignition Temperature:** 867°F (463°C)

Lower Explosive Limit: 4.0% **Upper Explosive Limit:** 19.9 % @ 200°F

Unusual Fire and Explosion Hazards: Combustible

Extinguishing Media: Water spray, alcohol foam, dry chemical, or carbon dioxide.

Special Firefighting Procedures: Use water spray to keep fire-exposed containers cool. In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Water may be used to flush spills away from exposures and to dilute spills to non-flammable mixtures. Water diluted acid can react with metals to form hydrogen gas.

Section VI - Accidental Release Measures

Eliminate all ignition sources. No flares, smoking, or flames in area. Use non-sparking tools and equipment. Keep material out of water sources and sewers. Build dikes to contain flow as necessary. Use water spray to knock-down vapors and to dilute spill to a nonflammable mixture. Neutralize spilled material with crushed limestone, soda ash, or lime. With clean shovel, carefully place material into clean, dry container and cover. Remove from spill area. Flush area with water. Take measures to protect runoff from entering storm drains, sewers and/or streams. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

Section VII - Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Protect from freezing. Store above 62°F (17°C). Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Avoid breathing mist or vapor. Wash thoroughly after handling.

Section VIII - Exposure Controls/Personal Protection

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.
Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Protective Clothing: Employees should be provided with and required to use impervious clothing, neoprene gloves, and other appropriate protective clothing necessary to prevent any possibility of skin contact with solid or liquid acetic acid.
Eye Protection: Employees should be provided with and required to use face shields (eight-inch minimum) and dust- and splash-proof safety goggles where there is any possibility of solid or liquid acetic acid contacting the eyes. Maintain eye wash fountain and quick-drench facilities in work area.
Other Protective Clothing or Equipment: N/A
Work/Hygienic Practices: Employees who handle solid or liquid acetic acid should wash their hands thoroughly before eating, smoking, or using toilet facilities. A safety shower, an eye bath, and washing facilities should be available. Do NOT place food, coffee or other drinks in the area where dusting or splashing of solutions is possible.

Section IX - Physical and Chemical Properties

Physical State: Liquid
pH: 2.4
Melting Point/Range: 62°F; 17°C
Boiling Point/Range: 244F; 118°C
Appearance/Color/Odor: Watery liquid, colorless, pungent vinegar odor
Solubility in Water: Miscible
Vapor Pressure (mmHg): 15.6 @ 25°C
Specific Gravity (Water=1): 1.05 @ (20°C)
Molecular Weight: 60.1
Vapor Density (Air=1): 2.1
% Volatiles: 100 (by volume)
How to detect this compound : N/A
Evaporation Rate (n-butyl acetate=1): 0.97
Odor Threshold: 0.48 ppm
Viscosity: 1.2 mPa.s (20°C);
Freezing Point: 62°F

Section X - Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage.
Hazardous Polymerization: Will not occur
Conditions to Avoid: N/A
Materials to Avoid: Strong oxidizing agents (especially chromic acid, sodium peroxide & nitric acid), strong caustics [Note: Corrosive to metals.]

Hazardous Decomposition Products: May also release toxic and irritating vapors. No exotherm to 500°C.

Section XI - Toxicological Information

Acute toxicity data arte listed below.

Oral LD-50: (rat)	3,310 – 3,530 mg/kg
Oral Ld-50: (mouse)	4,960 mg/kg
Inhalation LC-50: (mouse)	1 h: 5620 ppm
Dermal LD-50: (rabbit)	1,060 mg/kg
Skin Irritation (rabbit)	severe
Eye irritation (rabbit)	severe

Section XII - Ecological Information

Acute toxicity data are listed below.
This material is a strongly acidic aqueous solution, and this property may cause adverse environmental effects.
Oxygen Demand Data:
BOD-5: 340 – 880 mg/g
BOD-20: 900 mg/g
COD: 1,030 mg/g
Acute Aquatic Effects Data:
96 h LC-50 (fathead minnow): > 100 mg/I
48 h LC-50 (golden orfe): 410 mg/I
48 h LC-50 (mosquito fish): 251 mg/I
96 h LC-50 (daphnid): > 100mg/I

Section XIII - Disposal Considerations

Consult federal, state, and local authorities for disposal procedures. Since emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, or weld on or near this container.

Section XIV - Transport Information

DOT Proper Shipping Name: Acetic Acid, Glacial or Acetic Acid Solution
DOT Hazard Class/ I.D. No.: 8, 3, UN2789, II

Section XV - Regulatory Information

Reportable Quantity: 5000 (2270 Kilograms)
NFPA Rating: Health - 3; Flammability - 2; Instability - 0
IDLH (Immediately Dangerous to Life or Health): 50 ppm.
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme
Carcinogenicity Lists: NTP: No **IARC Monograph:** No **OSHA Regulated:** No
Uniform Fire Code Rating: Class II Combustible Liquid.

Section XVI - Other Information

Synonyms/Common Names: Methane Carboxylic Acid, Ethanoic Acid, Ethylic Acid, Vinegar Acid
Chemical Family/Type: Organic Acid
Section(s) changed since last revision: III, IV, V, IX, XIII, XV
IMPORTANT! Read this MSDS before use or disposal of this product. Pass along the information to employees and any other persons who could be exposed to the product to be sure that they are aware of the information before use or other

exposure. This MSDS has been prepared according to the OSHA Hazard Communication Standard [29 CFR 1910.1200]. The MSDS information is based on sources believed to be reliable. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, **Hill Brothers Chemical Company** makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Also, additional information may be necessary or helpful for specific conditions and circumstances of use. It is the user's responsibility to determine the suitability of this product and to evaluate risks prior to use, and then to exercise appropriate precautions for protection of employees and others.