

MATERIAL SAFETY DATA SHEET
Acetic Acid

Date: 04/10/2003

I Company Identification

Company Name: BHS Marketing / Western Briquette
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II Product Identification

Product Name: Acetic Acid
Other Names: Acetic Acid Glacial, Acetic Acid Technical
Cas Number: 64-19-7
% by Weight: 100
OSHA PEL: 10 ppm

III Typical Physical Properties

Physical Appearance: Clear, colorless liquid
Physical State: Liquid
Odor: Strong vinegar like odor
Odor Threshold: 0.037 to 0.15 ppm
Formula Weight: 60.05
Boiling Point: 118.00°C (245°F)
Freezing Point: 62°F (16.6°C)
Specific Gravity: 1.049 @ 20°C
Saturated Vapor
Density (Air=1): 2.07

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III Typical Physical Properties (cont.)

Vapor Pressure:	15.70 mm Hg @ 20°C
Viscosity:	1.22 cP @ 20°C
Bulk Density:	1.0492 @ 68°F (20°C)
Refractive Index:	1.3715 @ 68°F (20°C)
Octanol/Water Partition Coefficient:	Not determined
Solubility in Water:	100 %
Other Solubilities:	Soluble in ethanol, ether, glycerol, glycerin, acetone, benzene, and carbon tetrachloride. Insoluble in carbon disulfide.

IV Reactivity Data

Chemical Stability:	Stable under conditions of normal use.
Conditions to Avoid:	Exposure to heat, ignition sources, and incompatibles.
Hazardous Decomposition Products:	Irritating and toxic fumes may be emitted upon decomposition. Combustion may produce CO and CO ₂ . Reactions with metals may produce hydrogen gas. Can be dangerously reactive with strong acids or oxidizing agents.
Polymerization:	Hazardous polymerization does not occur.
Chemical Incompatibilities:	Avoid contact with oxidizers and reducing agents.

V Toxicological Information and Interpretation

Acute Inhalation Effects:	Vapor from concentrated acid glacial is extremely irritating and can cause bronchial constriction. Chronic exposure causes continued inflammation of the respiratory tract.
Acute Oral Effects:	Human oral, TD Lo caused functional changes in the esophagus and bleeding in the small and large intestine.

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VI Ecological Information

Ecotoxicity: Mosquito fish, T: m=251 ppm/24 hr; fathead minnow, LC50= 315 mg/L/1 hr, 122 mg/L/24 hr and 88 mg/L/96 hr; bluegill, TLm=75 mg/L/96 hr.

Environmental Fate: If released on land, acetic acid will spread on the surface and penetrate the soil at a rate dependent on soil type and water content. In water, it is readily degradable and dilute solutions will neutralize to acetate salts. Acetic acid shows no potential for bioaccumulation.

VII Hazard Data

Emergency Overview: Danger! Flammable liquid and vapor. Causes burns to skin and eyes. Vapors cause severe respiratory tract irritation.

Primary Entry Routes: Inhalation, skin and eye contact, ingestion.

Target Organs: Eyes, skin, respiratory system, teeth, gastrointestinal, mucous membranes.

Acute Effects

Inhalation: May cause severe irritation to the respiratory tract. Exposure to vapors or mist may cause chemical pneumonitis, bronchitis, and pulmonary edema. Severe exposure may result in lung tissue damage and corrosion of the mucous membranes. Chronic exposure may cause tooth decay.

Eye: Corrosive. Causes burns. Direct contact may cause conjunctivitis, redness, pain, blurred vision, conjunctival and corneal destruction and permanent injury.

Skin: Corrosive. Causes burns. Contact may cause reddening, itching, inflammation, burns, blistering, and tissue damage. Repeated or prolonged contact may cause darkening of the skin.

Ingestion: Corrosive. May cause burning pain of the mouth, throat and abdomen and coughing and constriction of the throat, followed by nausea, abdominal spasms, vomiting, hematemesis and diarrhea.

Special Toxic Effects: None known

Carcinogenicity: IARC, NTP, and OSHA do not list acetic acid as a carcinogen. This product contains no carcinogens in concentration of 0.1 % or greater.

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VIII Recommended First Aid Measures

Eye Exposure:	Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get immediate medical attention.
Skin Exposure:	Remove contaminated clothing immediately. Wash area of contact thoroughly with soap and water. Get immediate medical attention. Discard contaminated clothing and leather goods.
Inhalation Exposure:	Remove exposed person from source of exposure. If not breathing, ensure clear airway and institute cardiopulmonary resuscitation (CPR). If breathing is difficult, administer oxygen if available. Keep affected person warm and at rest. Get immediate medical attention.
Ingestion Exposure:	Do not induce vomiting. If victim is conscious, give 1-3 glasses of water or milk to dilute stomach contents. Keep affected person warm and at rest. Get immediate medical attention.

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

IX Fire Fighting Measures

Flash Point:	39.00oC (103.0oF)		
Flash Point Method:	CC;OC		
Burning Rate:	1.6 mm/min		
Autoignition Temperature:	427.00oC (800.6oF)		
LEL:	4.00 %		
UEL:	19.90 %		
NFPA Rating:			
Health: 2	Flammability: 2	Reactivity: 0	Specific: none
Extinguishing Media:	Use dry chemical, alcohol foam, all purpose AFFF or carbon dioxide to extinguish fire. Water may be ineffective but should be used to cool fire-exposed containers, structures and to protect personnel. If leak or spill has not ignited, ventilate area and use water spray to disperse gas or vapor and to protect personnel attempting to stop a leak. Use water to dilute spills and to flush them away from sources of ignition. Do not flush down public sewers or other drainage systems. Move container from fire area if you can do it without risk.		

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Unusual Fire and Explosion Hazards:	Dangerous when exposed to heat or flame. Vapors form flammable or explosive mixtures with air, heat, or flame. Vapors form flammable or explosive mixtures with air at room temperature. Vapor or gas may spread to distant ignition sources and flash back. Vapors and gas may accumulate in low areas. Runoff to sewer may cause fire or explosion hazard. Containers may explode in heat of fire. Vapors may concentrate in confined areas.
Hazardous Combustion Products:	Carbon Oxide(s)
Fire Fighting Instructions:	If possible without risk, move containers from fire area. If impossible, apply cooling water to sides of containers until well after fire is out. Stay away from ends of tanks. Withdraw immediately if you hear a rising sound from venting safety device or notice any tank discoloration due to fire. Do not release runoff from fire control methods to sewers or waterways.
Fire Fighting Equipment:	Exposed firefighters must wear MSHA/NIOSH approved positive pressure self-contained breathing apparatus with full-face mask and full protective clothing. In advanced or massive fires, fire fighting should be done from a safe distance or from a protected location.

X Accidental Release Measures

Spill/Leak Procedures:	Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind, keep out of low areas, and ventilate closed spaces before entering. (Also see Personal Protection Information section) Isolate for ½ mile in all directions if tank, railcar or tank truck is involved in fire. Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Shut off ignition sources; no flares, smoking, or flames in hazard area. Stop leak if you can do it without risk. Water spray may reduce vapor, but it may not prevent ignition in closed spaces.
Small Spills:	Take up with sand or other noncombustible absorbent material and place into containers for later disposal.
Large Spills:	Dike far ahead of liquid spill for later disposal. Refer to Section 13 for release reporting information, if applicable.
Regulatory Requirements:	Follow applicable OSHA regulations (29 CFR 1910.120)

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XI Handling and Storage

Handling Precautions:	Do not get in eyes, or skin or on clothing. Do not breathe vapors or mists. Keep containers closed. Use only with adequate ventilation. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Remove contaminated clothing and clean before reuse. Shower after work using soap and water. Destroy contaminated leather items such as belts, shoes and other items that cannot be decontaminated. Never handle when working alone. Assure that proper personal protection measures are taken when opening or entering confined storage vessels. Keep away from heat, sparks and flame. Keep operating temperatures below ignition temperatures at all times. Use non-sparking tools.
Storage Requirements:	Store in tightly closed containers in cool, dry, isolated, well-ventilated area away from heat, sources of ignition and incompatibilities. Ground lines and equipment used during transfer to reduce the possibility of static spark-initiated fire or explosion. Store at ambient or lower temperature. Protect against physical damage. Store in original container. Corrosive product, store in tanks made of compatible materials, such as stainless steel.

XII Exposure Controls/ Personal Protection

Engineering Controls:	To prevent static sparks, electrically ground and bond all equipment used with and around acetic acid.
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 contamination dispersion into the work area by controlling it at its source.
Administrative Controls:	Consider replacement and periodic medical exams of exposed workers with emphasis on the skin, blood, and liver.
Respiratory Protection:	If exposure limits are exceeded or if irritation is experienced, NIOSH approved respiratory protection should be worn. Normally, a NIOSH approved respirator for organic vapors are generally acceptable. For high concentrations and for oxygen-deficient atmospheres, use a NIOSH approved air-supplied respirator. Ventilation and other forms of engineering controls are often the preferred

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means of controlling chemical exposures. Respiratory protection may be needed for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA regulations (29 CFR 1910.134).

Protective Clothing/
Equipment:

Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Teflon, polyvinyl alcohol, and 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 acetic acid from your shoes and clean personal protective equipment.

Comments:

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

XIII Disposal Considerations

Disposal:

This substance, when discarded or disposed of, is not specifically listed as a hazardous waste in Federal regulations; however it could be characteristically hazardous if it is considered toxic, corrosive, ignitable, or reactive according to Federal definitions (40 CFR 261). Additionally, it could be designated as hazardous according to state regulations. This substance could also become a hazardous waste if it is mixed with or comes in contact with hazardous waste. Check 40 CFR 261 to determine whether it is a hazardous waste. If it is a hazardous waste, regulations at 40 CFR 262,263,264,268, and 270 apply. Chemical additions, processing and otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. The transportation, storage, treatment, and disposal of this waste material must be conducted in compliance with all applicable Federal, state, and local regulations.

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XIV Transportation Information

DOT Transportation Data (49 CFR 172.101):

Shipping Name:	Acetic Acid Glacial
Hazard Class:	8
Special Provisions:	A3, A6, A7, A10, B2, T8
ID NO:	UN2789
Packing Group:	II
Label:	Corrosive, Flammable liquid
Bill of Lading Description:	Acetic Acid Glacial, 8,UN2789, PGII, RQ
Placards Required:	Corrosive

XV Regulatory Information

U.S. Federal Regulations

Comprehensive

Environmental

Response Compensation

And Liability Act of 1980

(CERCLA):

The reportable quantity for this material is 5,000 pounds. Any spill or other release, or substantial threat of release, of this material to the air, water, or land (unless entirely contained in the workplace) equal to or in excess of the reportable quantity must be reported immediately to the National Response Center (800/424-8802) as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies. Contact the Coast Guard if spilled into navigable waterways under their jurisdiction. Failure to report may result in substantial civil and criminal penalties.

Toxic Substance Control
Act (TSCA):

All components of this product are listed on the TSCA inventory.

Clean Water Act (CWA):

Component(s) are listed under various sections of the Clean Water Act. Contact your local/state authorities to determine if substances are regulated under their jurisdiction.

Clean Air Act (CAA):

Component(s) are listed under various sections of the Clean Air Act. Contact your local/state authorities to determine if substances are regulated under their jurisdiction.

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XV Regulatory Information (cont.)

Superfund Amendments and Regulations Act (SARA) Title III Information:

Listed below are the hazard categories for SARA Section 311/312 (40 CFR 370):

Immediate Hazard:	X
Delayed Hazard:	-
Fire Hazard:	X
Pressure Hazard:	-
Reactivity Hazard:	-

XVI Additional Information

The information in this MSDS was obtained from sources, which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness.

The conditions or methods of handling, storage, use and disposal are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use or disposal of the product.

*n/a= Not Applicable