

Material Safety Data Sheet

Acetic Acid, Glacial

ACC# 00120

Section 1 - Chemical Product and Company Identification

MSDS Name: Acetic Acid, Glacial

Catalog Numbers: S70048, S70048-1SC, S70048SC, A35-500, A35500LC, A38-212, A38-450LB, A38-500, A38-56LB, A38500LC, A38C-2.5, A38C-212, A38FP500, A38J500, A38P-20, A38P500, A38S-2.5, A38S-212, A38S-500, A38S212EA, A38SI-212, A465-1, A465-250, A490-212, A491-212, A49120, A4914, A491SAM1, A491SAM2, A491SAM3, A492-200L, A492-20L, A492-212L, A492-500, A507-212, A507-500, BP1185-212, BP1185-500, BP1185-PP20, BP2400-500, BP2401-212, BP2401-500, BP2401C-212, BP2401P-20, BP2401S-212, BP2401S-500, BP2401SI-212, BP2401SI21, NC9532182, NC9776814, NC9776815, S70048-1MF*, S70048-1SCMF*, S70048-2MF, S700481MF, S700481SC, S700481SCMF, S700482MF, XXA490EP450LB

Synonyms: Ethanoic acid; Ethylic acid; Glacial acetic acid; Methanecarboxylic acid; Vinegar acid.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
64-19-7	Acetic acid	ca.100	200-580-7

Hazard Symbols: C

Risk Phrases: 10 35

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid liquid. **Flash Point:** 39 deg C. **Danger!** Corrosive. **Flammable liquid and vapor.** Causes severe digestive and respiratory tract burns. Causes severe eye and skin burns. May be harmful if absorbed through the skin. Acetic acid forms ice-like solid below 62°F (17°C).

Target Organs: Teeth, eyes, skin, mucous membranes.

Potential Health Effects

Eye: Causes severe eye irritation. Contact with liquid or vapor causes severe burns and possible irreversible eye damage.

Skin: Causes skin burns. May be harmful if absorbed through the skin. Contact with the skin may cause blackening and hyperkeratosis of the skin of the hands.

Ingestion: May cause severe and permanent damage to the digestive tract. Causes severe pain, nausea, vomiting, diarrhea, and shock. May cause polyuria, oliguria and anuria. Rapidly absorbed from the gastrointestinal tract.

Inhalation: Effects may be delayed. Causes chemical burns to the respiratory tract. Exposure may lead to bronchitis, pharyngitis, and dental erosion. May be absorbed through the lungs.

Chronic: Chronic exposure to acetic acid may cause erosion of dental enamel, bronchitis, eye irritation, darkening of the skin, and chronic inflammation of the respiratory tract. Acetic acid can cause occupational asthma. One case of a delayed asthmatic response to glacial acetic acid has been reported in a person with bronchial asthma. Skin sensitization to acetic acid is rare, but has occurred.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

Ingestion: If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Persons with pre-existing skin disorders or impaired respiratory or pulmonary function may be at increased risk to the effects of this substance. Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: Vapors may form an explosive mixture with air. Use water spray to keep fire-exposed containers cool. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Reacts with most metals to form highly flammable hydrogen gas which can form explosive mixtures with air. Flammable liquid and vapor. May be ignited by friction, heat, sparks, or flame. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Use water spray to cool fire-exposed containers. For large fires, use water spray, fog or alcohol-resistant foam.

Flash Point: 39 deg C (102.20 deg F)

Autoignition Temperature: 426 deg C (798.80 deg F)

Explosion Limits, Lower: 4.0 vol %

Upper: 19.9 vol %

NFPA Rating: (estimated) Health: 3; Flammability: 2; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Use water spray to dilute spill to a non-flammable mixture. Avoid runoff into storm sewers and ditches which lead to waterways. Wash area with soap and water. Use water spray to disperse the gas/vapor. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Cover with material such as dry soda ash or calcium carbonate and place into a closed container for disposal. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Avoid contact with heat, sparks and flame. Do not get on skin or in eyes. Do not ingest or inhale. Discard contaminated shoes. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from heat, sparks, and flame. Keep from freezing. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area. Do not store near alkaline substances. Acetic acid should be kept above its freezing point (62°F), since it will expand as it solidifies and may break container.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Acetic acid	10 ppm TWA; 15 ppm STEL	10 ppm TWA; 25 mg/m ³ TWA 50 ppm IDLH	10 ppm TWA; 25 mg/m ³ TWA

OSHA Vacated PELs: Acetic acid: 10 ppm TWA; 25 mg/m³ TWA

Personal Protective Equipment

Eyes: Wear chemical goggles.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR §1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: colorless liquid

Odor: pungent odor - vinegar odor

pH: <.01

Vapor Pressure: 11.4 mm Hg @ 20 deg C

Vapor Density: 2.10 (Air=1)

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

Viscosity: 1.22 cP

Boiling Point: 117-118 deg C

Freezing/Melting Point:16.6 deg C

Decomposition Temperature:Not available.

Solubility: Soluble in water; releases heat/vapor.

Specific Gravity/Density:1.05 (Water=1)

Molecular Formula:C₂H₄O₂

Molecular Weight:60.04

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: Incompatible materials, ignition sources, excess heat.

Incompatibilities with Other Materials: Metals, acetic anhydride, alcohols, amines, ammonium nitrate, chlorine trifluoride, nitric acid, permanganates, peroxides, sodium hydroxide, sodium peroxide, hydrogen peroxide, acetaldehyde, caustics (e.g. ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide), acid anhydrides, chlorosulfonic acid, oleum, chromium trioxide, potassium hydroxide, carbonates, bromine pentafluoride, perchloric acid, chromic anhydride, potassium-tert-butoxide, calcium salts, ethyleneimine, Attacks some forms of plastics, rubbers, and coatings., 2-aminoethanol, ethylene diamine, phosphorus trichloride, chromic acid anhydride, phosphorus isocyanate, diallyl methyl carbinol + ozone, nitric acid + acetone, xylene, sodium salts.

Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 64-19-7: AF1225000

LD50/LC50:

CAS# 64-19-7:

Draize test, rabbit, skin: 50 mg/24H Mild;

Inhalation, mouse: LC50 = 5620 ppm/1H;

Oral, rat: LD50 = 3310 mg/kg;

Skin, rabbit: LD50 = 1060 uL/kg;

Carcinogenicity:

CAS# 64-19-7: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology: No information available.

Teratogenicity: No teratogenic effects were observed among the offspring of mice, rats, or rabbits that had been given very large doses of apple cider vinegar (containing acetic acid) during pregnancy.

Reproductive Effects: Intratesticular, rat: TDLo = 400 mg/kg (male 1 day(s) pre-mating) Fertility - male fertility index (e.g. # males impregnating females per # males exposed to fertile nonpregnant females).

Neurotoxicity: No information available.

Mutagenicity: Sister Chromatid Exchange: Human, Lymphocyte = 5 mmol/L.; Unscheduled DNA Synthesis: Administration onto the skin, mouse = 79279 ug/kg.; Cytogenetic Analysis: Hamster, Ovary = 10 mmol/L.

Other Studies: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: LC50 = 88 mg/L; 96 Hr; Static bioassay @ 18-22°C Bluegill/Sunfish: LC50 = 75 mg/L; 96 Hr; Unspecified Goldfish: LC50 = 423 mg/L; 24 Hr; Unspecified flea Daphnia: EC50 = 32-47 mg/L; 24-48 Hr; Unspecified rila: Phytobacterium phosphoreum: EC50 = 8.86-11 mg/L; 5,15,25 min; Microtox test If released to water or soil, acetic acid will biodegrade readily. Evaporation from dry surfaces is likely to occur. When spilled on soil, the liquid will spread on the surface and penetrate into the soil at a rate dependent on the soil type and its water content. Acetic acid shows no potential for biological accumulation or food chain contamination.

Environmental: If released to the atmosphere, it is degraded in the vapor-phase by reaction with photochemically produced hydroxyl radicals (estimated typical half-life of 26.7 days). It occurs in atmospheric particulate matter in acetate form and physical removal from air can occur via wet and dry deposition.

Physical: Natural waters will neutralize dilute solutions to acetate salts.

Other: None.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	ACETIC ACID, GLACIAL				ACETIC ACID GLACIAL
Hazard Class:	8				8(9.2)
UN Number:	UN2789				UN2789
Packing Group:	II				II

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 64-19-7 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

CAS# 64-19-7: final RQ = 5000 pounds (2270 kg)

Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 64-19-7: acute, chronic, flammable.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

CAS# 64-19-7 is listed as a Hazardous Substance under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 64-19-7 can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

C

Risk Phrases:

R 10 Flammable.

R 35 Causes severe burns.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 64-19-7: 1

Canada - DSL/NDL

CAS# 64-19-7 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B3, E.

Canadian Ingredient Disclosure List

CAS# 64-19-7 is listed on the Canadian Ingredient Disclosure List.

Exposure Limits

CAS# 64-19-7: OEL-AUSTRALIA: TWA 10 ppm (25 mg/m³); STEL 15 ppm (37 mg/m³) OEL-AUSTRIA: TWA 10 ppm (25 mg/m³) OEL-BELGIUM: TWA 10 ppm (25 mg/m³); STEL 15 ppm (37 mg/m³) OEL-CZECHOSLOVAKIA: TWA 25 mg/m³; STEL 50 mg/m³ OEL-DENMARK: TWA 10 ppm (25 mg/m³) OEL-FINLAND: TWA 10 ppm (25 mg/m³); STEL 15 ppm (37 mg/m³); Skin OEL-FRANCE: STEL 10 ppm (25 mg/m³) OEL-GERMANY: TWA 10 ppm (25 mg/m³) OEL-HUNGARY: TWA 10 mg/m³; STEL 20 mg/m³ OEL-INDIA: TWA 10 ppm (25 mg/m³); STEL 15 ppm (37 mg/m³) OEL-JAPAN: TWA 10 ppm (25 mg/m³) OEL-THE NETHERLANDS: TWA 10 ppm (25 mg/m³) OEL-THE PHILIPPINES: TWA 10 ppm (25 mg/m³) OEL-POLAND: TWA 5 mg/m³ OEL-RUSSIA: TWA 10 ppm; STEL 5 mg/m³; Skin OEL-SWEDEN: TWA 10 ppm (25 mg/m³); STEL 15 ppm (35 mg/m³) OEL-SWITZERLAND: TWA 10 ppm (25 mg/m³); STEL 20 ppm (50 mg/m³) OEL-THAILAND: TWA 10 ppm (25 mg/m³) OEL-TURKEY: TWA 10 ppm (25 mg/m³) OEL-UNITED KINGDOM: TWA 10 ppm (25 mg/m³); STEL 15 ppm (35 mg/m³) OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

Section 16 - Additional Information

MSDS Creation Date: 7/21/1999

Revision #6 Date: 6/12/2002

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.