1. PRODUCT AND COMPANY IDENTIFICATION

Product:	**Acetic Acid, Glacial**
Product Number(s):	PF001, PF002
CAS#:	64-19-7
Synonyms:	Ethanoic Acid; Methanecarboxylic Acid; Acetic Acid
Manufacturer:	Pioneer Forensics, LLC 804 E. Eisenhauer Blvd. Loveland, CO 80537 Ph: (970) 292-8487
Emergency Number:	(800) 255-3924 (CHEM-TEL)
Customer Service:	(970) 292-8487

2. HAZARDS IDENTIFICATION

Emergency Overview: DANGER! Flammable liquid and vapor. Easily ignited by heat, spark or flames. Corrosive. Causes severe burns to skin, eyes, and digestive tract. Mist or vapor extremely irritating to eyes and respiratory tract.

Safety Ratings: Health: 3, Severe; Flammability: 2, Moderate; Reactivity: 1, Slight; Contact: 4, Extreme

OSHA Regulatory Status: This product is considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Acute Health Effects:

Routes of Exposure: Inhalation, ingestion, skin contact, eye contact

Inhalation: Corrosive. May cause damage to mucous membranes in nose, throat, lungs and bronchial system.

Ingestion: Corrosive. May produce burns to the lips, oral cavity, upper airway, esophagus and digestive tract.

Skin Contact: Corrosive. Causes severe burns.

Eye Contact: Corrosive. Causes severe burns. May cause eye damage, impaired sight or blindness.

Target Organs: Skin, lungs, respiratory system, eyes

Chronic Health Effects: Corrosive. Prolonged contact causes serious tissue damage.

ɛated or prolonged exposure to the substance can produce target
ons with pre-existing skin disorders or eye problems may be more
effects of the substance.

Potential Environmental Effects: Harmful to aquatic organisms. May affect the acidity (pH) of water lead :ts on aquatic organisms.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Components	CAS#	Chemical Formula	Formula Weight	Hazardous	% by Weight
Acetic Acid	64-19-7	$C_2H_4O_2$	60.05	Yes	>99.7

4. FIRST AID MEASURES

First Aid Procedures:

Inhalation: Remove to fresh air. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Get medical attention immediately.

Ingestion: Do not induce vomiting. If vomiting occurs, keep head low so that vomit does not enter lungs. Never give anything by mouth to an unconscious person. GET MEDICAL ATTENTION IMMEDIATELY.

Skin Contact: Flush affected area with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention immediately.

Eye Contact: Check for and remove contact lenses. Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

General Advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

Notes to Physician: Treat symptomatically. Keep victim under observation.

5. FIRE FIGHTING MEASURES

NFPA Ratings: Health: 3 Flammability: 2 Reactivity: 0

Flammable Properties: HIGHLY FLAMMABLE! Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Heat may cause sealed containers to explode.

Flash Point: 39° C (103° F) Closed Cup

Auto-ignition Temp: 426° C (799° F)

Flammable Limits in Air (% by volume): Lower Explosion Limit: 4%
Upper Explosion Limit: 19.9%

Suitable Extinguishing Media: Water, dry powder, foam, carbon dioxide

Unsuitable Extinguishing Media: Do not use a solid (straight) water stream as it may scatter and spread fire.

on monoxide, carbon dioxide

Products:

Specific Hazards: Can be ignited easily by heat, sparks, or flame and burns vigorously. A vapor-air mixtures are explosive within flammable limits noted above. S may explode when heated or involved in fire. Vapor may accumulate in container headspace resulting in flammability hazard. Material is sensitive to static discharge.

Special Protective Equipment For Firefighters: As in any fire, wear MSHA/NIOSH approved (or equivalent) self-contained positive pressure or pressure-demand breathing apparatus and full protective gear.

Specific Methods: Use water spray to cool unopened containers. Cool containers exposed to flames with flooding quantities of water until well after the fire is out. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Move containers from fire area if you can do so without risk. Some of these materials, if spilled, may evaporate leaving a flammable residue. In the event of fire and/or explosion do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Ventilate area of leak or spill. Isolate hazard area and keep unnecessary and unprotected personnel away from the area of the leak or spill. Keep upwind. Keep out of low areas. Wear appropriate personal protective equipment as specified in the Exposure Control and Personal Protection Section 8. Avoid contact with eyes, skin, and clothing. Pay attention to flashback. Take precautionary measures against static discharges.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. In case of large spill, dike if needed.

Methods for Containment: Remove all sources of ignition. Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas. Dike the spilled material, where this is possible.

Methods for Cleaning Up: Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded. Absorb spill with an inert material (e.g. vermiculite, dry sand, earth, cloth, fleece), and place in a suitable non-combustible container for reclamation or disposal. Do not use combustible materials, such as sawdust. Clean contaminated surface thoroughly. Neutralize spill area and washings with soda ash or lime. Never return spills in original containers for re-use. Clean up in accordance with all applicable regulations.

7. HANDLING AND STORAGE

Handling: Do not handle or open near flame, sources of heat, or sources of ignition. Protect material from direct sunlight. Wear personal protective equipment (see section 8). Use only in well-ventilated areas. Provide sufficient air exchange and/or exhaust in work rooms. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Do not ingest. When using, do not eat, smoke, or drink. Take precautionary measures against static discharge. Keep away from incompatible materials. Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquids). Observe all warnings and precautions listed for the product Use caution when combining with water. DO NOT add water to acid. ALWAYS add acid to water while stirring to prevent release of heat, steam, and fumes.

in a cool, dry, ventilated area. Store away from flame, sources of
incompatible materials. Store in original container. Keep containers tig
upright. Keep away from food, drink and animal feedingstuffs. Keep ou
children. Ground container and transfer equipment to eliminate static e
Comply with all national, state, and local codes pertaining to the storag
dispensing, and disposal of flammable liquids.

8. EXPOSURE CONTROL AND PERSONAL PROTECTION

Exposure Limits:

ACGIH:	TWA:	10 ppm
	STEL:	15 ppm
OSHA:	PEL:	10 ppm
		25 mg/m^3

Engineering Controls: Ensure adequate ventilation. 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. Explosion proof exhaust ventilation should be used.

Personal Protective Equipment:

Eye/Face Protection: Wear safety glasses with side shields or goggles and a face shield.

Skin Protection: Wear appropriate chemical resistant clothing (with long sleeves) and appropriate chemical resistant gloves.

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. Respirator type: Chemical respirator with acid gas cartridge. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

General Hygiene Considerations: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Transparent
Color:	Colorless
Odor:	Strong, vinegar-like
Molecular Formula:	$C_2H_4O_2$
Molecular Weight:	60.05
pH:	2.4 (1.0 M solution)
Specific Gravity:	1.05
Freezing/Melting Point:	16.6 °C (61.9 °F)
Boiling Point:	118.1 °C (244.6 °F)
Flash Point:	39 °C (103° F) Closed Cup
Auto Ignition Temperature:	426 °C (799° F)
Flammable Limits in Air (% by Volume):	

Solubility:	Miscible with water
Vapor Pressure:	2.09 kPa at 25°C
Vapor Density:	2.1
Percent Volatile:	100 %
Odor threshold (ppm):	0.48 ppm
Evaporation Rate:	0.97 BuAc
Partition Coefficient (n-octanol/water):	-0.17

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions. This substance is hygroscopic and will absorb water by contact with the moisture in the air.

Conditions to Avoid: Heat, flames, sparks, ignition sources, incompatibles, moisture

Incompatible Materials: Oxidizing agents, peroxides, caustics, glycol, metals

Hazardous Decomposition Products: Carbon dioxide and carbon monoxide may form when heated to decomposition.

Possibility of Hazardous Reactions: Can react vigorously, violently or explosively with incompatible materials listed above.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological Data:

Oral Rat LD50:	3.31 g/kg
Skin Rabbit LD50:	1060 mg/kg
Inhalation Rat LC50:	11.4 mg/L 4H

Acute Effects: Strongly corrosive. May cause deep tissue damage.

Local Effects: Causes severe burns.

Sensitization: Not a skin sensitizer.

Chronic Effects: Corrosive. Prolonged or repeated skin contact causes serious tissue damage.

Carcinogenic Effects: This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Skin Corrosion/Irritation: Corrosive to skin and eyes.

Epidemiology: No epidemiological data is available for this product.

Mutagenicity: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Neurological Effects: No information found.

Reproductive Effects: Contains no ingredient listed as toxic to reproduction.

ata available to indicate product or any components present at gre
e birth defects.

Target Organs and Symptoms: Corrosive effects.

12. ECOLOGICAL INFORMATION

Ecotoxicological Data: EC50 Water flea (Daphnia magna): 65 mg/L 48 H
LC50 Bluegill (Lepomis macrochirus): 75 mg/L 96 H

Ecotoxicity: Harmful to aquatic life. May affect the acidity (pH) of water leading to harmful effects on aquatic organisms.

Environmental Effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Persistence and Degradability: Expected to be readily biodegradable.

Partition Coefficient (n-octanol/water): -0.17

13. DISPOSAL INFORMATION

Disposal Instructions: Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. All wastes must be handled in accordance with local, state and federal regulations.

Contaminated Packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

Waste Codes: D001: Waste Flammable material with a flash point < 140 °F

14. TRANSPORT INFORMATION

DOT:

UN Number: UN2789

Proper Shipping Name: Acetic Acid, Glacial

Hazard Class: 8, (3)

Packaging Group: II

ERG Number: 132

15. REGULATORY INFORMATION

U.S. Federal Regulations:

OSHA: This product is considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Inventory: Acetic Acid, Glacial

Sections 311/312:	Hazard Categories	List (Yes/No)
	Section 311 – Hazardous Chemical	Yes
	Immediate Hazard	Yes
	Delayed Hazard	No
	Fire Hazard	Yes
	Pressure Hazard	No
	Reactivity Hazard	No

CERCLA: Acetic Acid, Glacial: 5000 lbs

International Inventories:

Country(s) or Region	Inventory Name	On Inventory (Yes/No)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*A "Yes" indicates that the listed component(s) of this product comply with the inventory requirements administered by the governing country(s)

16. OTHER INFORMATION

Product Use: Laboratory and/or field reagent

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