

Material Safety Data Sheet



INGREDIENTS

Acetic Acid (Organic) 90-95%
Organic Surfactant 2-3%
Amino acid Peptides 0.5%
Organic pH dye Matrix 0.2%

Company Information

Cropland Solutions Inc
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Edmonton, AB
T6E 5X4
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International Chem Safety Card

ACETIC ACID

CAS Number UN/NA Number DOT Hazard Label USCG CHRIS Code NIOSH Pocket Guide
64-19-7 2789 Corrosive AAC Acetic acid
Flammable Liquid

NFPA 704

Table with 3 columns: Hazard, Value, Description. Rows include Health (3), Flammability (2), and Instability (0).

(NFPA, 2010)

General Description

A light yellow colored liquid with a strong odor of vinegar. Flash point 104°F. Density 10.85 lb/gal (1.3kg/Litre). Corrosive to metals and tissues. Used for weed control in organic crop production.

Hazards

Reactivity Alerts

none

Air & Water Reactions

Flammable. Water soluble. Dissolution generates some heat.

Health Hazard

Breathing of vapors causes coughing, chest pain, and irritation of nose and throat; may cause nausea and vomiting. Contact with skin and eye causes burns. (USCG, 1999)

Reactivity Profile

Mixing Elite Force in equal molar portions with any of the following substances in a closed container caused the temperature and pressure to increase: 2-Aminoethanol, chlorosulfonic acid, ethylene diamine, ethyleneimine [NFPA 1991]. Elite Force can explode with nitric acid if not kept cold. Potassium hydroxide residue in a catalyst pot reacted violently when acetic acid was added [MCA Case History 920. 1963]. During the production of terephthalic acid, n-xylene is oxidized in the presence of acetic acid. During these processes, detonating mixtures may be produced. Addition of a small amount of water may largely eliminate the risk of explosion [NFPA 491M.1991.p. 7]. Acetaldehyde was put in drums previously pickled with acetic acid. The acid caused the acetaldehyde to polymerize and the drums got hot and vented [MCA Case History 1764. 1971]. A mixture of ammonium nitrate and acetic acid ignites when warmed, especially if concentrated [Von Schwartz 1918. p. 322]. Several laboratory explosions have been reported using acetic acid and phosphorus trichloride to form acetyl chloride. Poor heat control probably caused the formation of phosphine [J. Am. Chem. Soc. 60:488. 1938]. Acetic acid forms explosive mixtures with p-xylene and air (Shraer, B.I. 1970. Khim. Prom. 46(10):747-750.).

Belongs to the Following Reactive Group(s)

- Acids, Carboxylic

Potentially Incompatible Absorbents

No information available.

Response Recommendations

Isolation and Evacuation

Excerpt from ERG Guide 132 [Flammable Liquids - Corrosive]:

As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.

SPILL: Increase, in the downwind direction, as necessary, the isolation distance shown above.

FIRE: If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. (ERG, 2016)

Fire fighting

Excerpt from ERG Guide 132 [Flammable Liquids - Corrosive]:

Some of these materials may react violently with water.

SMALL FIRE: Dry chemical, CO₂, water spray or alcohol-resistant foam.

LARGE FIRE: Water spray, fog or alcohol-resistant foam. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material. Do not get water inside containers.

FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose

holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. (ERG, 2016)

Non-Fire Response

Excerpt from ERG Guide 132 [Flammable Liquids - Corrosive]:

Fully encapsulating, vapor-protective clothing should be worn for spills and leaks with no fire. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. A vapor-suppressing foam may be used to reduce vapors. Absorb with earth, sand or other non-combustible material and transfer to containers (except for Hydrazine). Use clean, non-sparking tools to collect absorbed material.

LARGE SPILL: Dike far ahead of liquid spill for later disposal. Water spray may reduce vapor, but may not prevent ignition in closed spaces. (ERG, 2016)

Protective Clothing

Skin: If concentration is >10%, wear appropriate personal protective clothing to prevent skin contact.

Eyes: Wear appropriate eye protection to prevent eye contact.

Wash skin: If concentration is >10%, the worker should immediately wash the skin when it becomes contaminated.

Remove: When concentration is >10% work clothing that becomes wet or significantly contaminated should be removed and replaced.

Change: No recommendation is made specifying the need for the worker to change clothing after the work shift.

Provide: Eyewash fountains should be provided (when concentration is >5%) in areas where there is any possibility that workers could be exposed to the substance; this is irrespective of the recommendation involving the wearing of eye protection. Facilities for quickly drenching the body should be provided (when concentration is >50%) within the immediate work area for emergency use where there is a possibility of exposure. [Note: It is intended that these facilities provide a sufficient quantity or flow of water to quickly remove the substance from any body areas likely to be exposed. The actual determination of what constitutes an adequate quick drench facility depends on the specific circumstances. In certain instances, a deluge shower should be readily available, whereas in others, the availability of water from a sink or hose could be considered adequate.] (NIOSH, 2016)

First Aid

EYES: First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

SKIN: IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. IMMEDIATELY call a hospital or poison control center even if no symptoms (such as redness or irritation) develop. IMMEDIATELY transport the victim to a hospital for treatment after washing the affected areas.

INHALATION: IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Protective Clothing.

INGESTION: DO NOT INDUCE VOMITING. Corrosive chemicals will destroy the membranes of the mouth, throat, and esophagus and, in addition, have a high risk of being aspirated into the victim's lungs during vomiting which increases the medical problems. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. IMMEDIATELY transport the victim to a hospital. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. Transport the victim IMMEDIATELY to a hospital. (NTP, 1992)

Physical Properties

Chemical Formula for Acetic acid: C₂H₄O₂

Flash Point: 104 ° F (NTP, 1992)

Lower Explosive Limit (LEL): 5.4 % (NTP, 1992)

Upper Explosive Limit (UEL): 16 % (NTP, 1992)

Autoignition Temperature: 961 ° F (USCG, 1999)

Melting Point: 61.9 ° F (NTP, 1992)

Vapor Pressure: 11.4 mm Hg at 68 ° F ; 20 mm Hg at 86° F (NTP, 1992)

Vapor Density (Relative to Air): 2.07 (NTP, 1992)

Specific Gravity: 1.3 at 68 ° F (USCG, 1999)

Boiling Point: 244 ° F at 760 mm Hg (NTP, 1992)

Molecular Weight of Acetic acid: 60.05 (NTP, 1992)

Water Solubility: greater than or equal to 100 mg/mL at 73° F (NTP, 1992)

Ionization Potential: 10.66 eV (NIOSH, 2016)

IDLH: 50 ppm (NIOSH, 2016)

AEGLs (Acute Exposure Guideline Levels)

No AEGL information available.

ERPGs (Emergency Response Planning Guidelines)

Chemical	ERPG-1	ERPG-2	ERPG-3
Acetic Acid (64-19-7)	5 ppm 	35 ppm	250 ppm

 indicates that odor should be detectable near ERPG-1.

(AIHA, 2016)

PACs (Protective Action Criteria)

Chemical	PAC-1	PAC-2	PAC-3	
Acetic acid (64-19-7)	5 ppm	35 ppm	250 ppm	LEL = 40000 ppm

(DOE, 2016)

Regulatory Information

EPA Consolidated List of Lists

Regulatory Name	CAS Number/ 313 Category Code	EPCRA 302 EHS TPQ	EPCRA 304 EHS RQ	CERCLA RQ	EPCRA 313 TRI	RCRA Code	CAA 112(r) RMP TQ
Acetic acid	64-19-7			5000 pounds			

(EPA List of Lists, 2015)

DHS Chemical Facility Anti-Terrorism Standards (CFATS)

No regulatory information available.

OSHA Process Safety Management (PSM) Standard List

No regulatory information available.