

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: Eastman(TM) Dilute Acetic Acid, 80%

Product No.: EAN 970013. P1178300

Additional identification

Chemical name: acetic acid
CAS-No.: 64-19-7

Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Solvent

Uses advised against: None known.

Details of the supplier of the safety data sheet**Manufacturer / Supplier**

Eastman Chemical Company
200 South Wilcox Drive
Kingsport, TN 37660-5280 US
+14232292000

Visit our website at www.EASTMAN.com or email emnmsds@eastman.com

Emergency telephone number:

For emergency health, safety, and environmental information, call 1-423-229-4511 or 1-423-229-2000.

For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300 or call 423-229-2000.

SECTION 2: Hazards identification

Hazard Classification:**Physical Hazards**

Flammable liquids Category 4

Health Hazards

Skin Corrosion/Irritation Category 1B

Serious Eye Damage/Eye Irritation Category 1

OSHA Specified Hazards: not applicable

Warning label items including precautionary statement:

Pictogram:



Signal Words: DANGER!

Hazard Statement(s): H227: Combustible liquid.
H314: Causes severe skin burns and eye damage.

Precautionary Statement:

Prevention: P243: Take precautionary measures against static discharge.
P264: Wash hands thoroughly after handling.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response: P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P363: Wash contaminated clothing before reuse.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310: Immediately call a POISON CENTER/doctor/...
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Disposal: P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC): None known.

SECTION 3: Composition/information on ingredients

Substances / Mixtures

General information:

Chemical name	Concentration	Additional identification	Notes
acetic acid	50 - 80%	CAS-No.: 64-19-7	#
water	20 - 50%	CAS-No.: 7732-18-5	

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

This substance has workplace exposure limit(s).

SECTION 4: First aid measures

Description of first aid measures

Inhalation:	Move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention if symptoms persist.
Skin contact:	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.
Ingestion:	Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed:	May irritate and cause redness and pain.
Indication of any immediate medical attention and special treatment needed	
Hazards:	None known.
Treatment:	Treat symptomatically.

SECTION 5: Firefighting measures

General Fire Hazards:	Combustible liquid and vapor.
Extinguishing media	
Suitable extinguishing media:	Water spray. Dry chemical. Carbon Dioxide. Alcohol foam.
Unsuitable extinguishing media:	None known.
Special hazards arising from the substance or mixture:	Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations.
Advice for firefighters	
Special fire fighting procedures:	Water may be ineffective in fighting the fire. Use water spray to keep fire-exposed containers cool.
Special protective equipment for fire-fighters:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: Accidental release measures

**Personal precautions,
protective equipment and
emergency procedures:**

Wear appropriate personal protective equipment.

Environmental Precautions:

Avoid release to the environment.

**Methods and material for
containment and cleaning
up:**

Eliminate sources of ignition. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Large Spillages: Use water spray to disperse vapors and dilute spill to a nonflammable mixture. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

Notification Procedures:

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

SECTION 7: Handling and storage:**Precautions for safe handling:**

Avoid breathing mists or vapors. Do not get in eyes, on skin, on clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.

**Conditions for safe storage,
including any
incompatibilities:**

Keep container tightly closed and in a well-ventilated place.

Specific end use(s):

Solvent

SECTION 8: Exposure controls/personal protection**Control Parameters****Occupational Exposure Limits**

Country specific exposure limits have not been established or are not applicable unless listed below.

Chemical name	type	Exposure Limit Values	Source
- acetic acid	TWA	10 ppm	US. ACGIH Threshold Limit Values (01 2010)
- acetic acid	STEL	15 ppm	US. ACGIH Threshold Limit Values (01 2010)
- acetic acid	PEL	10 ppm 25 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)

Exposure controls**Appropriate engineering
controls:**

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.

Individual protection measures, such as personal protective equipment**General information:**

Eye bath. Washing facilities. Safety shower.

Eyeface protection: Use safety goggles and face shield in case of splash risk. Wear a full-face respirator, if needed.

Skin protection

Hand Protection: Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

Other: No data available.

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.

Hygiene measures: Observe good industrial hygiene practices.

Environmental Controls: No data available.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state: liquid

Form: liquid

Color: Colorless

Odor: Pungent, vinegar

Odor Threshold: 0.48 ppm

pH: 2.4 (60 g/l,)

Freezing Point: 16.64 °C

Boiling Point: 117.9 °C

Flash Point: 71 - 91 °C

Evaporation Rate: Not determined.

Flammability (solid, gas): not applicable

Flammability Limit - Upper (%)—: 19.9 %(V)

Flammability Limit - Lower (%)—: 4 %(V)

Vapor pressure: 20.79 hPa (25 °C)

Vapor density (air=1): 2.1

Specific Gravity: 1.0446 (25 °C)

Solubility(ies)

Solubility in Water: 602.9 g/l (25 °C)

Solubility (other): No data available.

Partition coefficient (n-octanol/water): log Pow: -0.17

Autoignition Temperature:	463 °C
Decomposition Temperature:	Thermal stability not tested. Low stability hazard expected at normal operating temperatures.
Dynamic viscosity:	No data available.
Kinematic viscosity:	1.011 mm ² /s
Explosive properties:	Not classified.
Oxidizing properties:	Not classified.

SECTION 10: Stability and reactivity

Reactivity:	None known.
Chemical Stability:	Stable
Possibility of Hazardous Reactions:	None known.
Conditions to Avoid:	Heat, sparks, flames.
Incompatible Materials:	Strong oxidizing agents.
Hazardous Decomposition Products:	Carbon Dioxide. Carbon Monoxide.

SECTION 11: Toxicological information

Information on likely routes of exposure

Inhalation:	Severely irritating to respiratory system.
Ingestion:	May cause burns of the gastrointestinal tract if swallowed.
Skin contact:	Causes severe skin burns.
Eye contact:	Causes serious eye damage.

Information on toxicological effects

Oral

Product:	No data available.
Specified substance(s): acetic acid	Oral LD-50: (Rat): 3,320 mg/kg

Dermal

Product:	No data available.
Specified substance(s): acetic acid	Dermal LD-50: (Rabbit): 1,060 mg/kg

Inhalation

Product:	No data available.
Specified substance(s): acetic acid	LC50 (Rat, 4 h): > 16000 ppm

Repeated dose toxicity

Product: No data available.

Specified substance(s):

acetic acid

NOAEL (Rat, Oral Study): 290 mg/kg

NOAEL (Rat, Dermal Study): 30 mg/kg

Skin Corrosion/Irritation

Product: No data available.

Specified substance(s):

acetic acid

(Rabbit, 24 h): Severe

Serious Eye Damage/Eye Irritation

Product: No data available.

Specified substance(s):

acetic acid

(Rabbit): Severe

Respiratory or Skin Sensitization

Product: No data available.

Specified substance(s):

acetic acid

There is no data available to indicate sensitizing potential for this substance.

Carcinogenicity

Product: This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Toxicity to reproduction

Product: No data available.

Developmental toxicity

Product: No data available.

Specified substance(s):

acetic acid

Rat; NOAEL: 345 mg/kg; Ingestion

Germ Cell Mutagenicity**In vitro**

Product: No data available.

Specified substance(s):

acetic acid

Salmonella typhimurium assay (Ames test) (Bacterial Reverse Mutation Assay):
negative

Chromosomal aberration (In vitro Mammalian Chromosome Aberration Test):
negative

In vivo**Product:** No data available.**Specified substance(s):**

acetic acid

Chromosomal aberration Inhalation - vapor (Rat): Read-across from a similar material negative

Specific Target Organ Toxicity - Single Exposure**Product:** No data available.**Specific Target Organ Toxicity - Repeated Exposure****Product:** No data available.**Aspiration Hazard****Product:** No data available.**Other effects:** No data available.**SECTION 12: Ecological information****Ecotoxicity:****Acute hazards to the aquatic environment:****Fish****Product:** No data available.**Specified substance(s):**

acetic acid

LC-50 (Fathead Minnow, 96 h): 300.82 mg/l

Aquatic Invertebrates**Product:** No data available.**Specified substance(s):**

acetic acid

EC-50 (daphnid, 48 h): > 300.82 mg/l

Chronic hazards to the aquatic environment:**Fish****Product:** No data available.**Aquatic Invertebrates****Product:** No data available.**Toxicity to Aquatic Plants****Product:** No data available.**Specified substance(s):**

acetic acid

EC-50 (Alga, 72 h): 300.82 mg/l

Persistence and Degradability**Biodegradation**

Product: No data available.

Specified substance(s):

acetic acid 96 % (20 d) Readily biodegradable

BOD/COD Ratio

Product: No data available.

Bioaccumulative Potential**Bioconcentration Factor (BCF)**

Product: No data available.

Specified substance(s):

acetic acid Bioconcentration Factor (BCF): 3.16

Partition Coefficient n-octanol / water (log Kow)

Product: Log Kow: -0.17 20 °C

Mobility in Soil: No data available.

Known or predicted distribution to environmental compartments

acetic acid Log Koc: 0.062 (QSAR model)

Other Adverse Effects: No data available.

SECTION 13: Disposal considerations**Waste treatment methods**

General information: No data available.

Disposal methods:

Dispose of waste and residues in accordance with local authority requirements. Mix with compatible chemical which is less flammable and incinerate. Since emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near this container.

SECTION 14: Transport information**DOT**

- A. UN Number: UN 2790
B. Proper Shipping Name: Acetic acid solution
C. Hazard class: 8
Subsidiary class(es) —
D. Packing group (if applicable): II
E. Marine Pollutant: Not regulated.

F.Special precautions, which a user needs to be aware of, or needs for transportation and transport methods: —

IMDG

A. UN Number: UN 2790
B. Proper Shipping Name: ACETIC ACID SOLUTION
C. Hazard class: 8
Subsidiary class(es) —
D. Packing group (if applicable): II
EmS No.: F-A, S-B
E.Marine Pollutant: Not regulated.
F.Special precautions, which a user needs to be aware of, or needs for transportation and transport methods: —

IATA

A. UN Number: UN 2790
B. Proper Shipping Name: Acetic acid solution
C. Hazard class: 8
Subsidiary class(es) —
D. Packing Group: II
F.Special precautions, which a user needs to be aware of, or needs for transportation and transport methods: —

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture.:

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

WHMIS (Canada) Status: controlled

WHMIS (Canada) Hazard Classification: B/2, E

SARA 311-312 Hazard Classification(s):

immediate (acute) health hazard
fire hazard

US EPCRA (SARA Title III) Section 313 - Toxic Chemical List

NONE

OSHA: hazardous

TSCA (US Toxic Substances Control Act): All components of this product are listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

DSL (Canadian Domestic Substances List) and CEPA (Canadian Environmental Protection Act): All components of this product are listed on the DSL. Any impurities present in this product are exempt from listing.

AICS / NICNAS (Australian Inventory of Chemical Substances and National Industrial Chemicals Notification and Assessment Scheme): All components of this product are listed on AICS or otherwise comply with NICNAS.

MITI (Japanese Handbook of Existing and New Chemical Substances): All components of this product are listed in the Handbook or have been approved in Japan by new substance notification.

ECL (Korean Toxic Substances Control Act): All components of this product are listed on the Korean inventory or otherwise comply with the Korean Toxic Substances Control Act.

Philippines Inventory (PICCS) : All components of this product are listed on the Philippine inventory or otherwise comply with PICCS.

SECTION 16: Other information

HMIS® Hazard Ratings: Health - 3, Flammability - 2, Chemical Reactivity - 0

HMIS® rating involves data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

Revision Information: Not relevant.

Key literature references and sources for data: No data available.

Training information: No data available.

Issue Date: 01/11/2016

SDS No.:

Disclaimer: This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.