





**Hazard Statement(s):** H226: Flammable liquid and vapor.  
H314: Causes severe skin burns and eye damage.

**Precautionary Statement:**

**Prevention:** P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P233: Keep container tightly closed.  
P240: Ground/bond container and receiving equipment.  
P241: Use explosion-proof electrical/ventilating/lighting/equipment.  
P242: Use only non-sparking tools.  
P243: Take precautionary measures against static discharge.  
P260: Do not breathe dust/fume/gas/mist/vapors/spray.  
P264: Wash hands thoroughly after handling.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.

**Response:** P370+P378: In case of fire; Use water spray, carbon dioxide, dry chemical or alcohol foam for extinction.  
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303+P361+P353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.  
P363: Wash contaminated clothing before reuse.  
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P310: Immediately call a POISON CENTER or doctor/physician.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Storage:** P403+P235: Store in a well-ventilated place. Keep cool.  
P405: Store locked up.

**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	90 - 99%	CAS-No.: 64-19-7	#
water	1 - 10%	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:** Flammable liquid and vapor.
- Extinguishing media**
- Suitable extinguishing media:** Water spray. Dry chemical. Alcohol foam. Carbon Dioxide.
- 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)
	STEL	15 ppm	US. ACGIH Threshold Limit Values (01 2010)
	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.

<b>Eye/face protection:</b>	Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.
<b>Skin protection</b>	
<b>Hand Protection:</b>	Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.
<b>Other:</b>	No data available.
<b>Respiratory Protection:</b>	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.
<b>Hygiene measures:</b>	Observe good industrial hygiene practices.
<b>Environmental Controls:</b>	No data available.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

#### Appearance

<b>Physical state:</b>	liquid
<b>Form:</b>	liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Pungent, vinegar
<b>Odor Threshold:</b>	0.48 ppm
<b>pH:</b>	2.4 (60 g/l, )
<b>Freezing Point:</b>	16.64 °C
<b>Boiling Point:</b>	117.9 °C
<b>Flash Point:</b>	39 °C
<b>Evaporation Rate:</b>	Not determined.
<b>Flammability (solid, gas):</b>	not applicable
<b>Flammability Limit - Upper (%)-:</b>	19.9 %(V)
<b>Flammability Limit - Lower (%)-:</b>	4 %(V)
<b>Vapor pressure:</b>	20.79 hPa (25 °C)
<b>Vapor density (air=1):</b>	2.1
<b>Specific Gravity:</b>	1.0446 (25 °C)
<b>Solubility(ies)</b>	
<b>Solubility in Water:</b>	602.9 g/l (25 °C)
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	log Pow: -0.17
<b>Autoignition Temperature:</b>	463 °C
<b>Decomposition Temperature:</b>	(DTA) No exotherm to 500°C

<b>Dynamic viscosity:</b>	1.056 mPa.s (25 °C)
<b>Kinematic viscosity:</b>	1.011 mm <sup>2</sup> /s
<b>Explosive properties:</b>	Not classified.
<b>Oxidizing properties:</b>	Not classified.

## SECTION 10: Stability and reactivity

<b>Reactivity:</b>	None known.
<b>Chemical Stability:</b>	Stable
<b>Possibility of Hazardous Reactions:</b>	In case of fire, toxic and corrosive gases may be formed.
<b>Conditions to Avoid:</b>	Heat, sparks, flames.
<b>Incompatible Materials:</b>	Strong oxidizing agents.
<b>Hazardous Decomposition Products:</b>	Carbon Dioxide. Carbon Monoxide.

## SECTION 11: Toxicological information

### Information on likely routes of exposure

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

### Information on toxicological effects

#### Oral

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

#### Dermal

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

#### Inhalation

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

#### Repeated dose toxicity

<b>Product:</b>	No data available.
<b>Specified substance(s):</b>	

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**

*Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.*

**DOT**

Reportable Quantity: 2,522 kg (acetic acid)

Possible Shipping Description(s):

UN 2789 Acetic acid solution 8 (3) II

**IMDG - International Maritime Dangerous Goods Code**

Possible Shipping Description(s):

UN 2789 ACETIC ACID SOLUTION 8 (3) II

**IATA**

Possible Shipping Description(s):

UN 2789 Acetic acid solution 8 (3) II

## 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.

## 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:** 5-1-2015

**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.