

**Acetic Acid**

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**1. PRODUCT AND COMPANY IDENTIFICATION**

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**Product Name:** Acetic Acid

**Synonyms/Generic Names:** Acetic Acid, Acido acetic, Ethanoic acid, Ethylic acid, Glacial acetic acid, Methanecarboxylic acid, Vinegar acid.

**SDS Number:** 4.00

**Product Use:** For Educational Use Only

**Manufacturer:** Columbus Chemical Industries, Inc.  
N4335 Temkin Rd.  
Columbus, WI. 53925

**For More Information Contact:** Ward's Science  
5100 West Henrietta Rd.  
PO Box 92912-9012  
Rochester, NY 14692  
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)

**In Case of Emergency Call:** CHEMTREC – 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

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**2. HAZARDS IDENTIFICATION**

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**OSHA Hazards:** Combustible liquid, Target organ effect, Harmful by skin absorption, Corrosive

**Target Organs:** Teeth, Kidneys

**Signal Words:** Danger

**Pictograms:**



**GHS Classification:**

Flammable liquids	Category 3
Acute toxicity, Oral	Category 5
Acute toxicity, Inhalation	Category 3
Acute toxicity, Dermal	Category 4
Skin corrosion	Category 1A
Serious eye damage	Category 1
Skin sensitization	Category 1
Acute aquatic toxicity	Category 3

## GHS Label Elements, including precautionary statements:

### Hazard Statements:

H226	Flammable liquid and vapor.
H303	May be harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H331	Toxic if inhaled.
H402	Harmful to aquatic life.

### Precautionary Statements:

P261	Avoid breathing dust/fume/gas/vapors/mist/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.

### Potential Health Effects

<b>Eyes</b>	Causes eye burns.
<b>Inhalation</b>	May be harmful if inhaled. Material is extremely destructive to the mucous membranes and upper respiratory tract.
<b>Skin</b>	Harmful if absorbed through skin. Causes skin burns.
<b>Ingestion</b>	May be harmful if swallowed.

### NFPA Ratings

<b>Health</b>	3
<b>Flammability</b>	2
<b>Reactivity</b>	0
<b>Specific hazard</b>	Not Available

### HMIS Ratings

<b>Health</b>	3
<b>Fire</b>	2
<b>Reactivity</b>	0
<b>Personal</b>	H

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

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Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Acetic Acid	>99	64-19-7	200-580-7	CH <sub>3</sub> COOH	60.05 g/mol

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## 4. FIRST-AID MEASURES

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<b>Eyes</b>	Rinse with plenty of water for at least 15 minutes and seek medical attention immediately.
<b>Inhalation</b>	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.
<b>Skin</b>	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention immediately.
<b>Ingestion</b>	<b>Do Not Induce Vomiting!</b> Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

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## 5. FIREFIGHTING MEASURES

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<b>Suitable (and unsuitable) extinguishing media</b>	Flammable liquid. Use water spray, dry chemical, carbon dioxide, alcohol foam. Use appropriate media for adjacent fire. Cool unopened containers with water.
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<b>Special protective equipment and precautions for firefighters</b>	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots. Material can react violently with water (spattering and misting) and react with metals to produce flammable hydrogen gas.
<b>Specific hazards arising from the chemical</b>	Emits toxic fumes (carbon oxides) under fire conditions. (See also Stability and Reactivity section).

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## 6. ACCIDENTAL RELEASE MEASURES

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<b>Personal precautions, protective equipment and emergency procedures</b>	Evacuate unprotected personnel from area. Eliminate all ignition sources. See section 8 for recommendations on the use of personal protective equipment.
<b>Environmental precautions</b>	Do not let product enter drains. Any release to the environment may be subject to federal/national or local reporting requirements.
<b>Methods and materials for containment and cleaning up</b>	Neutralize spill with sodium bicarbonate or lime. Absorb neutralized spill with vermiculite or other inert absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste or cleanup materials in accordance with local regulations. Containers, even when empty, will retain residue and vapors.

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## 7. HANDLING AND STORAGE

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### Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of aerosols. Take measures to prevent the buildup of electrostatic charge. No smoking.

### Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Avoid all possible sources of ignition (spark or flame). Keep away from incompatible materials (see section 10 for incompatibilities).

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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**Occupational Exposure Controls:** Ventilation and appropriate grounding of containers.

Component	Exposure Limits	Basis	Entity
Acetic Acid	10 ppm 25 mg/m <sup>3</sup>	PEL	OSHA
	10 ppm 25 mg/m <sup>3</sup>	TLV	ACGIH
	15 ppm 37 mg/m <sup>3</sup>	STEL	ACGIH
	10 ppm 25 mg/m <sup>3</sup>	REL	NIOSH
	15 ppm 37 mg/m <sup>3</sup>	STEL	NIOSH

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

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IDLH: Immediately Dangerous to Life or Health  
 WEEL: Workplace Environmental Exposure Levels  
 CEIL: Ceiling

**Personal Protection**

<b>Eyes</b>	Wear chemical safety glasses with a face shield for splash protection.
<b>Inhalation</b>	If necessary use an approved respirator with acid vapor cartridges. Provide local exhaust, preferably mechanical.
<b>Skin</b>	Wear neoprene or rubber gloves, flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
<b>Other</b>	Not Available

**Other Recommendations**

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling. Have supplies and equipment for neutralization and running water available.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

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Appearance (physical state, color, etc.)	Colorless liquid
Odor	Pungent, vinegar odor
Odor threshold	0.48 ppm
pH	Acidic
Melting point/freezing point	17°C (63°F)
Initial boiling point and boiling range	118°C (244°F)
Flash point	39°C (103°F)
Evaporation rate	0.97
Flammability (solid, gas)	Flammable Liquid.
Upper/lower flammability or explosive limit	Lower: 4% Upper: 19.9%
Vapor pressure	73.3 hPa (55.0 mmHg) at 50°C (122°F) 15.2 hPa (11.4 mmHg) at 20°C (68°F)
Vapor density	2.1 (air=1)
Relative density	1.049 g/cm <sup>3</sup> at 25°C (77°F)
Solubility (ies)	Completely soluble in water
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	463°C (865.4°F)
Decomposition temperature	Not Available

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**10. STABILITY AND REACTIVITY**

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<b>Chemical Stability</b>	Stable
<b>Possibility of Hazardous Reactions</b>	Will not occur.
<b>Conditions to Avoid</b>	Strong oxidizing reagents, metals, strong bases, amines
<b>Incompatible Materials</b>	Material reacts violently with strong oxidizing reagents; material reacts with metals, strong bases, and amines.
<b>Hazardous Decomposition Products</b>	Carbon oxides.

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## 11. TOXICOLOGICAL INFORMATION

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### Acute Toxicity

<b>Skin</b>	LD50 Dermal – rabbit – 1112 mg/kg
<b>Eyes</b>	Not Available
<b>Respiratory</b>	LC50 Inhalation – mouse – 1 hour – 5620 ppm LC50 Inhalation - rat - 4 h - 11.4 mg/l
<b>Ingestion</b>	LD50 Oral – rat – 3310 mg/kg

### Carcinogenicity

<b>IARC</b>	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
<b>ACGIH</b>	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
<b>NTP</b>	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
<b>OSHA</b>	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### Signs & Symptoms of Exposure

<b>Skin</b>	Erythema, blisters, tissue destruction and slow healing, skin blackening, hyperkeratosis, and fissures.
<b>Eyes</b>	Corneal erosion, opacification, iritis, conjunctivitis, and possible blindness.
<b>Respiratory</b>	Inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting.
<b>Ingestion</b>	Hematemesis, bloody diarrhea, edema and/or perforation of the esophagus and pylorus, pancreatitis, hematuria, anuria, uremia, albuminuria, hemolysis, convulsions, bronchitis, pulmonary edema, pneumonia, cardiovascular collapse, shock, and death.

<b>Chronic Toxicity</b>	Not Available
<b>Teratogenicity</b>	Not Available
<b>Mutagenicity</b>	Not Available
<b>Embryotoxicity</b>	Not Available
<b>Specific Target Organ Toxicity</b>	Not Available
<b>Reproductive Toxicity</b>	Not Available
<b>Respiratory/Skin Sensitization</b>	May cause sensitization by skin contact.

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## 12. ECOLOGICAL INFORMATION

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### Ecotoxicity

<b>Aquatic Vertebrate</b>	LC50: 423 mg/l 24 hours [Fish (Goldfish)] 88 ppm 96 hours [Fish (fathead minnow)] 75 ppm 96 hours [Fish (bluegill sunfish)]
<b>Aquatic Invertebrate</b>	LC50: 100 ppm [Daphnia]
<b>Terrestrial</b>	Not Available

<b>Persistence and Degradability</b>	Expected to be biodegradable, long term degradation products may arise.
<b>Bioaccumulative Potential</b>	Not Available
<b>Mobility in Soil</b>	Not Available
<b>PBT and vPvB Assessment</b>	Not Available
<b>Other Adverse Effects</b>	Biochemical Oxygen Demand: 880 mg/g

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### 13. DISPOSAL CONSIDERATIONS

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<b>Waste Residues</b>	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste products or residues.
<b>Product Containers</b>	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

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### 14. TRANSPORTATION INFORMATION

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US DOT	UN2789, Acetic acid, glacial, 8, (3), pg II
TDG	UN2789, ACETIC ACID, GLACIAL, 8, (3), pg II
IMDG	UN2789, ACETIC ACID, GLACIAL, 8, (3), pg II
Marine Pollutant	No
IATA/ICAO	UN2789, Acetic Acid, glacial, 8, (3), pg II

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### 15. REGULATORY INFORMATION

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TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Fire Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 312	Fire Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 313	Not Listed
WHMIS Canada	Class B-3: Combustible liquid with a flash point between 37.8°C and 93.3°C Class E: Corrosive liquid

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### 16. OTHER INFORMATION

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Revision	Date
Revision 1	01/28/2013
Revision 2	06/19/2013

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