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SIGMA-ALDRICH

## Material Safety Data Sheet

Date Printed: 02/04/2003  
Date Updated: 09/08/2002  
Version 1.70

### Section 1 - Product and Company Information

Product Name	ACETIC ACID, GLACIAL, 99.99+%		
Product Number	338826		
Brand	Aldrich Chemical		
Company	Sigma-Aldrich		
Street Address	3050 Spruce Street		
City, State, Zip, Country	SAINT LOUIS, MO 63103 US		
Technical Phone:	314 771 5765	Emergency Phone:	414 273 3850 Ext. 5996
Fax:	800 325 5052		

### Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
ACETIC ACID	64-19-7	No
Formula	C2H4O2	
Synonyms	Acetic acid (ACGIH/OSHA), Acetic acid, glacial, Acide acetique (French), Acido acetico (Italian), Azijnzuur (Dutch), Essigsaeure (German), Ethanoic acid, Ethylic acid, Glacial acetic acid, Kyselina octova (Czech), Methanecarboxylic acid, Octowy kwas (Polish), Vinegar acid	

### Section 3 - Hazards Identification

**Emergency Overview**  
Combustible (USA) Flammable (EU), Corrosive.  
Causes severe burns. Harmful in contact with skin.  
Lachrymator. Target organ(s): Teeth, Kidneys.

**HMIS Rating**  
Health: 3\*      Flammability: 2      Reactivity: 0

**NFPA Rating**  
Health: 3      Flammability: 2      Reactivity: 0

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

### Section 4 - First Aid Measures

**Oral Exposure**  
If swallowed, wash out mouth with water provided person is conscious. Call a physician. Do not induce vomiting.

**Inhalation Exposure**  
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

**Dermal Exposure**  
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

#### Eye Exposure

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

### Section 5 - Fire Fighting Measures

**Flash Point:** 104 °F      40 °C

**Explosion Limits:** Lower: 4 %      Upper: 19.9 %

**Autoignition Temp:** 427 °C

#### Extinguishing Media

**Suitable**  
Carbon dioxide, dry chemical powder, or appropriate foam.

#### Firefighting

**Protective Equipment**  
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

**Specific Hazard(s)**  
Combustible liquid. Emits toxic fumes under fire conditions.

### Section 6 - Accidental Release Measures

**Procedure to be Followed in Case of Leak or Spill**  
Evacuate area.

#### Procedure(s) of Personal Precaution(s)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

#### Methods for Cleaning Up

Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

### Section 7 - Handling and Storage

#### Handling

**User Exposure**  
Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

#### Storage

**Suitable**  
Keep tightly closed. Store in a cool dry place.

### Section 8 - Exposure Controls / PPE

#### Engineering Controls

Safety shower and eye bath. Use only in a chemical fume hood.

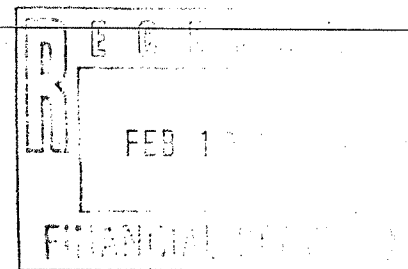
#### Personal Protective Equipment

**Respiratory**  
Government approved respirator.

**Hand**  
Compatible chemical-resistant gloves.

**Eye**  
Chemical safety goggles.

**Other**  
Faceshield (8-inch minimum).





SIGMA-ALDRICH

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Product Name: ACETIC ACID, GLACIAL, 99.99+%  
Product Number: 339826  
Brand: Aldrich Chemical  
Company: Sigma-Aldrich  
Street Address: 3050 Spruce Street  
City, State, Zip, Country: SAINT LOUIS, MO 63103 US  
Technical Phone: 314 771 5765  
Fax: 800 325 5052  
Emergency Phone: 414 273 3850 Ext. 5996

### Section 2 - Composition/Information on Ingredient

Substance Name: ACETIC ACID  
CAS #: 64-19-7  
SARA 313  
NO

Formula: C2H4O2  
Synonyms: Acetic acid (ACGIH;SHA), Acetic acid, glacial, Acide acétique (French), Acido acetico (Italian), Azijnzur (Dutch), Essigsäure (German), Ethanoic acid, Ethylic acid, Glacial acetic acid, Kyselina octova (Czech), Methanecarboxylic acid, Octowy kwas (Polish), Vinegar acid

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HMS Rating: Health: 3  
Flammability: 2  
Reactivity: 0

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

additional chronic hazards present.  
For additional information on toxicity, please refer to Section 11.

### Section 4 - First Aid Measures

Oral Exposure: Wash out mouth with water provided person is conscious. Call a physician. Do not induce vomiting.  
Inhalation Exposure: If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.  
Dermal Exposure: In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

### Section 5 - Fire Fighting Measures

Eye Exposure: In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Flash Point: 104 °F  
40 °C

Explosion Limits: Lower: 4 %  
Upper: 19.9 %

Autoignition Temp: 427 °C

Extinguishing Media: Suitable  
Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
Specific Hazard(s): Combustible liquid. Emits toxic fumes under fire conditions.

### Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill: Evacuate area.  
Procedure(s) of Personal Precaution(s): Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up: Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

### Section 7 - Handling and Storage

Handling: User Exposure: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.  
Storage: Suitable  
Keep tightly closed. Store in a cool dry place.

### Section 8 - Exposure Controls / PPE

Engineering Controls: Safety shower and eye bath. Use only in a chemical fume hood.  
Personal Protective Equipment: Respiratory: Government approved respirator.  
Hand: Compatible chemical-resistant gloves.  
Eye: Chemical safety goggles.  
Other: Faceshield (8-inch minimum).

Blood: Other changes.

Intravenous - Mouse: 525 MG/KG (LD50)

Remarks: Behavioral: Convulsions or effect on seizure threshold.

Skin - Rabbit: 1060 UL/KG (LD50)

#### Irritation Data

Skin - Human: 50 mg 24H

Remarks: Mild irritation effect

Skin - Rabbit: 525 mg

Remarks: Open irritation test

Skin - Rabbit: 50 mg 24H

Remarks: Mild irritation effect

Eyes - Rabbit: 5 mg 30S

Remarks: Rinsed

#### Chronic Exposure - Mutagen

<u>Species</u>	<u>Dose</u>	<u>Cell Type</u>	<u>Mutation test</u>
Human	5 MMOL/L	lymphocyte	Sister chromatid exchange
Mouse	79279 UG/KG	Skin	Unscheduled DNA synthesis
Mouse	1201 MG/KG	Skin	Other mutation test systems
Hamster	10 MMOL/L	ovary	Cytogenetic analysis

#### Chronic Exposure - Reproductive Hazard

<u>Species</u>	<u>Dose</u>	<u>Route of Application</u>	<u>Exposure Time</u>
Rat	700 MG/KG	Oral	(18D POST)
	Result: Effects on Newborn: Behavioral.		
Rat	400 MG/KG	Intratesticular	(1D MALE)
	Result: Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile nonpregnant females).		

#### Section 12 - Ecological Information

##### Acute Ecotoxicity Tests

Test Type	
EC50 Algae	
Time:	Value:
24.0 h	156 mg/l
Test Type	
EC50 Daphnia	
Species	
Daphnia magna	
Time:	Value:
48.0 h	65 mg/l
Test Type	
LC50 Fish	
Species	
Leuciscus idus	
Time:	Value:
48.0 h	410 mg/l
Test Type	
LC50 Fish	
Species	
Cyprinus carpio	
Time:	Value:
48.0 h	49 mg/l
Test Type	
LC50 Fish	
Species	
Pimephales promelas (Fathead minnow)	

Time:

96.0 h

Value:

79 - 88 mg/l

#### Section 13 - Disposal Considerations

##### Appropriate Method of Disposal of Substance or Preparation

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

#### Section 14 - Transport Information

##### DOT

Proper Shipping Name: Acetic acid, glacial [or] Acetic acid solution, [with more than 80 percent acid, by mass]

UN#: 2789

Class: 8

Packing Group: Packing Group II

Hazard Label: Corrosive

Hazard Label: Flammable liquid

PIH: Not PIH

##### IATA

Proper Shipping Name: Acetic acid, glacial

IATA UN Number: 2789

Hazard Class: 8

Packing Group: II

#### Section 15 - Regulatory Information

##### EU Directives Classification

Symbol of Danger: C

Indication of Danger

Corrosive.

Risk Statements R: 10 35

Flammable. Causes severe burns.

Safety Statements S: 26 45

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

##### US Classification and Label Text

Indication of Danger

Combustible (USA) Flammable (EU). Corrosive.

Risk Statements

Causes severe burns. Harmful in contact with skin.

Safety Statements

Keep away from sources of ignition - no smoking. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection.

US Statements

Lachrymator. Target organ(s): Teeth. Kidneys.

##### United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes

##### Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

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**Section 16 - Other Information**

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**Disclaimer**

For R&D use only. Not for drug, household or other uses.

**Warranty**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2003 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.