

MATERIAL SAFETY DATA SHEET

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Version 1.4

Section 1 - Product and Company Information

Product Name ACETIC ANHYDRIDE, REAGENTPLUSTM,
>=99%
Product Number 320102
Brand ALDRICH

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 No
ACETIC ANHYDRIDE	108-24-7	

Formula C4H6O3
Synonyms Acetanhydride * Acetic acid, anhydride (9CI) *
Acetic anhydride (ACGIH:OSHA) * Acetic oxide *
Acetyl anhydride * Acetyl ether * Acetyl oxide *
Anhydride acetique (French) * Anhydrid kyseliny
octove (Czech) * Anidride acetica (Italian) *
Azijnzuuranhydride (Dutch) * Essigsaeureanhydrid
(German) * Ethanoic anhydrate * Octowy bezwodnik
(Polish)
RTECS Number: AK1925000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Combustible (USA) Flammable (EU). Corrosive.
Reacts violently with water. Harmful by inhalation and if
swallowed. Causes burns.
Lachrymator.

HMIS RATING

HEALTH: 3
FLAMMABILITY: 2
REACTIVITY: 2
SPECIAL HAZARD(S): Water reactive

NFPA RATING

HEALTH: 3
FLAMMABILITY: 2
REACTIVITY: 2
SPECIAL HAZARD(S): Water reactive

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

120.2 °F 49 °C Method: closed cup

EXPLOSION LIMITS

Lower: 2.7 % Upper: 10.3 %

AUTOIGNITION TEMP

332 °C

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

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

Unsuitable: Do not use water.

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 an activated carbon adsorbent, take up and place in closed containers. Transport outdoors. 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

Surface Tension	32.7 mN/m	20 °C
Partition Coefficient	N/A	
Decomposition Temp.	136 °C	
Flash Point	120.2 °F 49 °C	Method: closed cup
Explosion Limits	Lower: 2.7 % Upper: 10.3 %	
Flammability	N/A	
Autoignition Temp	332 °C	
Refractive Index	1.39	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water:Slightly. Other Solvents: BENZENE, CHLOROFORM MISCIBLE WITH ALCOHOL, ETHER AC	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Do not allow water to enter container because of violent reaction.

Materials to Avoid: Alcohols, Acids, Oxidizing agents, Bases, Reducing agents, Finely powdered metals.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes burns.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes burns. Lachrymator.

Inhalation: Harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema.

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

TOXICITY DATA

Oral

Rat

1780 mg/kg

LD50

Inhalation

Rat

1,000 ppm

LC50

Skin
Rabbit
4 ML/KG
LD50

IRRITATION DATA

Skin
Rabbit
Remarks: Mild irritation effect
Eyes
Rabbit
Remarks: Severe irritation effect

Skin
Rabbit
540 mg
Remarks: Open irritation test

Section 12 - Ecological Information

ACUTE ECOTOXICITY TESTS

Test Type: EC50 Algae
Time: 24 h
Value: 200 mg/l

Test Type: EC50 Daphnia
Species: Daphnia
Time: 96 h
Value: 55 mg/l

Test Type: LC50 Fish
Species: other fish
Time: 48 h
Value: 265 - 279 mg/l

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. 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 anhydride
UN#: 1715
Class: 8
Packing Group: Packing Group II
Hazard Label: Corrosive
Hazard Label: Flammable liquid
PIH: Not PIH

IATA

Proper Shipping Name: Acetic anhydride
IATA UN Number: 1715
Hazard Class: 8
Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: C

Indication of Danger: Corrosive.

R: 10 20/22 34

Risk Statements: Flammable. Harmful by inhalation and if swallowed. Causes burns.

S: 26 36/37/39 45

Safety Statements: 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. 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: Reacts violently with water. Harmful by inhalation and if swallowed. Causes burns.

Safety Statements: Wear suitable protective clothing, gloves, and eye/face protection. 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.

US Statements: Lachrymator.

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

Section 16 - Other Information

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. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. 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 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.