

# Material Safety Data Sheet

## Acetic anhydride

ACC# 00130

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Acetic anhydride

**Catalog Numbers:** AC149490000, AC149490250, AC222130000, AC222130010, AC222130025, AC222135000, AC400060000, AC400060010, AC400060040, AC423230000, AC423230040, AC423230200, 14949-0010, 14949-0025, 14949-0200, 42323-0010, 42323-0050, 42323-5000, A10-1, A10-100, A10-4, A10-500, A10-500LC, A10RS50, A10SS200, NC9079114

**Synonyms:** Acetic oxide; Acetyl oxide; Ethanoic anhydride; Acetic acid anhydride.**Company Identification:**

Fisher Scientific  
1 Reagent Lane  
Fair Lawn, NJ 07410

**For information, call:** 201-796-7100**Emergency Number:** 201-796-7100**For CHEMTREC assistance, call:** 800-424-9300**For International CHEMTREC assistance, call:** 703-527-3887

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
108-24-7	Acetic anhydride	> 97	203-564-8

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: colorless liquid. Flash Point: 54 deg C.

**Danger!** Causes burns by all exposure routes. **Flammable liquid and vapor.** Harmful if inhaled or swallowed. Lachrymator (substance which increases the flow of tears). Moisture sensitive.

**Target Organs:** Eyes, skin, mucous membranes.**Potential Health Effects**

**Eye:** Eye damage may be delayed. Contact with liquid is corrosive to the eyes and causes severe burns. Lachrymator (substance which increases the flow of tears).

**Skin:** Causes skin burns.

**Ingestion:** Harmful if swallowed. Causes gastrointestinal tract burns. May cause perforation of the digestive tract. Ingestion of large amounts may cause CNS depression.

**Inhalation:** Harmful if inhaled. Causes chemical burns to the respiratory tract. May cause lung damage. Aspiration may lead to pulmonary edema.

**Chronic:** Effects may be delayed. Prolonged skin contact may be painless and cause redness and subsequently a white appearance of the skin accompanied by wrinkling. Skin burns may be

## Section 4 - First Aid Measures

**Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

**Skin:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

**Ingestion:** If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Notes to Physician:** Treat symptomatically and supportively.

## Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Water reactive. Material will react with water and may release a flammable and/or toxic gas. Use water spray to keep fire-exposed containers cool. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Containers may explode in the heat of a fire. Flammable liquid and vapor. May ignite or explode on contact with steam or moist air.

**Extinguishing Media:** Use dry sand or earth to smother fire. If water is the only media available, use in flooding amounts. DO NOT USE WATER! Do NOT use straight streams of water. Contact professional fire-fighters immediately. Cool containers with flooding quantities of water until well after fire is out.

**Flash Point:** 54 deg C ( 129.20 deg F)

**Autoignition Temperature:** 316 deg C ( 600.80 deg F)

**Explosion Limits, Lower:**2.9%

**Upper:** 10.3%

**NFPA Rating:** (estimated) Health: 3; Flammability: 2; Instability: 1

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Do not expose spill to water. Spill may be carefully neutralized with lime (calcium oxide, CaO). Cover with material such as dry soda ash or calcium carbonate and place into a closed container for disposal. A vapor suppressing foam may be used to reduce vapors.

## Section 7 - Handling and Storage

**Handling:** Remove contaminated clothing and wash before reuse. Do not allow water to get into the container because of violent reaction. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Do not breathe dust, mist, or vapor. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep away from heat, sparks and flame. Use with adequate ventilation. Discard contaminated shoes. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Keep from contact with moist air and steam.

**Storage:** Keep away from heat, sparks, and flame. Keep away from sources of ignition. Do not store in direct sunlight. Keep container closed when not in use. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from water. Flammables-area.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Acetic anhydride	5 ppm TWA	200 ppm IDLH	5 ppm TWA; 20 mg/m <sup>3</sup> TWA

**OSHA Vacated PELs:** Acetic anhydride: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

## Section 9 - Physical and Chemical Properties

**Physical State:** Liquid

**Appearance:** colorless

**Odor:** strong odor - pungent odor - acetic odor

**pH:** 3 (10g/L aq sol 20°C)

**Vapor Pressure:** 3.9 mm Hg @68F

**Vapor Density:** 3.5 (air=1)

**Evaporation Rate:**0.46 (n-butyl acetate=1)

**Viscosity:** 0.91mPa.s @ 20 deg C

**Boiling Point:** 140 deg C @ 760mmHg

**Freezing/Melting Point:**Not available.

**Decomposition Temperature:**-73.1 deg C

**Solubility:** Decomposes.

**Specific Gravity/Density:**1.0820g/cm<sup>3</sup>

**Molecular Formula:**C<sub>4</sub>H<sub>6</sub>O<sub>3</sub>

**Molecular Weight:**102.09

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable. However, may decompose if exposed to moist air or water. Substance is readily hydrolyzed. Reacts with water to form corresponding acid.

**Conditions to Avoid:** Ignition sources, contact with water, excess heat, exposure to moist air or water.

**Incompatibilities with Other Materials:** Metals, strong oxidizing agents, reducing agents, bases, alcohols, amines, ammonia, nitrates, nitric acid, permanganates, phenols, sodium hydroxide, hydrogen peroxide, chromium trioxide, potassium hydroxide, perchloric acid, ethanol.

**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide.

**Hazardous Polymerization:** Has not been reported.

## Section 11 - Toxicological Information

**RTECS#:**

**CAS#** 108-24-7: AK1925000

**LD50/LC50:**

CAS# 108-24-7:

Inhalation, rat: LC50 = 1000 ppm/4H;

Oral, rat: LD50 = 1780 mg/kg;

Skin, rabbit: LD50 = 4 mL/kg;

**Carcinogenicity:**

CAS# 108-24-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information found

**Teratogenicity:** No information found

**Reproductive Effects:** No information found

**Mutagenicity:** No information found

**Neurotoxicity:** No information found

**Other Studies:**

## Section 12 - Ecological Information

**Ecotoxicity:** No data available. No information available.

**Environmental:** Terrestrial: Will readily infiltrate downward toward ground water. Aquatic: Will react slowly and become miscible, and will produce an irritating vapor. Mixing takes place and the spill is diluted. In rivers, the principal mixing agent is stream turbulence. Atmospheric: Since acetic anhydride is a relatively non-volatile liquid, direct venting of the vapor to the atmosphere from a hole in a ruptured vessel does not constitute a significant hazard downwind. Only vapor released from a liquid pool spilled on

a ground or water surfaces is important.

**Physical:** Not expected to bioconcentrate or biodegrade.

**Other:** For more information, see "HANDBOOK OF ENVIRONMENTAL FATE AND EXPOSURE DATA."

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	US DOT	Canada TDG
<b>Shipping Name:</b>	ACETIC ANHYDRIDE	ACETIC ANHYDRIDE
<b>Hazard Class:</b>	8	8(3)
<b>UN Number:</b>	UN1715	UN1715
<b>Packing Group:</b>	II	II

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 108-24-7 is listed on the TSCA inventory.

#### Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

#### Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

#### Section 12b

None of the chemicals are listed under TSCA Section 12b.

#### TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

#### CERCLA Hazardous Substances and corresponding RQs

CAS# 108-24-7: 5000 lb final RQ; 2270 kg final RQ

#### SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

#### SARA Codes

CAS # 108-24-7: immediate, delayed, fire, reactive.

**Section 313** No chemicals are reportable under Section 313.

#### Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

#### Clean Water Act:

CAS# 108-24-7 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**

CAS# 108-24-7 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

**California Prop 65**

California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**

C

**Risk Phrases:**

R 10 Flammable.

R 20/22 Harmful by inhalation and if swallowed.

R 34 Causes burns.

**Safety Phrases:**

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**WGK (Water Danger/Protection)**

CAS# 108-24-7: 1

**Canada - DSL/NDSL**

CAS# 108-24-7 is listed on Canada's DSL List.

**Canada - WHMIS**

This product has a WHMIS classification of B3, D1A, D2B, E.

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

**Canadian Ingredient Disclosure List**

CAS# 108-24-7 is listed on the Canadian Ingredient Disclosure List.

**Section 16 - Additional Information**

**MSDS Creation Date:** 10/09/1998

**Revision #17 Date:** 2/08/2008

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