Fisher Scientific

MATERIAL SAFETY DATA SHEET
Acetic anhydride

Section 1 - Chemical Product and Company Identification

MSDS Name: Acetic anhydride

Catalog Numbers: A/0440/PB08, A/0440/PB17, A/0480/08, A/0480/17, A/0480/PB08, A/0480/PB17

Synonyms: Acetic oxide; Acetyl oxide; Ethanoic anhydride; Acetic acid anhydride.

Company Identification: Fisher Scientific UK
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For information in Europe, call: (01509) 231166

Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	%	EINECS#
108-24-7	Acetic anhydride	> 97	203-564-8

Hazard Symbols: C

Risk Phrases: 10 20/22 34

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Flammable. Harmful by inhalation and if swallowed. Causes burns.Corrosive.Moisture sensitive.

Potential Health Effects

Eye: Eye damage may be delayed. Contact with liquid is corrosive to the eyes and causes severe burns. When substance becomes wet or comes in contact with moisture of the mucous membranes, it will cause irritation. May cause chemical conjunctivitis and corneal damage.

Skin: Contact with skin causes irritation and possible burns, especially if the skin is wet or moist. Prolonged skin contact may be painless with reddening of the skin followed be a white appearance of the skin. Skin burns may be delayed. May cause cyanosis of the extremities. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color.

Ingestion: May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns. May cause perforation of the digestive tract. May be harmful if swallowed. Ingestion of large amounts may cause CNS depression. May cause systemic effects.

Inhalation: Harmful if inhaled. Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. Causes chemical burns to the respiratory tract. May cause lung damage. Aspiration may lead to pulmonary edema. Vapors may cause dizziness or suffocation. May cause systemic effects. May cause burning sensation in the chest.

Chronic: Effects may be delayed.

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.

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, vapor, mist, or gas. 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

CAS# 108-24-7:

United Kingdom, WEL - TWA: 0.5 ppm TWA; 2.5 mg/m3 TWA United Kingdom, WEL - STEL: 2 ppm STEL; 10 mg/m3 STEL

United States OSHA: 5 ppm TWA; 20 mg/m3 TWA

Belgium - TWA: 5 ppm VLE; 21 mg/m3 VLE

France - VLE: 5 ppm VLE; 20 mg/m3 VLE

Germany: 5 ppm TWA (exposure factor 1); 21 mg/m3 TWA (exposure factor 1)

Japan: 5 ppm Ceiling; 21 mg/m3 Ceiling

Malaysia: 5 ppm TWA; 21 mg/m3 TWA

Netherlands: 2.5 mg/m3 STEL Netherlands: 2.5 mg/m3 MAC

Spain: 5 ppm VLA-ED; 21 mg/m3 VLA-ED

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

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

Color: colorless

Odor: strong odor - pungent odor - acetic odor

pH: Not available

Vapor Pressure: 3.9 mm Hg @68F

Viscosity: Not available

Boiling Point: 137 deg C (278.60°F)

Freezing/Melting Point: Not available

Autoignition Temperature: 332 deg C (629.60 deg F)

Flash Point: 52 deg C (125.60 deg F)

Explosion Limits: Lower: 2.9%

Explosion Limits: Upper: 10.3%

Decomposition Temperature: Not available

Solubility in water: Decomposes.

Specific Gravity/Density: 1.0820g/cm3

Molecular Formula: C4H6O3

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 Strong oxidizing agents, strong reducing agents, bases, alcohols, metal powders, moisture.

Hazardous Decomposition Products Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization Has not been reported.

Section 11 - Toxicological Information

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

LD50/LC50: RTECS:
CAS# 108-24-7: Inhalation, rat: LC50 = 1000 ppm/4H;
Oral, rat: LD50 = 1780 mg/kg;
Skin, rabbit: LD50 = 4 mL/kg;
.

Carcinogenicity: Acetic anhydride - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

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

Section 13 - Disposal Considerations

Products considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local authority or advice. Empty containers must be decontaminated before returning for recycling.

Section 14 - Transport Information

	IATA	IMO	RID/ADR
Shipping Name:	ACETIC ANHYDRIDE	ACETIC ANHYDRIDE	ACETIC ANHYDRIDE
Hazard Class:	8 (3)	8 (3)	8
UN Number:	1715	1715	1715
Packing Group:	II	II	II

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

Section 15 - Regulatory Information

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

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

US Federal

TSCA

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

Section 16 - Other Information

MSDS Creation Date: 10/09/1998

Revision #14 Date 6/19/2006

Revisions were made in Sections: 9

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