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\*\*\*\* MATERIAL SAFETY DATA SHEET \*\*\*\*

Acetic Anhydride  
00130

\*\*\*\* SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION \*\*\*\*

MSDS Name: Acetic Anhydride

Catalog Numbers:  
AC400060000, AC400060010, AC400060040, S70072, S70078, S71903, A10 1,  
A10 100, A10 4, A10 500, A10-1, A10-100, A10-4, A10-500, A101, A10100, A104  
A10500, A10J4, NC9556617, XXA10207LI

Synonyms:

Acetic Oxide; Acetyl Oxide; Ethanoic Anhydride; Acetic Acid  
Anhydride.

Company Identification: Fisher Scientific  
1 Reagent Lane  
Fairlawn, 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	%	EINECS#
108-24-7	Acetic Anhydride	>97.0	203-564-8

Hazard Symbols: F C  
Risk Phrases: 10 20/22 34

\*\*\*\* SECTION 3 - HAZARDS IDENTIFICATION \*\*\*\*

EMERGENCY OVERVIEW

Appearance: colorless liquid. Flash Point: 126 deg F.  
Danger! Flammable liquid. Harmful if inhaled. Corrosive.  
Water-Reactive. May be harmful if swallowed. May cause central  
nervous system depression. Causes eye and skin burns. Causes  
digestive and respiratory tract burns.  
Target Organs: Central nervous system.

Potential Health Effects

Eye:

Eye damage may be delayed. Contact with liquid is corrosive to the  
eyes and causes severe burns. When substances becomes wet or comes  
in contact with moisture of the mucous membranes, it becomes an  
irritant. 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 by 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.  
Prolonged skin contact may be painless and cause redness and  
subsequently a white appearance of the skin accompanied by wrinkling.  
Skin burns may be delayed.

\*\*\*\* SECTION 4 - FIRST AID MEASURES \*\*\*\*

Eyes:

Get medical aid immediately. Do NOT allow victim to rub or keep eyes  
closed. Extensive irrigation is required (at least 30 minutes).

Skin:

Get medical aid. Immediately flush skin with plenty of soap and  
water for at least 15 minutes while removing contaminated clothing  
and shoes. Wash clothing before reuse. Discard contaminated clothing  
in a manner which limits further exposure. If water-reactive  
products are embedded in the skin, no water should be applied. The  
embedded products should be covered with a light oil.

tion:  
Do NOT induce vomiting. If victim is conscious and alert, give 2-4

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cupfuls of milk or water. Never give anything by mouth to an  
unconscious person. Get medical aid immediately.

Inhalation:

Get medical aid immediately. Remove from exposure to fresh air  
immediately. If breathing is difficult, give oxygen. DO NOT use  
mouth-to-mouth respiration. If breathing has ceased apply artificial  
respiration using oxygen and a suitable mechanical device such as a  
bag and a mask.

Notes to Physician:

Treat symptomatically and

\*\*\*\* 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. 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., dry sand or earth), then  
place into a chemical waste 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  
neutralized with lime. 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.  
Avoid contact with 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	200 ppm IDLH	5 ppm TWA; 20 mg/m3 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 Z89.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

\*\*\*\* SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES \*\*\*\*

Physical State: Liquid  
Appearance: colorless liquid  
Odor: strong odor - pungent odor - acetic odor  
pH: Not available.  
Vapor Pressure: 3.9 mm Hg @68F  
Vapor Density: 3.5 (air=1)  
Evaporation Rate: 0.46 (n-butyl acetate=1)  
Viscosity: Not available.  
Boiling Point: 137 deg C  
Freezing/Melting Point: Not available.  
Autoignition Temperature: 630 deg F ( 332.22 deg C)  
Flash Point: 126 deg F ( 52.22 deg C)  
NFPA Rating: (est.) Health: 3; Flammability: 2; Reactivity: 1  
Explosion Limits, Lower: 2.9%  
Upper: 10.3%  
Decomposition Temperature:  
Solubility:  
Specific Gravity/Density: 1.0820g/cm3  
Molecular Formula: C4H6O3  
Molecular Weight: 102.09

\*\*\*\* SECTION 10 - STABILITY AND REACTIVITY \*\*\*\*

Chemical Stability: Stable. Combines vigorously or explosively with water.  
Conditions to Avoid: Incompatible materials, ignition sources, contact with water, excess heat, exposure to moist air or water.  
Incompatibilities with Other Materials: Acids, alcohols, moisture, bases, strong oxidizing agents, strong reducing agents, metal powders.  
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: CAS# 108-24-7: Inhalation, rat: LC50 =1000 ppm/4H; Oral, rat: LD50 = 1780 mg/kg; Skin, rabbit: LD50 = 4 gm/kg.  
Carcinogenicity: Acetic Anhydride - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
Epidemiology: No information found.  
Teratogenicity: No information found.  
Reproductive Effects: No information found.  
Neurotoxicity: No information found.  
Mutagenicity: No information found.  
Other Studies: 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 \*\*\*\*

Dispose of in a manner consistent with federal, state, and local regulations.  
RCRA P-Series: None listed.  
RCRA U-Series: None listed.

\*\*\*\* SECTION 14 - TRANSPORT INFORMATION \*\*\*\*

US DOT  
Shipping Name: ACETIC ANHYDRIDE  
Hazard Class: 8  
UN Number: UN1715  
Packing Group: II  
Canadian TDG  
Shipping Name: ACETIC ACID SOLUTION  
Hazard Class: 8(9.2)  
UN Number: UN2790

\*\*\*\* 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.  
SARA  
Section 302 (RQ)  
CAS# 108-24-7: final RQ = 5000 pounds (2270 kg)  
Section 302 (TPQ)  
None of the chemicals in this product have a TPQ.  
SARA Codes  
CAS # 108-24-7: acute, chronic, flammable, 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 depleters.  
This material does not contain any Class 2 Ozone depleters.  
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  
Acetic Anhydride can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.  
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: F 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  
United Kingdom Occupational Exposure Limits  
CAS# 108-24-7: OES-United Kingdom, TWA 0.5 ppm TWA; 0.1 mg/m3 TWA  
CAS# 108-24-7: OES-United Kingdom, STEL 2 ppm STEL; 0.4 mg/m3 STEL  
Canada  
CAS# 108-24-7 is listed on Canada's DSL/NDSL List.  
This product has a WHMIS classification of B3, D1B, D2B, E.  
CAS# 108-24-7 is not listed on Canada's Ingredient Disclosure List.  
Exposure Limits

\*\*\*\* SECTION 16 - ADDITIONAL INFORMATION \*\*\*\*

MSDS Creation Date: 10/09/1998 Revision #8 Date: 4/30/2000

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of

merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

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