Flam Cab

MSDS Number: **A0338** * * * * * *Effective Date:* ***05/19/08*** * * * * * *Supercedes:* ***08/18/05***

MSDS **Material Safety Data Sheet**

From: **Mallinckrodt Baker, Inc.**
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS | J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

ACETIC ANHYDRIDE

1. Product Identification

Synonyms: Acetyl oxide; Acetic acid anhydride; Acetic oxide; Ethanoic anhydride
CAS No.: 108-24-7
Molecular Weight: 102.09
Chemical Formula: (CH3CO)2O
Product Codes:
J.T. Baker: 0018
Mallinckrodt: 2420

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Acetic Anhydride	108-24-7	97 - 100%	Yes

3. Hazards Identification

Emergency Overview

DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. FLAMMABLE LIQUID AND VAPOR. WATER REACTIVE. HARMFUL IF SWALLOWED OR INHALED. VAPOR CAUSES RESPIRATORY TRACT IRRITATION AND SEVERE EYE IRRITATION.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe
Flammability Rating: 2 - Moderate
Reactivity Rating: 2 - Moderate
Contact Rating: 4 - Extreme (Corrosive)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: Red Stripe (Store Separately)

Potential Health Effects

Inhalation:
Vapors are corrosive to the mucous membranes of the upper respiratory tract. Exposure to vapors may cause irritation of the nose, throat, and coughing. Exposure to high concentrations may result in severe damage to the lungs. Symptoms of lung edema are often delayed and are aggravated by physical effort.
Ingestion:
Corrosive. Causes a burning pain in the stomach, followed by nausea and vomiting.
Skin Contact:
Corrosive: Does not cause severe burning on contact but can cause delayed reaction burns. If not removed by washing, the skin may become reddened and later turn white and wrinkled. Continued skin contact may cause dermatitis.
Eye Contact:
Corrosive: Contact with the liquid or vapor may produce a burning sensation and tearing. Redness, pain and blurred vision may be followed by permanent eye damage. The appearance of eye burns may be delayed. Irritation effects begin with airborne concentrations as low as 0.36 mg/m3.
Chronic Exposure:
Repeated and prolonged exposure to vapor may cause irritation of the skin and chronic eye irritation.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders or eye problems, or impaired respiratory function may be more susceptible to the effects of the substance.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion:
If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact:
Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:
Flash point: 49C (120F) CC
Autoignition temperature: 316C (601F)
Flammable limits in air % by volume:
lel: 2.7; uel: 10.3
Flammable.
Explosion:
Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Sealed containers may rupture when heated. Vapors can flow along surfaces to distant ignition source and flash back. A violent exothermic reaction occurs with water. Sufficient heat may be produced to ignite combustible materials. Sensitive to static discharge.
Fire Extinguishing Media:
Water spray, dry chemical, alcohol foam, or carbon dioxide. Use water with caution as material reacts with

water.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Use water spray to blanket fire, cool fire exposed containers, and to flush non-ignited spills or vapors away from fire.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Water spray may be used to disperse vapors and dilute spills to nonflammable mixtures, but be aware of the potential for violent reaction with water. Neutralize with soda ash or lime. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Keep away from water. This material is corrosive to steel, galvanized iron, copper and copper alloys. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

-OSHA Permissible Exposure Limit (PEL):
5 ppm (TWA)

-ACGIH Threshold Limit Value (TLV):
5 ppm (TWA);

-NIOSH Recommended Exposure Limit (REL):
5 ppm (Ceiling)

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece respirator with organic vapor cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Rubber and neoprene are recommended materials for personal protective equipment.

Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Clear, colorless liquid.
Odor:
Strong acetic odor; good warning properties.
Solubility:
Slowly soluble in water (reacts)
Specific Gravity:
1.08 @ 15C/4C
pH:
No information found.
% Volatiles by volume @ 21C (70F):
100
Boiling Point:
140C (284F)
Melting Point:
-73C (-99F)
Vapor Density (Air=1):
3.52
Vapor Pressure (mm Hg):
4 @ 20C (68F)
Evaporation Rate (BuAc=1):
0.46

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. Heat will contribute to instability.
Hazardous Decomposition Products:
When heated to decomposition, it emits toxic fumes such as acetic acid and carbon monoxide. Reacts violently with water to yield acetic acid and much heat.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Water, steam, mineral acids, oxidizing materials, alcohols, or amines may cause violent reaction. Contact with strong caustics will cause violent reaction and spattering. Corrosive to copper, brass, bronze, and iron.
Conditions to Avoid:
Heat, flames, ignition sources, water and incompatibles.

11. Toxicological Information

Oral rat LD50: 1780 mg/Kg; inhalation rat LC50: 1000 ppm/4-hour; skin rabbit LD50 4 mL/kg; Irritation data: Skin rabbit, Open Draize, 10 mg/24H mild; Eye rabbit, Open Draize, 250 ug severe

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category

Acetic Anhydride (108-24-7)	No	No	None

12. Ecological Information

Environmental Fate:
When released into the soil, this material is expected to leach into groundwater. When released to water, this material is expected to react and form acetic acid. This material is not expected to significantly bioaccumulate.
Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: ACETIC ANHYDRIDE
Hazard Class: 8, 3
UN/NA: UN1715
Packing Group: II
Information reported for product/size: 40LB

International (Water, I.M.O.)

Proper Shipping Name: ACETIC ANHYDRIDE
Hazard Class: 8, 3
UN/NA: UN1715
Packing Group: II
Information reported for product/size: 40LB

International (Air, I.C.A.O.)

Proper Shipping Name: ACETIC ANHYDRIDE
Hazard Class: 8, 3
UN/NA: UN1715
Packing Group: II
Information reported for product/size: 40LB

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\--------

Ingredient	TSCA	EC	Japan	Australia
Acetic Anhydride (108-24-7)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\--------

		--Canada--		
Ingredient	Korea	DSL	NDSL	Phil.
Acetic Anhydride (108-24-7)				

Ingredient					
Acetic Anhydride (108-24-7)	Yes	Yes	No		Yes

\Federal, State & International Regulations - Part 1\

Ingredient	-SARA 302- RQ	TPQ	List	-SARA 313- Chemical Catg.
Acetic Anhydride (108-24-7)	No	No	No	No

\Federal, State & International Regulations - Part 2\

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Acetic Anhydride (108-24-7)	5000	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: Yes
SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No
Reactivity: Yes (Pure / Liquid)

Australian Hazchem Code: 2P
Poison Schedule: S6
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: **3** Flammability: **2** Reactivity: **1**
Label Hazard Warning:
DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. FLAMMABLE LIQUID AND VAPOR. WATER REACTIVE. HARMFUL IF SWALLOWED OR INHALED. VAPOR CAUSES RESPIRATORY TRACT IRRITATION AND SEVERE EYE IRRITATION.
Label Precautions:
Do not get in eyes, on skin, or on clothing.
Do not contact with water.
Do not breathe vapor.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Keep away from heat, sparks and flame.
Label First Aid:
In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In all cases get medical attention immediately.
Product Use:
Laboratory Reagent.
Revision Information:
No Changes.
Disclaimer:
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