

MSDS Number: **P5883** * * * * * *Effective Date: 08/10/04* * * * * * *Supercedes:*
11/02/01



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



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
Chemtec: 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.

POTASSIUM HYDROXIDE, IN ETHANOL, VOLUMETRIC SOLUTIONS

1. Product Identification

Synonyms: 0.5N Potassium Hydroxide in Ethanol; 0.1N Potassium Hydroxide in Ethanol

CAS No.: Not applicable to mixtures.

Molecular Weight: Not applicable to mixtures.

Chemical Formula: KOH in CH₃CH₂OH

Product Codes: 5644, 5645

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Hazardous		
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Ethyl Alcohol	64-17-5	> 94%
Yes		
Potassium Hydroxide	1310-58-3	< 6%
Yes		

3. Hazards Identification

Emergency Overview

DANGER! FLAMMABLE LIQUID AND VAPOR. CORROSIVE. HARMFUL IF SWALLOWED OR INHALED. CAUSES SEVERE BURNS TO SKIN, EYES, RESPIRATORY TRACT, AND GASTROINTESTINAL TRACT. AFFECTS CENTRAL NERVOUS SYSTEM. AFFECTS LIVER AND REPRODUCTIVE SYSTEM.

J.T. Baker SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Poison)

Flammability Rating: 3 - Severe (Flammable)

Reactivity Rating: 1 - Slight

Contact Rating: 3 - Severe (Corrosive)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: Red (Flammable)

Potential Health Effects

The health effects described below are for ethanol (most significant hazard) and potassium hydroxide.

Inhalation:

Inhalation of vapors can cause irritation to the respiratory tract. Prolonged exposures to high concentration may cause drowsiness, loss of appetite, and inability to concentrate. Potassium Hydroxide: Respiratory tract irritant, may cause serious burns on acute contact. Severe injury is usually avoided by the self-limiting coughing and sneezing symptoms.

Ingestion:

Can cause gastritis, vomiting, central nervous system depression with headache, dizziness, and dullness. Potassium hydroxide: Toxic! Corrosive to mucous membranes and may cause perforation of the esophagus and stomach. Abdominal pain, nausea, vomiting, general gastro-intestinal upset can be expected.

Skin Contact:

May cause irritation. Prolonged contact may produce discoloration. Potassium hydroxide is corrosive! Contact of skin can cause irritation or severe burns and scarring with greater exposures.

Eye Contact:

May cause severe irritation. Splashes may cause temporary pain and blurred vision. Potassium hydroxide is highly corrosive to the eyes! Causes irritation of eyes with tearing, redness, swelling. Greater exposures cause severe burns with possibly blindness

resulting.

Chronic Exposure:

Prolonged skin contact causes drying and cracking of skin. May affect the nervous system. May affect liver, blood, reproductive system. Development of a defatting dermatitis on prolonged contact with potassium hydroxide has been reported. Continued irritation may lead to increased susceptibility to respiratory illness.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems, or impaired liver or 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: 13C (55F) CC

Autoignition temperature: 422C (792F)

Flammable limits in air % by volume:

lcl: 3.3; ucl: 19.0

Flammable. Dangerous fire hazard when exposed to heat or flame. Listed fire data is for Ethyl Alcohol.

- Flash point of mixture is 24C (75F).

Explosion:

Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. Moderate explosion hazard and dangerous fire hazard when exposed to heat, sparks or flames. Sensitive to static discharge.

Fire Extinguishing Media:

Water spray, dry chemical, alcohol foam, or carbon dioxide.

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. Vapors can flow along surfaces to distant ignition source and flash back.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. 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.

J. T. Baker SOLUSORB® solvent adsorbent is recommended for spills of this product.

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. 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:

For Ethyl Alcohol:

- OSHA Permissible Exposure Limit (PEL):
1,000 ppm (TWA)
- ACGIH Threshold Limit Value (TLV):
1,000 ppm (TWA), A4 (Not Classifiable as a Human Carcinogen)

For Potassium Hydroxide [1310-58-3]:

- OSHA Permissible Exposure Limit (PEL):
2 mg/m³ Ceiling
- ACGIH Threshold Limit value (TLV):
2 mg/m³ 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, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134).

Skin Protection:

Gloves and lab coat, apron or coveralls.

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

Information below refers to ethyl alcohol.

Appearance:

Clear, colorless liquid.

Odor:

Pleasant odor.

Solubility:

Infinitely soluble.

Specific Gravity:

ca. 0.79

pH:

No information found.

% Volatiles by volume @ 21C (70F):

> 90 (as water)

Boiling Point:

78.5C (172F)

Melting Point:

< -114C (< -173F)

Vapor Density (Air=1):

1.6 @ 19C

Vapor Pressure (mm Hg):

40 @ 20C (68F)

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage. Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Carbon dioxide and carbon monoxide may form when heated to decomposition. Potassium oxide at very high temperatures.

Hazardous Polymerization:

Will not occur. Will not occur.

Incompatibilities:

Strong oxidizing agents such as nitrates, perchlorates or sulfuric acid. Will attack some forms of plastics, rubber, and coatings. May react with metallic aluminum and generate hydrogen gas.

Conditions to Avoid:

Moisture, heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Toxicological Data:

Ethyl alcohol: Oral rat LD50: 7060 mg/kg; Inhalation rat LC50: 20,000 ppm/10H; investigated as a tumorigen, mutagen and reproductive effector. Irritation data: Draize,skin,open, rabbit: 400mg Mild; eye, rabbit: 500mg/24H, Mild For potassium hydroxide: Oral rat LD50: 273 mg/kg; Investigated as a mutagen. Skin Irritation Data (std Draize, 50 mg/24 H): Human, Severe; Rabbit, Severe. Eye Irritation Data(Rabbit, non-std test,1 mg/24 H, rinse): Moderate.

Reproductive Toxicity:

Ethanol has been linked to birth defects in humans.

Carcinogenicity:

Ethanol has been linked to cancer in humans. Chronic ethanol ingestion is associated with liver cancer. Most industrial ethanol contains denaturants that render it undesirable to drink.

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

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Ingredient Category	---NTP Carcinogen---		IARC
	Known	Anticipated	
Ethyl Alcohol (64-17-5)	No	No	None
Potassium Hydroxide (1310-58-3)	No	No	None

12. Ecological Information

Environmental Fate:

The following statements refer to the environmental fate of ethanol. When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material is expected to

readily biodegrade. When released to water, this material is expected to quickly evaporate. When released into the air, this material is expected to be readily degraded by photolysis. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.

Environmental Toxicity:

The ethanol portion is not expected to be toxic to aquatic life. Potassium Hydroxide:
TLm: 80 ppm/Mosquito fish/ 24 hr./ Fresh water

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in 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. Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. 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: FLAMMABLE LIQUIDS, CORROSIVE, N.O.S.
(CONTAINS ETHANOL AND POTASSIUM HYDROXIDE)

Hazard Class: 3, 8

UN/NA: UN2924

Packing Group: II

Information reported for product/size: 1L

International (Water, I.M.O.)

Proper Shipping Name: FLAMMABLE LIQUIDS, CORROSIVE, N.O.S.
(CONTAINS ETHANOL AND POTASSIUM HYDROXIDE)

Hazard Class: 3, 8

UN/NA: UN2924

Packing Group: II

Information reported for product/size: 1L

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

Proper Shipping Name: FLAMMABLE LIQUIDS, CORROSIVE, N.O.S.
 (CONTAINS ETHANOL AND POTASSIUM HYDROXIDE)

Hazard Class: 3, 8

UN/NA: UN2924

Packing Group: II

Information reported for product/size: 1L

15. Regulatory Information

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-----\Chemical Inventory Status - Part
1\-----
  Ingredient                TSCA  EC   Japan
Australia
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  Ethyl Alcohol (64-17-5)   Yes   Yes   Yes
Yes
  Potassium Hydroxide (1310-58-3)   Yes   Yes   Yes
Yes

-----\Chemical Inventory Status - Part
2\-----
  Ingredient                Korea  DSL   NDSL
Phil.
-----
-----
  Ethyl Alcohol (64-17-5)   Yes   Yes   No
Yes
  Potassium Hydroxide (1310-58-3)   Yes   Yes   No
Yes

-----\Federal, State & International Regulations - Part
1\-----
                                     -SARA 302-   -----SARA
313-----
  Ingredient                RQ     TPQ     List
Chemical Catg.
-----
-----
  Ethyl Alcohol (64-17-5)   No     No     No     No
  Potassium Hydroxide (1310-58-3)   No     No     No     No

-----\Federal, State & International Regulations - Part
2\-----
                                     -RCRA-     -TSCA-
  Ingredient                CERCLA   261.33   8 (d)
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  Ethyl Alcohol (64-17-5)   No       No       No
  Potassium Hydroxide (1310-58-3)   1000    No       No
  
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Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No

Reactivity: No

(Mixture / Liquid)

Australian Hazchem Code: 2[S]E

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: **2** Flammability: **3** Reactivity: **0**

Label Hazard Warning:

DANGER! FLAMMABLE LIQUID AND VAPOR. CORROSIVE. HARMFUL IF SWALLOWED OR INHALED. CAUSES SEVERE BURNS TO SKIN, EYES, RESPIRATORY TRACT, AND GASTROINTESTINAL TRACT. AFFECTS CENTRAL NERVOUS SYSTEM. AFFECTS LIVER AND REPRODUCTIVE SYSTEM.

Label Precautions:

Keep away from heat, sparks and flame.

Keep container closed.

Use only with adequate ventilation.

Do not breathe vapor or mist.

Do not get in eyes, on skin, or on clothing.

Wash thoroughly after handling.

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 swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases get medical attention immediately.

Product Use:

Industrial chemical.

Revision Information:

No Changes.

Disclaimer:

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Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)