

MSDS Number: **L6871** \* \* \* \* \* *Effective Date: 05/26/09* \* \* \* \* \* *Supercedes: 08/17/06*

**MSDS** MATERIAL SAFETY DATA SHEET

**CHEMTREC:** 800-424-9300 (USA)

703-527-3887(Outside USA and Canada)

**CANUTEC:** 613-996-6666

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

NOTE: Use CHEMTREC and CANUTEC  
phone numbers only in the event  
of a chemical emergency.

Emergency Telephone Number: 908-859-2151

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

**J. T. B A K E R**

# LITHIUM HYDROXIDE, MONOHYDRATE

## 1. Product Identification

**Synonyms:** Lithium hydroxide

**CAS No.:** 1310-65-2 (Anhydrous) 1310-66-3 (Monohydrate)

**Molecular Weight:** 41.96

**Chemical Formula:** LiOH . H<sub>2</sub>O

**Product Codes:** P406

## 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Lithium Hydroxide	1310-65-2	90 - 100%	Yes

## 3. Hazards Identification

### Emergency Overview

**POISON! DANGER! CORROSIVE. MAY BE FATAL IF SWALLOWED OR INHALED. CAUSES BURNS TO ANY AREA OF CONTACT.**

**SAF-T-DATA<sup>(tm)</sup>** Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Poison)

Flammability Rating: 0 - None

Reactivity Rating: 2 - Moderate

Contact Rating: 4 - Extreme (Corrosive)

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

Storage Color Code: White (Corrosive)

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### Potential Health Effects

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#### **Inhalation:**

Corrosive. Extremely destructive to tissues of the mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Inhalation may be fatal as a result of spasm inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema.

#### **Ingestion:**

Corrosive. Swallowing can cause severe burns of the mouth, throat, and stomach, leading to death. Can cause sore throat, vomiting, diarrhea. In severe cases, lithium can cause apathy, sluggishness, drowsiness, slurred speech, blurred vision, irregular eye movements, weakness, incoordination, lethargy, heart effects, brain effects, ringing in the ears, tremors and muscle twitching, central nervous system damage, kidney effects, thyroid changes, coma, pulmonary edema, and renal failure.

#### **Skin Contact:**

Dermal contact with alkaline corrosives may produce pain, redness, severe irritation or full thickness burns.

#### **Eye Contact:**

Corrosive. Contact can cause blurred vision, redness, pain and severe tissue burns.

#### **Chronic Exposure:**

Prolonged skin contact causes dermatitis, deep burns and scarring. Chronic exposure may damage the liver or kidneys, and may cause central nervous system depression.

#### **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.

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## 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.

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## 5. Fire Fighting Measures

#### **Fire:**

Not considered to be a fire hazard.

#### **Explosion:**

Not considered to be an explosion hazard.

**Fire Extinguishing Media:**

Use any means suitable for extinguishing surrounding fire.

**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.

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## 6. Accidental Release Measures

Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

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## 7. Handling and Storage

Keep in a tightly closed container. Store in a cool, dry, corrosion-proof, ventilated area away from moisture, sources of heat or ignition, combustibles and oxidizers. Protect against physical damage. Always add the caustic to water while stirring; never the reverse. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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## 8. Exposure Controls/Personal Protection

**Airborne Exposure Limits:**

For Lithium Hydroxide:

- AIHA Workplace Environmental Exposure Limit (WEEL) -  
1 mg/m<sup>3</sup> as LiOH (One-minute TWA, Ceiling), equivalent to 1.75 mg/m<sup>3</sup> as LiOH-HOH.

**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 half facepiece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece particulate respirator (NIOSH type N100 filters) 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. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. 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.

**Eye Protection:**

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

**Appearance:**

White Crystalline solid.

**Odor:**

Odorless.

**Solubility:**

Appreciable (&gt; 10%)

**Specific Gravity:**

1.51

**pH:**

ca. 14.0 (1.0N solution).

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

0

**Boiling Point:**

No information found.

**Melting Point:**

470C (878F)

**Vapor Density (Air=1):**

Not applicable.

**Vapor Pressure (mm Hg):**

Not applicable.

**Evaporation Rate (BuAc=1):**

No information found.

## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage. When exposed to air, lithium hydroxide picks up carbon dioxide and cakes over.

**Hazardous Decomposition Products:**

Emits toxic fumes of Lithium when heated to decomposition.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

For Lithium Hydroxide: water, carbon dioxide, strong acids, aluminum, zinc, and strong oxidizers.

**Conditions to Avoid:**

Moisture, extreme heat, and incompatibles.

## 11. Toxicological Information

Lithium Hydroxide:

Inhalation rat LC50:960 mg/m<sup>3</sup>/4H

Oral rat LD50 :210 mg/kg

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Lithium Hydroxide (1310-65-2)	No	No	None

## 12. Ecological Information

**Environmental Fate:**

No information found.

**Environmental Toxicity:**

No information found.

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal 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.)**

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**Proper Shipping Name:** LITHIUM HYDROXIDE MONOHYDRATE**Hazard Class:** 8**UN/NA:** UN2680**Packing Group:** II**Information reported for product/size:** 1KG**International (Water, I.M.O.)**

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**Proper Shipping Name:** LITHIUM HYDROXIDE MONOHYDRATE**Hazard Class:** 8**UN/NA:** UN2680**Packing Group:** II**Information reported for product/size:** 1KG**International (Air, I.C.A.O.)**

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**Proper Shipping Name:** LITHIUM HYDROXIDE MONOHYDRATE**Hazard Class:** 8**UN/NA:** UN2680**Packing Group:** II**Information reported for product/size:** 1KG

## 15. Regulatory Information

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-----\Chemical Inventory Status - Part 1\-----
Ingredient                                TSCA  EC   Japan  Australia
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Lithium Hydroxide (1310-65-2)            Yes  Yes  Yes    Yes

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-----\Chemical Inventory Status - Part 2\-----
Ingredient                                Korea  DSL  NDSL  Phil.
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Lithium Hydroxide (1310-65-2)            Yes   Yes  No    Yes

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-----\Federal, State & International Regulations - Part 1\-----

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Ingredient	-SARA 302-		-----SARA 313-----	
	RQ	TPQ	List	Chemical Catg.
Lithium Hydroxide (1310-65-2)	No	No	No	No

Ingredient	-----\Federal, State & International Regulations - Part 2\-----		
	CERCLA	-RCRA-	-TSCA-
Lithium Hydroxide (1310-65-2)	No	261.33	8 (d)

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

**Australian Hazchem Code: 2R**

**Poison Schedule:** None allocated.

**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: 0 Reactivity: 0

**Label Hazard Warning:**

POISON! DANGER! CORROSIVE. MAY BE FATAL IF SWALLOWED OR INHALED. CAUSES BURNS TO ANY AREA OF CONTACT.

**Label Precautions:**

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

Do not breathe dust.

Keep container closed.

Use only with adequate ventilation.

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