



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

<b>Material name</b>	<b>LITHIUM HYDROXIDE</b>
<b>Version #</b>	02
<b>Revision date</b>	08-26-2011
<b>CAS #</b>	1310-65-2
<b>Product Codes</b>	<b>J.T.Baker: 26611, P406</b>
<b>Synonym(s)</b>	Lithium hydroxide
<b>Manufacturer</b>	Avantor Performance Materials, Inc.
<b>Address</b>	3477 Corporate Parkway Suite #200 Center Valley, PA 18034 US
<b>Customer Service</b>	855-282-6867
<b>24 Hour Emergency</b>	908-859-2151
<b>Chemtrec</b>	800-424-9300

## 2. Hazards Identification

<b>Emergency overview</b>	DANGER -- POISON Corrosive. Toxic if swallowed. May be fatal if swallowed or inhaled. Causes skin and eye burns.
<b>OSHA regulatory status</b>	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
<b>Potential health effects</b>	
<b>Routes of exposure</b>	Inhalation. Ingestion. Skin contact. Eye contact.
<b>Eyes</b>	Causes eye burns. Corrosive to the eyes and may cause severe damage including blindness. Risk of serious damage to eyes. Do not get this material in contact with eyes.
<b>Skin</b>	Causes skin burns. Causes permanent skin damage (scarring). Do not get this material in contact with skin.
<b>Inhalation</b>	Corrosive. Causes burns. May cause damage to mucous membranes in nose, throat, lungs and bronchial system. This product may be fatal if it is inhaled. Dust extremely irritating to the respiratory tract. Excessive inhalation of this product may cause headache, dizziness, blurred vision, nausea and vomiting. Difficulty in breathing. Coughing. Inhalation of powder/dust may cause lung edema. Do not breathe dust.
<b>Ingestion</b>	Corrosive. Toxic if swallowed. May be fatal if swallowed. Ingestion causes burns of the upper digestive and respiratory tracts. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract. Ingestion of this product may result in central nervous system effects including headache, sleepiness, dizziness, slurred speech and blurred vision. Ingestion of this product may result in central nervous system stimulation including muscle twitching, generalized weakness, difficulty breathing and coma. Cardiac failure and pulmonary edema may develop after ingestion of this material. Nausea, vomiting. May cause damage to the liver and kidneys. Do not ingest.
<b>Chronic effects</b>	Liver and/or kidney damage. Central nervous system depression.
<b>Potential environmental effects</b>	Ecological injuries are not known or expected under normal use.

## 3. Composition / Information on Ingredients

<b>Components</b>	<b>CAS #</b>	<b>Percent</b>
LITHIUM HYDROXIDE	1310-65-2	90 - 100

## 4. First Aid Measures

---

### First aid procedures

<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
<b>Skin contact</b>	Remove and isolate contaminated clothing and shoes. Immediately flush skin with plenty of water. Get medical attention immediately. Get medical attention if irritation develops and persists. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.
<b>Inhalation</b>	Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.
<b>Ingestion</b>	Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth thoroughly. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

### Notes to physician

In case of shortness of breath, give oxygen. Keep victim warm. Symptoms may be delayed.

### General advice

Immediate medical attention is required. In case of shortness of breath, give oxygen. Keep victim warm. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire Fighting Measures

---

### Flammable properties

The product is not flammable. No unusual fire or explosion hazards noted.

### Extinguishing media

**Suitable extinguishing media** Water. Use any media suitable for the surrounding fires.

### Protection of firefighters

**Protective equipment and precautions for firefighters** In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers. Cool containers exposed to flames with water until well after the fire is out.

### Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### Specific methods

In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers.

## 6. Accidental Release Measures

---

### Personal precautions

Ensure adequate ventilation. Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Ventilate closed spaces before entering them. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

### Environmental precautions

Prevent further leakage or spillage if safe to do so.

### Methods for containment

Prevent entry into waterways, sewer, basements or confined areas.

### Methods for cleaning up

Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Following product recovery, flush area with water.

## 7. Handling and Storage

---

### Handling

Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not get this material on clothing. Do not use in areas without adequate ventilation. Wear personal protective equipment. Wash thoroughly after handling. Handle and open container with care. Never pour water into acid/base. Dilute by slowly pouring the product into water while stirring. Considerable heat is generated when water or acid is added, therefore when making solutions always add the caustic to the water or acid with constant stirring.

**Storage**

Store locked up. Store in a well-ventilated place. Keep container tightly closed. Store in corrosive resistant container with a resistant liner. Keep away from heat and sources of ignition. Keep out of the reach of children. Use care in handling/storage.

## 8. Exposure Controls / Personal Protection

---

**Occupational exposure limits**

U.S. - WEEL

**Material****Type****Value**

LITHIUM HYDROXIDE (1310-65-2)

Ceiling

1.0000 mg/m3

**Engineering controls**

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ensure adequate ventilation, especially in confined areas.

**Personal protective equipment****Eye / face protection**

Chemical goggles are recommended. Provide eyewash station and safety shower. Do not get in eyes.

**Skin protection**

Do not get this material in contact with skin. Do not get this material on clothing. Wear chemical protective equipment that is specifically recommended by the manufacturer. Chemical resistant gloves.

**Respiratory protection**

Wear positive pressure self-contained breathing apparatus (SCBA). Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. Do not breathe dust/fume/gas/mist/vapors/spray.

**General hygiene considerations**

Do not get in eyes. Do not get this material in contact with skin. Do not get this material on clothing. When using, do not eat, drink or smoke. Wash hands after handling and before eating. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

**General**

Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations.

## 9. Physical & Chemical Properties

---

**Appearance**

Crystalline.

**Color**

White.

**Odor**

Odorless.

**Odor threshold**

Not available.

**Physical state**

Solid.

**Form**

Solid.

**pH**

14.0 (1.0N solution).

**Melting point**

878 °F (470 °C)

**Freezing point**

Not available.

**Boiling point**

Not available.

**Flash point**

Not available.

**Evaporation rate**

Not available.

**Flammability limits in air, upper, % by volume**

Not available.

**Flammability limits in air, lower, % by volume**

Not available.

**Specific gravity**

1.51

**Relative density**

Not available.

**Solubility (water)**

Appreciable

<b>Partition coefficient (n-octanol/water)</b>	Not available
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Percent volatile</b>	0 % estimated

## 10. Chemical Stability & Reactivity Information

---

<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Conditions to avoid</b>	Moisture. Excessive heat. Incompatible materials.
<b>Incompatible materials</b>	Acids. Oxidizing materials. Zinc. Aluminum. Carbon oxides. Water, moisture.
<b>Hazardous decomposition products</b>	Toxic gas. Lithium.

## 11. Toxicological Information

---

### Toxicological data

<b>Product</b>	<b>Test Results</b>
LITHIUM HYDROXIDE (1310-65-2)	Acute Inhalation LC50 Rat: 960 mg/m3 4.00 Hours Acute Oral LD50 Rat: 210 mg/kg

\* Estimates for product may be based on additional component data not shown.

<b>Acute effects</b>	Causes burns.
<b>Chronic effects</b>	Liver and/or kidney damage. Central nervous system depression.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>Skin corrosion/irritation</b>	Hazardous by OSHA criteria.
<b>Epidemiology</b>	Not available.
<b>Neurological effects</b>	Not available.

## 12. Ecological Information

---

<b>Ecotoxicity</b>	This product has no known eco-toxicological effects.
<b>Environmental effects</b>	Not available.
<b>Persistence and degradability</b>	Not available.
<b>Partition coefficient (n-octanol/water)</b>	Not available

## 13. Disposal Considerations

---

<b>Disposal instructions</b>	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.
------------------------------	--

## 14. Transport Information

---

### DOT

#### Basic shipping requirements:

<b>UN number</b>	UN2680
<b>Proper shipping name</b>	Lithium hydroxide
<b>Hazard class</b>	8
<b>Packing group</b>	II
<b>Additional information:</b>	
<b>Special provisions</b>	IB8, IP2, IP4, T3, TP33
<b>Basic shipping requirements:</b>	
<b>Labels required</b>	8

**Additional information:**

Packaging exceptions 154  
Packaging non bulk 212  
Packaging bulk 240  
ERG number 154

**IATA**

**Basic shipping requirements:**

UN number 2680  
Proper shipping name Lithium hydroxide  
Hazard class 8  
Packing group II

**Additional information:**

ERG code 8L

**IMDG**

**Basic shipping requirements:**

UN number 2680  
Proper shipping name LITHIUM HYDROXIDE  
Hazard class 8  
Packing group II



DOT



IATA



IMDG

**15. Regulatory Information**

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

**CERCLA (Superfund) reportable quantity**

None

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**  
Immediate Hazard - Yes  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**Section 311 hazardous chemical**  
Yes

**Inventory status**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**Saf-T-Data**  
 Health: 3 - Severe (Poison)  
 Flammability: 0 - None  
 Reactivity: 2 - Moderate  
 Contact: 4 - Extreme (Corrosive)  
 Lab Protective Equip: D - GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES  
 Storage Color Code: W - White (Corrosive)

## 16. Labeling Info

---

**Label Hazard Warning** DANGER -- POISON  
 Corrosive. Toxic if swallowed. May be fatal if swallowed or inhaled. Causes skin and eye burns.

**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** Immediately flush eyes with plenty of water for at least 15 minutes. Immediately flush skin with plenty of water. Remove contaminated clothing and shoes. For minor skin contact, avoid spreading material on unaffected skin. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Do not use mouth-to-mouth method if victim inhaled the substance. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Rinse mouth thoroughly. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention immediately.

## 17. Other Information

---

**NFPA ratings**  
 Health: 3  
 Flammability: 0  
 Instability: 0

**Disclaimer**

THE INFORMATION PRESENTED IN THIS MATERIAL SAFETY DATA SHEET (MSDS/SDS) WAS PREPARED BY TECHNICAL PERSONNEL BASED ON DATA THAT THEY BELIEVE IN THEIR GOOD FAITH JUDGMENT IS ACCURATE. HOWEVER, THE INFORMATION PROVIDED HEREIN IS PROVIDED "AS IS," AND AVANTOR PERFORMANCE MATERIALS MAKES AND GIVES NO REPRESENTATIONS OR WARRANTIES WHATSOEVER, AND EXPRESSLY DISCLAIMS ALL WARRANTIES REGARDING SUCH INFORMATION AND THE PRODUCT TO WHICH IT RELATES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION, WARRANTIES OF ACCURACY, COMPLETENESS, MERCHANTABILITY, NON-INFRINGEMENT, PERFORMANCE, SAFETY, SUITABILITY, STABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. THIS MSDS/SDS IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PROPERLY TRAINED PERSON USING THIS PRODUCT, AND IS NOT INTENDED TO BE COMPREHENSIVE AS TO THE MANNER AND CONDITIONS OF USE, HANDLING, STORAGE, OR DISPOSAL OF THE PRODUCT. INDIVIDUALS RECEIVING THIS MSDS/SDS MUST ALWAYS EXERCISE THEIR OWN INDEPENDENT JUDGMENT IN DETERMINING THE APPROPRIATENESS OF SUCH ISSUES. ACCORDINGLY, AVANTOR PERFORMANCE MATERIALS ASSUMES NO LIABILITY WHATSOEVER FOR THE USE OF OR RELIANCE UPON THIS INFORMATION. NO SUGGESTIONS FOR USE ARE INTENDED AS, AND NOTHING HEREIN SHALL BE CONSTRUED AS, A RECOMMENDATION TO INFRINGE ANY EXISTING PATENTS OR TO VIOLATE ANY FEDERAL, STATE, LOCAL, OR FOREIGN LAWS. AVANTOR PERFORMANCE MATERIALS REMINDS YOU THAT IT IS YOUR LEGAL DUTY TO MAKE ALL INFORMATION IN THIS MSDS/SDS AVAILABLE TO YOUR EMPLOYEES.

**Issue date**

08-26-2011

**This data sheet contains changes from the previous version in section(s):**

Exposure Controls / Personal Protection: Respiratory protection  
Other Information: Disclaimer