

# LITHIUM HYDROXIDE

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## 1. Product Identification

**Synonyms:** None  
**CAS No.:** 1310-65-2  
**Molecular Weight:** 23.95  
**Chemical Formula:** LiOH  
**Product Codes:** CHEM-194 and others.

## 2. Composition/Information on Ingredients

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

## 3. Hazards Identification

Emergency overview DANGER — POISON  
Corrosive. Toxic if swallowed. May be fatal if swallowed or inhaled. Causes skin and eye burns.  
OSHA regulatory status This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

### Emergency Overview

SAF-T-DATA<sup>(tm)</sup> Ratings

**Health Rating:** 3 - Severe (Poison)

**Flammability Rating:** 0 - None

**Reactivity Rating:** 2 - Moderate

**Contact Rating:**

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

**Storage Color Code:** White (Corrosive)

### Potential Acute Health Effects:

#### Eyes:

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.

#### Skin:

Causes skin burns. Causes permanent skin damage (scarring). Do not get this material in contact with skin.

**Inhalation:**

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.

**Ingestion:**

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.

**Potential Chronic Health Effects:**

Liver and/or kidney damage. Central nervous system depression. Potential environmental effects Ecological injuries are not known or expected under normal use. Extremely hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Slightly hazardous in case of skin contact (permeator). CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to blood. Repeated or prolonged exposure to the substance can produce target organs damage.

## 4. First Aid Measures

**Eye contact:**

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.

**Skin contact:**

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.

**Inhalation:**

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.

**Ingestion:**

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.

**Suitable extinguishing media:**

Water. Use any media suitable for the surrounding fires.

**Protection of 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

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. Store in a well-ventilated place. Keep container tightly closed. Store in corrosive resistant container with a resistant inliner. 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:

Material Type Value: LITHIUM HYDROXIDE (1310-65-2) Ceiling 1.0000 mg/m<sup>3</sup>

### 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 and Chemical Properties

### Appearance:

Crystalline granular or powder.

Color:

White.

### Odor:

Odorless.

### 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.

### Specific gravity:

1.51

**Relative density:**

Not available.

**Solubility (water):**

Appreciable

**Partition coefficient (n-octanol/water):**

Not available

**Auto-ignition temperature:**

Not available.

**Decomposition temperature:**

Not available.

**Percent volatile:**

0 % estimated

## 10. Stability and Reactivity

**Stability:**

Material is stable under normal conditions.

**Conditions to avoid:**

Moisture. Excessive heat. Incompatible materials.

**Incompatible materials:**

Acids. Oxidizing materials. Zinc. Aluminum. Carbon oxides. Water, moisture.

**Hazardous decomposition products:**

Toxic gas. Lithium.

**Special Remarks on other Toxic Effects on Humans:**

Not available.

## 11. Toxicological Information

**Product Test Results:**

LITHIUM HYDROXIDE (1310-65-2) Acute Inhalation LC50 Rat: 960 mg/m<sup>3</sup> 4.00 Hours

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

**Acute Oral:**

LD<sup>50</sup> Rat: 210 mg/kg

**Acute effects:**

Causes burns.

**Chronic effects:**

Liver and/or kidney damage. Central nervous system depression.

**Carcinogenicity:**

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**Skin corrosion/irritation:**

Hazardous by OSHA criteria.

**Epidemiology:**

Not available.

**Neurological effects:**

Not available.

## 12. Ecological Information

**Ecotoxicity:**

This product has no known eco-toxicological effects.

**Environmental effects:**

Not available.

**Persistence and degradability:**

Not available.

**Partition coefficient (n-octanol/water):**

Not available

## 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

**U.S. DOT Basic shipping requirements:**

UN number UN2680

**Proper shipping name:** Lithium hydroxide

Hazard class 8

Packing group II

**Additional information:**

Special provisions IB8, IP2, IP4, T3, TP33

**Basic shipping requirements:**

Labels required 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

## 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

## 16. Other Information

### Label Precautions:

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.

### Product Use:

Laboratory Reagent and Consumer Hobby.

### Revision Information:

None

### Disclaimer:

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