

## 1. IDENTIFICATION

<b>Product / Trade Name:</b>	<b>Lithium Hydroxide Monohydrate</b>
<b>CAS No.:</b>	<b>1310-66-3</b>
Other name(s):	Battery Grade Lithium Hydroxide, Lithium Hydroxide hydrate
Product preparation:	Hydrometallurgical processing
Use of the product:	Used in the preparation of lithium-ion battery materials
Producer:	Piedmont Lithium Ltd.
Address:	32 North Main Street, Suite 100 Belmont, NC 28012, USA Tel: (704) 461-8000 email: info@piedmontlithium.com website: https://www.piedmontlithium.com

## 2. HAZARDS IDENTIFICATION

**This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Acute Toxicity:	Category 4
Skin corrosion/irritation:	Category 1 B
Serious eye damage / irritation:	Category 1

Signal Word:	<b>Danger</b>
Hazard Statements:	<b>Harmful if swallowed</b> <b>Causes severe skin burns and eye damage</b>



Precautionary statements:	<b>Prevention</b> Wash face, hands, and any exposed skin thoroughly after handling Do not eat, drink, or smoke when using this product Do not breathe dust/fume/gas/mist/vapors/spray Wear protective gloves/protective clothing/eye protection/face protection
Response:	Immediately call a POISON CENTER or doctor/physician
Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin:	Take off immediately all contaminated clothing. Rinse skin with water/shower Wash contaminated clothing before reuse
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Ingestion:	Rinse mouth, Do NOT induce vomiting
Storage:	Store locked up
Disposal:	Dispose of contents/container to an approved waste disposal plant

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Description of Material: Dry white granular crystals

Major Constituents	CAS No.	Weight %	EU Classification
Lithium Hydroxide Monohydrate	1310-66-3	>99	-

### 4. FIRST AID MEASURES

Eye contact: Flush eyes with water immediately for at least 15 minutes, seek immediate medical attention

Inhalation: For breathing difficulties, remove to fresh air, seek immediate medical attention

Skin Contact: Wash off with water, for at least 15 minutes, remove contaminated clothing, seek immediate medical attention

Ingestion: Do not induce vomiting. Seek immediate medical attention

### 5. FIRE AND IGNITION INFORMATION

Suitable Extinguishing Media: Water spray, carbon dioxide (CO<sub>2</sub>), dry chemicals, chemical foam

Fire / Explosion Hazard: Material is non-combustible. Substance may decompose upon heating to produce toxic fumes. Keep product and empty containers / packaging away from heat and sources of ignition

Specific Hazards: Thermal decomposition can lead to the release of irritant gases / vapors. If possible and safe to do so, remove other materials from fire fighting area

Firefighting Equipment: Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear.

NFPA:

Health	3
Flammability	0
Instability	1
Physical Hazards	N/A

### 6. ACCIDENTAL RELEASE MEASURES

**Released substances must be stopped, if safely possible. Contain with sand, soil, or chemical binding agent.**

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and inhalation of vapors.

Environmental Precautions: See Section 12 for additional ecological information.

Methods for Containment & Clean-Up: Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation

### 7. HANDLING AND STORAGE

Handling: Use only under a chemical fume hood. Wear personal protective equipment. Avoid contact with skin and eyes. Do not breathe dust. Do not breathe vapors or spray mist. Keep containers dry and tightly closed to avoid moisture absorption and contamination. Avoid dust formation.

Storage: Keep in a dry, cool, and well-ventilated place. Keep container tightly closed and in corrosives area.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures: Use only under a chemical fume hood

### Personal Protective Equipment

Eye/face Protection: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection: Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirators if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice.



Do not eat, drink, or smoke in the work area

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Molecular Formula: LiOH.H<sub>2</sub>O  
 Physical State: Solid  
 Appearance: White crystals  
 Odor: Odorless  
 Odor Threshold: No information available  
 pH: 14  
 Melting Point/Range: 462 °C / 863.6 °F  
 Specific Gravity: 1.51  
 Molecular Weight: 41.96 g/mol

## 10. STABILITY AND REACTIVITY

Reactivity / Chemical Stability: Stable product  
 Hazardous Reactions: May react if in contact with other chemicals  
 Conditions to avoid: Incompatible products, exposure to air/water, avoid heat. Avoid dust formation  
 Incompatible materials: Strong oxidizing agents, strong acids, carbon dioxide  
 Hazardous Decomposition: May occur  
 Contact with fire or high temperature should be avoided

## 11. TOXICOLOGICAL INFORMATION

**Causes burns by all exposure routes**

### Acute Toxicity

**Product Information** No acute toxicity information is available for this product

### **Component Information**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Lithium hydroxide monohydrate	368 mg/kg (Rat)	Not listed	LC50 = 0.96 mg/L ( Rat ) 4 h

**Carcinogenicity**

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Lithium hydroxide monohydrate	1310-66-3	Not listed	Not listed	Not listed	Not listed	Not listed

**Product is a corrosive material**

**12. ECOLOGICAL INFORMATION**

No special environmental considerations, however, avoid contamination of surface, ground and sewerage waters.

**13. DISPOSAL CONSIDERATIONS**

Contamination and processing may change waste characteristics and disposal requirements.

Should be disposed of using methods appropriate for dusty materials and in compliance with all applicable laws (Federal, Provincial / State and local laws) as applicable. Minimise contamination with foreign objects. Product and containers should be disposed in such a way as to minimise long term and excessive exposure to surface, ground and sewerage waters.

**14. TRANSPORT INFORMATION**

**DOT**

**UN-No** UN2680  
**Proper Shipping Name** LITHIUM HYDROXIDE  
**Hazard Class** 8  
**Packing Group** II

**TDG**

**UN-No** UN2680  
**Proper Shipping Name** LITHIUM HYDROXIDE  
**Hazard Class** 8  
**Packing Group** II

**IATA**

**UN-No** UN2680  
**Proper Shipping Name** LITHIUM HYDROXIDE  
**Hazard Class** 8  
**Packing Group** II

**IMDG/IMO**

**UN-No** UN2680  
**Proper Shipping Name** LITHIUM HYDROXIDE  
**Hazard Class** 8  
**Packing Group** II

**15. REGULATORY INFORMATION**

**International Inventories**

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Lithium hydroxide monohydrate	-	-	-	-	-		X	X	X	X	-

**Legend:**

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration  
Not applicable

CERCLA Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations Not applicable

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Lithium hydroxide monohydrate	-	X	-	-	-

**U.S. Department of Transportation**

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

See section 2 for Hazards Identification, see section 12 for Ecological Information

Revision frequency: 5 years, review annually or as new information is applicable.

This safety data sheet has been prepared by Piedmont Lithium Ltd. based on available information it believes to be reliable as at the date of issue. This SDS relates only to the specific material identified in this SDS and does not relate to that material's use in combination with any other material or in any process. Piedmont Lithium Ltd. makes no warranties, express or implied, as to the information in this SDS and expressly disclaims all liability in connection with its use. Users should conduct their own investigations to determine the suitability of this SDS for their particular purposes under the laws and regulations applicable to them.