# LITHIUM HYDROXIDE MONOHYDRATE, BATTERY GRADE

**CAS No. 1310-66-3**

## Properties

- **Formula**: LiOH·H₂O
- **Appearance**: White crystals
- **Application**: High purity product suitable for use in production of cathode materials for lithium ion batteries, low noise lubricating greases and other fine chemical formulations

## Product Specifications

<table>
<thead>
<tr>
<th>Component</th>
<th>Guaranteed</th>
<th>LiOH, wt%</th>
<th>CO₂, wt%</th>
<th>Cl, wt%</th>
<th>SO₄, wt%</th>
<th>Ca, wppm</th>
<th>Fe, wppm</th>
<th>Na, wppm</th>
<th>Al, wppm</th>
<th>Cr, wppm</th>
<th>Cu, wppm</th>
<th>K, wppm</th>
<th>Ni, wppm</th>
<th>Si, wppm</th>
<th>Zn, wppm</th>
<th>Heavy metals as Pb</th>
<th>Acid Insolubles, wt%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>56.5</td>
<td>0.35</td>
<td>0.0020</td>
<td>0.010</td>
<td>15</td>
<td>5</td>
<td>20</td>
<td>10</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>0.010</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Other Data

- **Bulk density**: Loose 0.9 g/cm³, Tap 1.0 g/cm³

## Physical Properties

- **Molecular weight**: 41.96
- **Density @ 20°C**: 1.51 g/cm³
- **Standard heat of formation**: -188.9 kcal/mole
- **Standard heat of fusion**: -0.867 kcal/mole
- **Specific heat @ 25°C**: 0.453 cal/g/°C
- **Loses water of hydration**: 100 - 110°C

## Water Solubility

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Weight percent LiOH in saturated solution*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10.7</td>
</tr>
<tr>
<td>20</td>
<td>10.9</td>
</tr>
<tr>
<td>100</td>
<td>14.8</td>
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</tbody>
</table>

* The solid phase in equilibrium with saturated solution is the monohydrate, LiOH·H₂O.
LITHIUM HYDROXIDE MONOHYDRATE, BATTERY GRADE  CAS No. 1310-66-3

**Toxicity/Safety Data**
Causes severe skin burns and eye damage. Harmful if swallowed. Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

*COMPLETE INFORMATION ON TOXICITY AND SAFETY IS CONTAINED IN THE SAFETY DATA SHEET (SDS) AVAILABLE FOR THIS PRODUCT.*

**Handling/Storage/Disposal**
Do not get in eyes, on skin or clothing. Avoid breathing dust. Wash thoroughly after handling. Keep container closed. Store away from acids and water. Dispose of waste according to local and Federal laws and regulations.

**Shipping Containers**
50lb (22.7kg) bags, shipped 40 to a pallet.
100 kg polyethylene-lined fiber drums
Supersacks of discrete weight between 400 and 2200 lb (182 - 1000kg)

**Shipping Limitations**
Shipments of lithium hydroxide are described as "Lithium Hydroxide, UN 2680." All shipments are Hazard Class 8 and require "Corrosive" labels.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Class</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post</td>
<td>Not acceptable</td>
<td></td>
</tr>
<tr>
<td>Parcel, Air</td>
<td>Restricted quantities</td>
<td>(IMDG)</td>
</tr>
<tr>
<td>Sea</td>
<td>Class 8</td>
<td>(IMDG)</td>
</tr>
<tr>
<td>Road, Rail</td>
<td>Class 8.41 b</td>
<td>(RID/ADR)</td>
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