Material Safety Data Sheet
Date Printed: 12/1/2008
Date Updated: 10/11/2007
Version 1.70

Section 1 - Product and Company Information

Product Name: Lithium hydroxide monohydrate, SigmaUltra, 98.5%1.5% (titration)
Product Number: L4533
Brand: Sigma-Aldrich
Company: Sigma-Aldrich
Address: 3050 Spruce Street
City, State, Zip, Country: SANT LOUIS, MO 63103 US
Technical Phone: 800-325-5832
Emergency Phone: 314-776-6555
Fax: 800-325-5092

Section 2 - Composition/Information on Ingredient

Substance Name: LITHIUM HYDROXIDE MONOHYDRATE
CAS #: 1310-86-3
SARA 313: No
EC No: 215-183-4
Annex I Index Number: 

Formula: LIOH\nH\n2O
Synonyms: 

Section 3 - Hazards Identification

Emergency Overview
Toxic (USA) Harmful (EU). Harmful if swallowed. Causes severe burns. Target organ(s): Central nervous system. Cardiovascular system.

HMIS Rating
Health: 3
Flammability: 0
Reactivity: 1

NFPA Rating
Health: 3
Flammability: 0
Reactivity: 1

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure
If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

Inhalation Exposure
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing & shoes. Call a physician.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A

Firefighting
Protective Equipment
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)
Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill
Evacuate area.

Procedure(s) of Personal Protection(s)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up
Sweep up, place in a bag, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling
Do not breathe dust. Do not get in eyes, on skin, or on clothing. Avoid prolonged or repeated exposure.

Storage
Suitable
Keep tightly closed. Store under nitrogen.

Incompatible Materials
Absorb carbon dioxide from air.

Special Requirements
Store under inert gas. Air sensitive.

Section 8 - Exposure Controls / PPE

Engineering Controls
Safety shower and eye bath. Use only in a chemical fume hood.

Personal Protective Equipment
Respiratory
Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate, use a half-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand
Compatible chemical-resistant gloves.

Eye
Chemical safety goggles.

Sigma-Aldrich - L4533
Page 2
General Hygiene Measures
Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Physical State</th>
<th>Color</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Solid</td>
<td>White</td>
<td></td>
</tr>
</tbody>
</table>

Molecular Weight
41.96 AMU

pH
12

BP/MP Range
N/A

MP/MP Range
N/A

Freezing Point
N/A

Vapor Pressure
N/A

Vapor Density
N/A

Saturated Vapor Conc.
N/A

SG/Density
1.31 g/cm³

Bulk Density
N/A

Odor Threshold
N/A

Volatile
N/A

VOC Content
N/A

Water Content
N/A

Solvent Content
N/A

Evaporation Rate
N/A

Viscosity
N/A

Partition Coefficient
N/A

Decomposition Temp.
N/A

Flash Point °F
N/A

Flash Point °C
N/A

Explosion Limits
N/A

Flammability
N/A

Autoignition Temp.
N/A

Solubility
Soluble in Water: 1 M H₂O, 20°C, complete, colorless

N/A x not available

Section 10 - Stability and Reactivity

Stability
Stable

Conditions of Instability
Absorbs carbon dioxide from air.

Materials to Avoid
Strong oxidizing agents. Strong acids

Hazardous Decomposition Products
Lithium oxides.

Section 11 - Toxicological Information

Hazardous Polymerization
Hazardous Polymerization
Will not occur.

Routes of Exposure
Skin Contact
Causes severe burns.

Skin Absorption
May be harmful if absorbed through the skin.

Eye Contact
Causes severe burns.

Inhalation
Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion
Harmful if swallowed.

Target Organ(s) or System(s)
Central nervous system. Cardiovascular system. Kidneys.

Signs and Symptoms of Exposure
Dehydration, weight loss, dermatological effects, and thyroid disturbances have been reported. Central nervous system effects that include slurred speech, blurred vision, sensory loss, ataxia, and convulsions may occur. Diarrhea, vomiting, and neuromuscular effects such as tremor, slurring, and hyperactive reflexes may occur as a result of repeated exposure to lithium ions. Dyspnosis and tachycardia have occurred in the breastfed infants of women receiving lithium carbonate therapy. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract. Eyes and skin. Inhalation may result in spasm, inflammation, and edema of the larynx bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: N/A

Toxicity Data
Oral - Rat: 368 mg/kg (LD₅₀)

Chronic Exposure - Teratogen
Result. Lithium and its compounds are possible teratogens by analogy to lithium carbonate which has equivocal human teratogenic data and positive animal teratogenic data.

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation
Contact a licensed professional waste disposal service to dispose of this material.

Section 14 - Transport Information

DOT
Proper Shipping Name: Lithium hydroxide, monohydrate or Lithium hydroxide, solid
UN#: 2000
Class: 8
Packing Group: Packing Group II
Hazard Label: Corrosive
PI#: NT PI#
Section 15 - Regulatory Information

EU Additional Classification
Symbol of Danger: C
Indication of Danger
Corrosive.
Risk Statements R: 22 35
Harmful if swallowed. Causes severe burns.
Safety Statements B: 28 36/37/39 45
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eyewash protection. In case of accident or if you feel unwell, seek medical advice immediately. (show the label, where possible).

US Classification and Label Text
Indication of Danger
Toxic (USA) Harmful (EU).
Risk Statements
Harmful if swallowed. Causes severe burns.
Safety Statements
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eyewash protection. In case of accident or if you feel unwell, seek medical advice immediately. (show the label, where possible).
US Statements
Target organ(s): Central nervous system. Cardiovascular system.

United States Regulatory Information
SARA Listed: No
Notes: This product is subject to SARA section 313 reporting requirements.

Canada Regulatory Information
WHMIS Classification
This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.
DSL: No
NDSL: No

Section 16 - Other Information

Disclaimer
For R&D use only. Not for drug, household or other uses.

Warranty
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc. shall not be held liable for any damages resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.