

SAFETY DATA SHEET

Preparation Date: 12/28/2016

Revision date 9/3/2019

Revision Number: G2

1. IDENTIFICATION

Product identifier

Product code: L1156
Product Name: LITHIUM HYDROXIDE, MONOHYDRATE, CRYSTAL, REAGENT, ACS

Other means of identification

Synonyms: No information available
CAS #: 1310-66-3
RTECS # Not available
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000

Order Online At: <https://www.spectrumchemical.com>
Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Tom Tyner (USA - West Coast)
Contact Person: Ibad Tirmiz (USA - East Coast)

2. HAZARDS IDENTIFICATION

Classification

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

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1

Label elements

Danger

Hazard statements

Causes severe skin burns and eye damage
 Harmful if swallowed
 Harmful if inhaled



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

Immediately call a POISON CENTER or physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water
Wash contaminated clothing before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents and container to an approved waste disposal plant in accordance with local, regional, national and international regulations as applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight-%
Lithium Hydroxide, Monohydrate	1310-66-3	100

4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call

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1-800-222-1222. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

Skin Contact: Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician immediately.

Eye Contact: Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. **WARNING!** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or 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. Immediate medical attention is required. Call a physician immediately.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms

- Severe skin and eye irritation or burns
- Causes digestive (gastrointestinal) tract irritation
- May cause gastrointestinal (digestive) tract burns
- Can burn mouth, throat, and stomach
- Burning sensation in the mouth and stomach
- Abdominal pain
- May cause nausea and vomiting
- May cause headache
- May cause muscle weakness
- Somnolence
- Convulsions
- Irritating to respiratory system
- Sore throat
- Coughing
- Dyspnea (Difficulty breathing and shortness of breath)
- May cause build-up of fluid in the lungs (pulmonary edema)
- May affect the liver

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

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Hazardous combustion products	No information available.
Specific hazards	No information available.
<u>Special Protective Actions for Firefighters</u>	
Specific Methods:	No information available
Special Protective Equipment for Firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions:	Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Avoid contact with skin, eyes and clothing.
<u>Environmental precautions</u>	Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not let product enter drains. Do not flush into surface water or sanitary sewer system. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment	Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.
Methods for cleaning up	Use appropriate tools to put the spilled solid in a suitable waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Use only in area provided with appropriate exhaust ventilation. Keep away from incompatible materials.

Safe Handling Advice:

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store in a segregated and approved area. Store away from incompatible materials. Hygroscopic. Protect from moisture.

Incompatible Materials:

Oxidizing agents
Acids
Metals

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Component	CAS No	OSHA	NIOSH	ACGIH	AIHA WEEL
Lithium Hydroxide, Monohydrate	1310-66-3	None	None	None	None

Canada

Component	CAS No	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Lithium Hydroxide, Monohydrate	1310-66-3	None	None	1 mg/m ³ STEL	None

Australia and Mexico

Component	CAS No	Australia	Mexico
Lithium Hydroxide, Monohydrate	1310-66-3	None	None

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Face-shield. or Goggles

Skin and body protection: Long sleeved clothing
Chemical resistant apron
Gloves
If working with large quantities:
Chemical resistant protective suit

Respiratory protection: Wear respirator with dust filter.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Solid

Appearance:

Crystals.

Color:

White.

Odor:

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No information available.	Taste No information available.	Formula LiOH.H2O
Molecular/Formula weight (g/mole): 41.96	Flammability (solid, gas) no data available	Flashpoint (°C/°F): No information available
Flash Point Tested according to: Not available	Autoignition Temperature (°C/°F): No information available	Lower Explosion Limit (%): No information available
Upper Explosion Limit (%): No information available	Melting point/range(°C/°F): 462-470 °C/863.6-878 °F	Decomposition temperature(°C/°F): No information available
Boiling point/range(°C/°F): 920 °C/1688 °F	Bulk density: No information available	Density (g/cm3): No information available
Specific gravity: 1.51	pH No information available	Vapor pressure @ 20°C (kPa): No information available
Evaporation rate: No information available	Vapor density: No information available	VOC content (g/L): No information available
Odor threshold (ppm): No information available	Partition coefficient (n-octanol/water): No information available	Viscosity: No information available
Miscibility: No information available	Solubility: Soluble in Water Solubility in Water: 216 g/l at 20 deg. C	

10. STABILITY AND REACTIVITY

Reactivity

No information available

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Exposure to moisture. Incompatible materials.

Incompatible Materials: Oxidizing agents
Acids
Metals

Hazardous decomposition products: No information available.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: Very caustic to aluminum and other metals in the presence of moisture

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

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Principal Routes of Exposure:

Skin. Inhalation. Ingestion.

Acute Toxicity**Component Information**

Lithium Hydroxide, Monohydrate	
CAS No	1310-66-3

LD50/oral/rat = 120 mg/kg Oral LD50 Rat (LOLI)

210 mg/kg (RTECS)

368 mg/kg (vendor)

LD50/oral/mouse = No information available**LD50/dermal/rabbit** = No information available**LD50/dermal/rat** = No information available**LC50/inhalation/rat** = 0.96mg/l 4 hr. Inhalation LC50 Rat**LC50/inhalation/mouse** = No information available**Other LD50 or LC50 information** = No information available**Product Information****LD50/oral/rat** =**Value - Acute Toxicity** = 368 mg/kg**LD50/oral/mouse** =**Value - Acute Tox** = No information available**LD50/dermal/rabbit****Value - Acute Toxicity** = No information available**LD50/dermal/rat****VALUE - Acute Tox** = No information available**LC50/inhalation/rat****VALUE-Vapor** = No information available**VALUE-Gas** = No information available**VALUE-Dust/Mist** = 0.96 mg/l (rat, 4 hr)**LC50/Inhalation/mouse****VALUE-Vapor** = No information available**VALUE - Gas** = No information available**VALUE - Dust/Mist** = No information available**Symptoms****Skin Contact:**

Severe skin irritation. Causes skin burns. Can cause burning pain, inflammation and blisters. redness.

Eye Contact:

Severe eye irritation. Causes eye burns.

Inhalation

Harmful by inhalation. Irritating to respiratory system. Symptoms may include burning sensation, coughing and sore throat. May cause dyspnea (difficulty breathing or shortness of breath). It may cause pulmonary edema.

Ingestion

Harmful if swallowed. May cause abdominal pain. Ingestion may cause nausea,

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vomiting. May cause headache. May affect behavior/central nervous system (somnolence). May cause weakness. Symptoms may include a burning sensation in the mouth, throat, and stomach. May affect behavior/central nervous system (convulsions/seizures).

Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Prolonged or repeated ingestion may affect the liver.

Sensitization: No information available.

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic.

Component	CAS No	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Lithium Hydroxide, Monohydrate	1310-66-3	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: No information available

Developmental Effects: No information available

Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Target Organs: Skin. Eyes.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility in soil No information available

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Component	CAS No	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Lithium Hydroxide, Monohydrate	1310-66-3	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN2680
Proper Shipping Name: Lithium hydroxide
Hazard Class 8
Subsidiary Class No information available
Packing group: II
Emergency Response Guide Number 154
Marine Pollutant No data available
DOT RQ (lbs): No information available
Special Provisions IB8, IP2, IP4, T3, TP33
Symbol(s): No information available
Description: UN2680, Lithium hydroxide, 8, II

TDG (Canada)

UN-No: UN2680
Proper Shipping Name: Lithium hydroxide
Hazard Class 8
Subsidiary Risk: No information available
Packing Group: II
Marine Pollutant No Information available
Description: UN2680, Lithium hydroxide, 8, II

ADR

UN Number UN2680
Proper Shipping Name: Lithium hydroxide
Transport hazard class(es) 8
Packing group II
Subsidiary Risk: No information available
Description: UN2680, Lithium hydroxide, 8, II

IMDG

UN-No: UN2680
Proper Shipping Name: Lithium hydroxide
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
Marine Pollutant No information available

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EMS: F-A
Description UN2680, Lithium hydroxide, 8, II

RID

UN Number UN2680
Proper Shipping Name: Lithium hydroxide
Transport hazard class(es) 8
Subsidiary Risk: No information available
Packing group II
Description: UN2680, Lithium hydroxide, 8, II

ICAO (air)

UN-No: UN2680
Proper Shipping Name: Lithium hydroxide
Hazard Class 8
Subsidiary Risk: No information available
Packing Group: II
Description: UN2680, Lithium hydroxide, 8, II

IATA

UN Number UN2680
Proper Shipping Name: Lithium hydroxide
Transport hazard class(es) 8
Subsidiary Risk: No information available
Packing group II
Precautionary Statements - Response 8L
Special Provisions No information available
Description: UN2680, Lithium hydroxide, 8, II

15. REGULATORY INFORMATION

International Inventories

Component	CAS No	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	China IECSC	Australia (AICS)	EINECS-No.
Lithium Hydroxide, Monohydrate	1310-66-3	Not listed. Exempt from listing on TSCA 8(b) Inventory since it is a hydrate. However, the anhydrous form (CAS number 1310-65-2) is listed as ACTIVE on the TSCA 8(b) Inventory.	Not present	Present	Present (1)-712	Present	Present	Not present

U.S. Regulations

Lithium Hydroxide, Monohydrate
New Jersey RTK Hazardous Substance List: 1128
Minnesota - Hazardous Substance List: Present

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Component	CAS No	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Lithium Hydroxide, Monohydrate	1310-66-3	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Component	CAS No	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
Lithium Hydroxide, Monohydrate	1310-66-3	None	None	None	None	None

U.S. TSCA

Component	CAS No	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Lithium Hydroxide, Monohydrate	1310-66-3	Not Applicable	Not Applicable

Canada

WHMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information:

Component
Lithium Hydroxide, Monohydrate
1310-66-3 (100)

WHMIS 2015 Hazard Classification
Health Hazard Not Otherwise Classified - Category 1: Causes severe damage to the respiratory tract; Skin corrosion/irritation - Category 1: H314 Causes severe skin burns and eye damage.; Serious Eye Damage/Eye Irritation - Category 1: H318 Causes serious eye damage.

Canada Hazardous Products Regulation This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

DSL/NDSL

Component	CAS No	Canada (DSL)	Canada (NDSL)
Lithium Hydroxide, Monohydrate	1310-66-3	Not Listed	Not Listed

Component	CAS No	CEPA Schedule I - Toxic Substances
Lithium Hydroxide, Monohydrate	1310-66-3	Not listed
Component	CAS No	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Lithium Hydroxide, Monohydrate	1310-66-3	Not listed

EU Classification

EU GHS - SV - CLP 1272/2008

Component	CAS No	EU GHS - SV - CLP (1272/2008)
Lithium Hydroxide, Monohydrate	1310-66-3	

EU - CLP (1272/2008)

R-phrase(s)

R34 - Causes burns
R22 - Harmful if swallowed
R20 - Harmful by inhalation

S-phrase(s)

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection

Component	CAS No	Classification	Concentration Limits:	Safety Phrases
Lithium Hydroxide, Monohydrate	1310-66-3		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

C - Corrosive
Xn - Harmful



16. OTHER INFORMATION

Preparation Date: 12/28/2016
Revision date: 9/3/2019
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the

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completeness or accuracy of the information contained herein.

End of Safety Data Sheet