

The following list contains the Material Safety Data Sheets you requested. Please scroll down to view the requested MSDS(s).

<u>Product</u>	<u>MSDS</u>	<u>Distributor</u>	<u>Format</u>	<u>Language</u>	<u>Quantity</u>
1416369	N/A	Hach Company	ROWGHS	English	1

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Total Enclosures: 1

World Headquarters  
Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00037

# SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Lithium Hydroxide  
**Catalog Number:** 1416369

Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00037  
**Chemical Name:** Lithium Hydroxide  
**CAS Number:** 1310-65-2  
**Additional CAS No. (for hydrated forms):** -  
1310-66-3 (Monohydrate)  
**Chemical Formula:** LiOH · H<sub>2</sub>O  
**Chemical Family:** Inorganic Base  
**Intended Use:** Laboratory Use

## 2. HAZARDS IDENTIFICATION

**GHS Classification:**

**Hazard categories:** Acute Toxicity: Acute Tox. 3-Orl Skin Corrosion/Irritation: Skin Corr. 1A Acute Toxicity: Acute Tox. 3-Inh

**GHS Label Elements:**  
DANGER



**Hazard statements:** May be corrosive to metals. Toxic if swallowed. Causes severe skin burns and eye damage. Toxic if inhaled.

**Precautionary statements:** Wear protective gloves / protective clothing / eye protection / face protection. Do not breathe dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. IF INHALED: Remove victim/person to fresh air and keep at rest in a position comfortable for breathing. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. 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 doctor/physician. Absorb spillage to prevent material damage.

**HMIS:**

**Health:** 3

**Flammability:** 0

**Reactivity:** 0

**Protective Equipment:** X - See protective equipment, Section 8.

**NFPA:**

**Health:** 3

**Flammability:** 0

**Reactivity:** 0

**Symbol:** Not applicable

**WHMIS Hazard Classification:** Class E - Corrosive material Class D, Division 1, Subdivision B - Toxic material (immediate effects)

**WHMIS Symbols:** Corrosive Acute Poison

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### 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Hazardous Components according to GHS:**

**Lithium Hydroxide, Anhydrous**

**CAS Number:** 1310-65-2

**Chemical Formula:** LiOH · H<sub>2</sub>O

**GHS Classification:** Met. Corr. 1, H290; Acute Tox. 3 -Orl., H301; Skin Corr. 1A, H314; Acute Tox. 3 - Inh, H331

**Percent Range (Trade Secret):** 100.0

**Percent Range Units:** weight / weight

**PEL:** 15 mg/m<sup>3</sup> as inhalable dust; 5 mg/m<sup>3</sup> as respirable dust

**TLV:** 10 mg/m<sup>3</sup> as inhalable dust; 3 mg/m<sup>3</sup> as respirable dust

**WHMIS Symbols:** CorrosiveAcute Poison

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### 4. FIRST AID MEASURES

**General Information:** In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.

**Advice to doctor:** Treat symptomatically.

**Eye Contact:** Immediately flush eyes with water for 15 minutes. Check for and remove any contact lenses. Call physician.

**Skin Contact (First Aid):** Wash skin with soap and plenty of water for 15 minutes. Remove contaminated clothing. Call physician immediately.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. Call physician.

**Ingestion (First Aid):** Do not induce vomiting. Give 1-2 glasses of water. Call physician immediately. Never give anything by mouth to an unconscious person. If vomiting occurs, avoid aspiration by keeping head below hips.

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### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Not Flammable, but reacts with most metals to form flammable hydrogen gas. During a fire, corrosive and toxic gases may be generated by thermal decomposition.

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

**Extinguishing Media:** Dry chemical. Carbon dioxide Alcohol foam.

**Extinguishing Media NOT To Be Used:** Not applicable

**Fire / Explosion Hazards:** Contact with metals gives off hydrogen gas which is flammable May explode on contact with: acetone nitromethane methanol + nitromethane zinc / zinc compounds magnesium silver salts May react violently with: chlorine / chlorine compounds fluorine water ammonia

**Hazardous Combustion Products:** This material will not burn.

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### 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Stop spilled material from being released to the environment. Cover spilled solid material with sand or other inert material. Releases of this material may contaminate the environment.

**Clean-up Technique:** Work in an approved fume hood. If permitted by regulation, Dilute with a large excess of water. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. Flush reacted material to the drain with a large excess of water. Otherwise, Pick up spill for disposal and place in a closed container Dispose of in accordance with local, state and federal regulations or laws.

**Evacuation Procedure:** Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: any quantity is spilled. If conditions warrant, increase the size of the evacuation.

**DOT Emergency Response Guide Number:** 154

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### 7. HANDLING AND STORAGE

**Handling:** Avoid contact with eyes skin clothing Wash thoroughly after handling. Use with adequate ventilation. Do not breathe dust. Maintain general industrial hygiene practices when using this product.  
**Storage:** Keep container tightly closed when not in use. Keep material dry. Keep this product in its original container when not in use. Store in a cool, dry, well-ventilated place. Store locked up. Store away from: acids / acid fumes. metals oxidizers Protect from: moisture heat extreme temperatures  
**Flammability Class:** Not applicable

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:** A system of local and/or general exhaust is recommended to keep exposures as low as possible Have an eyewash station nearby. Have a safety shower nearby. Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** chemical splash goggles Suitable facilities (eyewash station or bottle) for flushing of the eyes

**Skin Protection:** lab coat neoprene latex gloves In the EU, the selected gloves must satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it. Suitable facilities for quickly drenching or flushing skin after chemical exposure should be available.

**Inhalation Protection:** laboratory fume hood

**Precautionary Measures:** Avoid contact with: eyes skin clothing Wash thoroughly after handling. Use with adequate ventilation. Do not breathe: dust Keep away from: acids/acid fumes metals oxidizers Protect from: heat moisture

**TLV:** 10 mg/m<sup>3</sup> as inhalable dust; 3 mg/m<sup>3</sup> as respirable dust

**PEL:** 15 mg/m<sup>3</sup> as inhalable dust; 5 mg/m<sup>3</sup> as respirable dust

**For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:**

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** White powder

**Physical State:** Solid

**Molecular Weight:** 41.96

**Odor:** Suffocating

**Odor Threshold:** Not determined

**pH:** 13.4 (1% solution)

**Metal Corrosivity:**

**Corrosivity Classification:** Classified as corrosive to metals.

**Steel:** 0.063 miles/yr

**Aluminum:** Not determined

**Specific Gravity/ Relative Density (water = 1; air =1):** 1.51

**Viscosity:** Not applicable

**Solubility:**

**Water:** 128 g/L

**Acid:** Soluble

**Other:** Soluble in alcohol

**Partition Coefficient (n-octanol / water):** Not determined

**Coefficient of Water / Oil:** Not determined

**Melting Point:** 471 °C (879.8 °F)

**Decomposition Temperature:** 924 °C (1695 °F)

**Boiling Point:** Not applicable

**Vapor Pressure:** Not applicable

**Vapor Density (air = 1):** Not applicable

**Evaporation Rate (water = 1):** Not applicable

**Volatile Organic Compounds Content:** Not applicable

**Flammable Properties:** Not Flammable, but reacts with most metals to form flammable hydrogen gas. During a fire, corrosive and toxic gases may be generated by thermal decomposition.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not applicable

**Explosive Properties:**

Not classified according to GHS criteria.

**Oxidizing Properties:**

Not classified according to GHS criteria.

**Reactivity Properties:**

Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

**Gas under Pressure:**

Not classified according to GHS criteria.

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## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.

**Mechanical Impact:** None reported

**Static Discharge:** None reported.

**Reactivity / Incompatibility:** Incompatible with: acids metals combustible materials oxidizers

**Hazardous Decomposition:** Contact with metals may release flammable hydrogen gas. Heating to decomposition releases toxic and/or corrosive fumes of: lithium compounds

**Conditions to Avoid:** Extreme temperatures Excess moisture Excessive heat Incompatibles Poor Ventilation Avoid creating dust. Contact with acid or acid fumes

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## 11. TOXICOLOGICAL INFORMATION

**Toxicokinetics, Metabolism and Distribution:** No information available

**Toxicologically Synergistic Products:** None reported

**Acute Toxicity:** Toxicological Testing Route Data Given Below

Oral Rat LD50 = 210 mg/kg

Inhalation Rat LC50 = 0.960 mg/L/4 hr

**Specific Target Organ Toxicity - Single Exposure (STOT-SE):** Based on classification principles, the classification criteria are not met.

**Specific Target Organ Toxicity - Repeat Exposure (STOT-RE):** Based on classification principles, the classification criteria are not met.

**Skin Corrosion/Irritation:** Corrosive to skin.

**Eye Damage:** Corrosive to eyes.

**Sensitization:** Based on classification principles, the classification criteria are not met.

**CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction):** No germ cell mutagenicity, carcinogenicity or reproductive toxicity data found. Based on classification principles, the classification criteria are not met.

IARC Listed: No

NTP Listed: No

O.S.H.A. Listed: No

**Symptoms/Effects:**

**Ingestion:** Toxic Causes: severe burns May cause: central nervous system effects kidney damage liver damage dizziness vomiting coma death

**Inhalation:** Toxic Causes: severe burns coughing difficult breathing shortness of breath burning sensation May cause: edema of larynx and bronchi Effects similar to those of ingestion.

**Skin Absorption:** None Reported

**Chronic Effects:** Lithium compounds have been implicated in development of aplastic anemia. Signs of lithium poisoning include dehydration, extreme weight loss, fine tremor of hands, nausea, vomiting and diarrhea. Chronic overexposure may cause central nervous system effects kidney damage liver damage coma death

**Medical Conditions Aggravated:** Pre-existing: Eye conditions Skin conditions Respiratory conditions Kidney conditions Liver conditions

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** Acute toxicity value calculated from Lithium: 96 hr Fish LC50 = 96 mg/L

No ecological data available for this product. Mobility in soil: Highly mobile No bioaccumulation potential Based on classification principles, not classified as hazardous to the environment.

CEPA Categorization: Persistent and inherently toxic to non-human organisms (PiT).

**Ingredient Ecological Information:** --

Not applicable

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## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** Not applicable

**Special Instructions (Disposal):** Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. If permitted by regulation, Open cold water tap completely, slowly pour the reacted material to the drain. Filter to remove solids. Flush system with plenty of water. Otherwise, Check with national, local municipal and state authorities and waste contractors for pertinent local information on the disposal of this article.

**Empty Containers:** Working in a well-ventilated area, Rinse three times with an appropriate solvent. Collect rinsate and dispose of according to local, state or federal regulations. In the US, rinsate from empty containers is classified as hazardous waste and should be disposed of at an E.P. A. approved facility. Rinsate from empty containers may contain sufficient product to require disposal as hazardous waste. Dispose of empty container as normal trash.

**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

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## 14. TRANSPORT INFORMATION

### **D.O.T.:**

**D.O.T. Proper Shipping Name:** Lithium Hydroxide

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**Hazard Class:** 8

**Subsidiary Risk:** NA

**ID Number:** UN2680

**Packing Group:** II

### **T.D.G.:**

**Proper Shipping Name:** Lithium Hydroxide

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**Hazard Class:** 8

**Subsidiary Risk:** NA

**UN Number/PIN:** 2680

**Packing Group:** II

### **I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Lithium Hydroxide

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**Hazard Class:** 8

**Subsidiary Risk:** NA

**ID Number:** UN2680

**Packing Group:** II

### **I.M.O.:**

**Proper Shipping Name:** Lithium Hydroxide

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**Hazard Class:** 8

**Subsidiary Risk:** NA

**ID Number:** UN2680

**Packing Group:** II

**Additional Information:** There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

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## 15. REGULATORY INFORMATION

### **U.S. Federal Regulations:**

**O.S.H.A.:** This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

### **E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** Delayed (Chronic) Health Hazard Immediate (Acute) Health Hazard

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

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**302 (EHS) TPQ (40 CFR 355):** Not applicable  
**304 CERCLA RQ (40 CFR 302.4):** Not applicable  
**304 EHS RQ (40 CFR 355):** Not applicable  
**Clean Water Act (40 CFR 116.4):** Not applicable  
**RCRA:** Contains no RCRA regulated substances.

**State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.  
**Identification of Prop. 65 Ingredient(s):** None  
**California Perchlorate Rule CCR Title 22 Chap 33:** Not applicable  
**Trade Secret Registry:** Not applicable

**National Inventories:**

**U.S. Inventory Status:** TSCA Listed: Yes  
**CAS Number:** 1310-65-2  
**Canadian Inventory Status:** DSL Listed: Yes  
**EEC Inventory Status:** EINECS Listed: Yes  
**Australian Inventory (AICS) Status:** Listed  
**New Zealand Inventory (NZIoC) Status:** Listed  
**Korean Inventory (KECI) Status:** Listed - See anhydrous Chemical Abstract (CAS) Registry Number  
**Japan (ENCS) Inventory Status:** Listed  
**China (PRC) Inventory (MEP) Status:** Listed

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## 16. OTHER INFORMATION

**References:** In-house information. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. Vendor Information. NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards. Cincinnati: Department of Health and Human Services, 1981. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. Technical Judgment. The Merck Index, 11th Ed. Rahway, New Jersey: Merck and Co., Inc., 1989. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993.

**Complete Text of H phrases referred to in Section 3:** H301 Toxic if swallowed. H331 Toxic if inhaled. H314 Causes severe skin burns and eye damage.

**Revision Summary:** Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3).

**Date of MSDS Preparation:**

**Day:** 06  
**Month:** January  
**Year:** 2014

**MSDS Prepared:** MSDS prepared by Product Compliance Department extension 3350

**CCOHS Evaluation Note:** It is offered under exemption from WHMIS labeling as specified in the Controlled Products Regulation (CPR) Section 17. It is offered under the interim policy that was established by Health Canada permitting use of GHS-formatted safety data sheets in Canada prior to revision of CPR to GHS. This product has been classified and labeled in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3).

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**Legend:**

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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