

## SAFETY DATA SHEET

**Lith****HLiO, LiOH**  
**LITHIUM HYDROXIDE**  
Anhydrous

ASG Chemical Holdings, LLC. (ASG Chemie)

Version No: 1.1 • SDS Number: RS 000001058

according to OSHA Hazard Communication Standard 29CFR 1910.1200 (HCS 2012)

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**SECTION 1. Identification****Product Identifier**

Product name	LITHIUM HYDROXIDE, Anhydrous
Substance Name	lithium hydroxide, calc.
Proper shipping name	Lithium hydroxide
Chemical formula	HLiO, LiOH
CAS number	1310-65-2

**Recommended use of the chemical and restrictions on use**

Recommended use	Absorbent, Catalyst, Raw material for chemical industry.
Restrictions on use	None known.

**Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party**

Registered company name	ASG Chemical Holdings (ASG Chemie)
Address	2603 NW 13th St. #231 Gainesville, Florida 32609 United States
Telephone	352.432.1481
Fax	352.430.7442
Website	www.asgchemie.com
Email	compliance@asgchemie.com

**Emergency phone number**

Association / Organization	Ambipar Response Emergency Phone
Emergency telephone numbers	Number: 1-800-219-8391 / Local +1 385-264-7545
Other emergency telephone numbers	352.432.1481

## SECTION 2. Hazard(s) Identification

GHS classification in accordance with 29 CFR 1910.1200

Serious eye damage	Category 1
Acute aquatic toxicity	Category 3

### Label elements

Hazard pictogram(s)



Signal word **Danger**

### Hazard statement(s)

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H402	Harmful to aquatic life.

### Precautionary Statements

P260	Do not breathe dusts or mists.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/face protection.

### Response

P301 + P312 + P330 IF SWALLOWED	Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED	Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair)	Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED	Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310 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/doctor.
P363	Wash contaminated clothing before reuse.

### Storage

P405	Store locked up.
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### Precautionary statement(s) Disposal

P501	Dispose of contents/ container to an approved waste disposal plant.
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### Other Hazards

The information required is contained in this Material Safety Data Sheet.

### SECTION 3. Composition / information on ingredients

<b>Substance / Mixture</b>	Substance
Chemical nature	Lithium Salts
Substance name	Lithium hydroxide, calc.
CAS-No.	1310-65-2

#### Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
lithium hydroxide	1310-65-2	>= 90 - <= 100

\* Note: The exact concentrations of the above listed chemicals are being withheld as a trade secret.

### SECTION 4. First-aid measures

<b>General advice</b>	First Aid responders should pay attention to self-protection and use the recommended protective clothing Take off contaminated clothing and shoes immediately. Move out of dangerous area. Keep warm and in a quiet place.
<b>If inhaled</b>	Move to fresh air. If not breathing, give artificial respiration. Keep the victim calm and in a semi-upright position. Call a physician immediately.
<b>In case of skin contact</b>	Wash off with soap and water. Call a physician immediately.
<b>If swallowed</b>	Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician immediately.
<b>Most important symptoms and effects, both acute and delayed</b>	If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.
<b>Notes to physician</b>	Treat symptomatically. For specialist advice physicians should contact the Poisons Information Service

### SECTION 5. Fire-fighting Measures

<b>Suitable Extinguishing media</b>	<ul style="list-style-type: none"><li>• Water spray</li><li>• Foam</li><li>• Carbon Dioxide (CO2)</li><li>• Dry powder</li></ul>
<b>Unsuitable Extinguishing media</b>	<ul style="list-style-type: none"><li>• High volume water jet</li></ul>
<b>Specific hazards during fire fighting</b>	<ul style="list-style-type: none"><li>• Hazardous decomposition products formed under fire conditions. Metal oxides</li></ul>
Further information	<ul style="list-style-type: none"><li>• Collect contaminated fire extinguishing water separately. This must not be discharged into drains.</li><li>• Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations</li></ul>
Special protective equipment for fire-fighters	<ul style="list-style-type: none"><li>• Wear full protective clothing and self-contained breathing apparatus.</li></ul>

### SECTION 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	<ul style="list-style-type: none"><li>• Ensure adequate ventilation.</li><li>• Wear personal protective equipment.</li><li>• Avoid contact with skin, clothes and clothing.</li><li>• Do not breathe dust/ fumes/ gas/ mist/ vapors/ spray.</li><li>• Keep people away from and upwind of spill/ leak</li></ul>
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## SECTION 7. Handling and storage

Advice on protection against fire and explosion	<ul style="list-style-type: none"> <li>• Normal measures for preventive fire protection.</li> </ul>
Advice on safe handling	<ul style="list-style-type: none"> <li>• Provide sufficient air exchange and / or exhaust in work rooms.</li> <li>• Wear personal protective equipment</li> <li>• Avoid creating dust.</li> <li>• Handle in accordance with good industrial hygiene and safety practice</li> <li>• In general, emissions are controlled and prevented by implementing an appropriate management system including regular informing and training workers</li> </ul>
Conditions for safe storage	<ul style="list-style-type: none"> <li>• Keep containers tightly closed in a dry, cool and well-ventilated place.</li> <li>• Protect from moisture.</li> </ul>
Materials to avoid	<ul style="list-style-type: none"> <li>• Do not store near acids</li> <li>• Avoid contact with amphoteric metals (aluminum, lead, zinc)</li> </ul>
Further information on storage stability	<ul style="list-style-type: none"> <li>• No decomposition if stored and applied as directed</li> </ul>

## SECTION 8. Exposure controls / personal protection

<b>Ingredients with workplace control parameters</b>				
Ingredients	CAS-no.	Value type	Control parameters	Basis
Lithium Hydroxide	1310-05-2	CEIL	/ Permissible concentration	USS WEEL
<b>Engineering measures</b>		Provide sufficient air exchange and/or exhaust in work rooms		
<b>Personal protective equipment</b>				
Respiratory protection	In case of inadequate ventilation wear respiratory protection <b>P2 filter</b>			
<b>Hand protection</b>				
Material	Wear suitable gloves			
Remarks	Protective gloves The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. The exact break through time can be obtained from the protective glove producer and this has to be observed. Protective gloves have to be replaced at the first sign of deterioration.			

## SECTION 9. Physical and chemical properties

<b>Information on basic physical and chemical properties</b>	
Appearance	crystalline
Color	colorless
Odor	No data available
Odor Threshold	No data available
pH	14 - Concentration: 0.4 g/l (as aqueous solution)
Melting point / range	ca 793°F / 423°C (1,013 hPa) Method: OECD Test Guideline 102
Initial boiling point and range	no data available
Flash point	no data available
Evaporation rate	no data available
Flammability (solid, gas)	no data available
Upper explosion limit / Upper flammability limit	no data available
Lower explosion limit / Lower flammability limit	no data available

Vapor pressure	no data available
Relative vapor density	no data available no data available
Relative density	no data available
Density	1.43 g/cm <sup>3</sup> (68°F / 20°C)
Bulk density	450 kg/m <sup>3</sup> (68°F / 20°C)
Water Solubility	110 g/l (68°F / 20°C) Method: OECD Test Guideline 105
Solubility in other solvents	no data available
Partition coefficient: n-octanol/water	no data available
Autoignition temperature	no data available
Decomposition temperature	To avoid thermal decomposition, do not overheat
Viscosity, dynamic	no data available
Viscosity, kinematic	no data available
Molecular weight	23.95 g/mol

#### SECTION 10. Stability and reactivity

Reactivity	Risk of violent reaction
Chemical stability	Stable under normal conditions
Possibility of hazardous reaction	Decomposes by reaction with strong acids
Conditions to avoid	Avoid dust formation. Protect from moisture.
Incompatible materials	Acids. Avoid contact with amphoteric metals (e.g. aluminium, lead, zinc)
Hazardous decomposition products	Metal oxides

#### SECTION 11. Toxicological information

<b>Acute toxicity</b>	<b>lithium hydroxide</b>
<b>Ingredients</b>	
Acute oral toxicity	LD50 (Rat): 330 mg/kg Test substances: Read-across (Analogy)
Acute inhalation toxicity	LC50 (Rat. male and female):> 3.4 mg/l Exposure; lime: 4 h Test atmosphere: dust/mist Method, OECD Test Guideline 403 Test substance: Read-across (Analogy) GLP: yes
Acute dermal toxicity	LD50 (Rat. male and female):> 2000mg/kg Method: OECD Test Guideline 402 Test substance: Read-across (Analogy) GLP: yes
<b>Skin corrosion / irritation</b>	<b>lithium hydroxide</b>
<b>Ingredients</b>	
Method	In Vitro Membrane Barrier Test Method for Skin Corrosion Corrositex
Result	Corrosive
GLP	yes
<b>Serious eye damage / eye irritation</b>	<b>lithium hydroxide</b>
<b>Ingredients</b>	
Test Type	Buehler Test
Species	Guinea pig
Method	OECD Test Guidelines 406
Result	Did not cause sensitization on laboratory animals
GLP	yes
Test substance	Read-across (Analogy)

**Germ cell mutagenicity****Ingredients**

Genotoxicity in vitro

**lithium hydroxide**

Test Type: Ames test

Metabolic activation: with and without metabolic activation

Method: Mutagenicity (Escherichia coli - reverse mutation assay)

Result: negative

GLP: yes

Test Type: In vitro Mammalian Cell Gene Mutation Test

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

GLP: yes

Test Type: Chromosome aberration test in vitro

Test system: Human lymphocytes

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

GLP: yes

**Carcinogenicity**

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity****Ingredients**

Effects on fetal development

**lithium hydroxide**

Test type: Two-generation study

Species: RaL male and female

Application Route: oral

General Toxicity Maternal: NOAEL: 10 mg/kg bw/day

Development Toxicity: NOAEL: 29 mg/kg bw/day

Target Organs: Adrenal gland, Liver, Kidney

Method OECD Test Guideline 416

GLP: yes

Remarks: Read-across (Analogy)

**Repeated dose toxicity****Ingredients**

NOAEL

4.13 mg/kg

Application Route

Oral

Remarks

Epidemiological data

NOAEL

extrapolated 0.01447 mg/l

Application Route

Inhalation

Remarks

Epidemiological data

**SECTION 12. Ecological information****Ecotoxicity****Ingredients**

Toxicity to fish

**lithium hydroxide**

LC50 (Danio rerio (zebra fish)): 62.22 mg/l

Exposure time: 96h

Test Type: static test

Test substance: Read-across (Analogy)

Method: OECD Test Guideline 203

GLP: yes

**Toxicity to daphnia and other aquatic invertebrates**

EC50 (Daphnia magna (Water flea)) 19.1 mg/l  
 Exposure time: 48h  
 Test Type: Immobilization  
 Method: OECD Test Guideline 202  
 GLP: yes

EC50 (Daphnia magna (Water flea)): pH adjustment 34.3 mg/l  
 Exposure time: 48 h  
 Test Type: Immobilization  
 Method: OECD Test Guideline 202  
 GLP: yes

**Toxicity to algae**

EbC50 (Pseudokirchneriella subcapitata (green algae)) : 23.75 mg/l  
 Exposure time: 72h  
 Test Type: 72h  
 Test substance: Read-across (Analogy)  
 Method: OECD Test Guideline 201  
 GLP: yes

ErC50 (Pseudokirchneriella subcapitata (green algae)) 87.57 mg/l  
 Exposure time: 72 h  
 Test Type: Growth inhibition  
 Test substance: Read-across (Analogy)  
 Method: OECD Test Guideline 201  
 GLP: yes

NOEC (Pseudokirchneriella subcapitata (green algae)) 5.71 mg/l  
 Exposure time: 72 h  
 Test Type: Growth inhibition  
 Test substance: Read-across (Analogy)  
 Method: OECD Test Guideline 201  
 GLP: yes

**Toxicity to fish (Chronic toxicity)**

NOEC (Danio rerio (zebra fish)): 9.8 mg/l  
 Exposure time: 34d  
 Test Type: Early-life Stage  
 Test substance: Read-across (Analogy)  
 GLP: yes

**Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)**

EC50 (Daphnia magna (Water flea)): 2.3mg/l  
 Exposure time: 21d  
 Test Type: Early-life Stage  
 Test substance: Read-across (Analogy)  
 Method: OECD Test Guideline 211  
 GLP: yes

**Toxicity to microorganisms**

EC50 (activated sludge): 180.8 mg/l  
 Exposure time: 3h  
 Test Type: Respiration inhibition  
 Method: OECD Test Guideline 209  
 GLP: yes

**Persistence and degradability  
Ingredients:**

Biodegradability  
 Bio accumulative potential  
 Mobility in soil

**lithium hydroxide**

Remarks: The methods for determining biodegradability are not applicable to inorganic substances  
 no data available  
 no data available

**Other adverse effects****Product:****Ozone depletion potential**

Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 6C2 Class I Substances. Remarks: This product neither contains nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clear Air Act Section 602 (40 CFR 82, Subpt. A, App. A + B)

### SECTION 13. Disposal Considerations

Disposal methods	
Waste from residues	Dispose of in accordance with local regulations.
Contaminated packaging	Refer to manufacturer's supplier for information on recovery / recycling.

### SECTION 14. Transport information

#### Internal Regulations

##### UNRTDG

UN number	UN2680
Proper shipping name	Lithium Hydroxide
Class	8
Packing group	11
Labels	8

##### IATA DGR

UN/ID no.	UN2680
Proper shipping name	Lithium hydroxide
Class	8
Packing group	11
Labels	Corrosive
Packing instruction (cargo aircraft)	863
Packing instruction (passenger aircraft)	859

##### IMDG-Code

UN number	UN2680
Proper shipping name	Lithium Hydroxide
Class	8
Packing group	11
Labels	8
EmS Code	F-A, S-B
Marine Pollutant	no
Remarks	Alkaline

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code  
Not applicable for product as supplied.

#### Domestic regulation

49CFR	
UN/ID/NA number	UN2680
Proper Shipping name	Lithium hydroxide
Class	8
Packing group	11
Labels	Corrosive
ERG Code	154
Marine pollutant	no

#### Special precautions for user

The transport classifications provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this safety data sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### SECTION 15. Regulatory information

EPCRA	Emergency Planning and Community Right-to-know
CERCLA	Reportable Quantity This material does not contain any components with a CERCLA RQ.
SARA 304	Extremely Hazardous Substances Reportable Quantity This material does not contain any components with a section 304 EHS RQ.
SARA 302	Extremely Hazardous Substances Threshold Planning Quantity This material does not contain any components with a section 302 EHS TPO.
SARA 311/312	Hazards : Acute toxicity (any route of exposure) Skin corrosion or irritation Serious eye damage or eye irritation
SARA 313	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.



**Clean Air Act**

This product neither contains nor was manufactured with a class I or class II ODS as defined by the US clean air act section 602 (40 CFR 82. Subpt. A, App.A +B). This product does not contain any hazardous air pollutants (HAP) as defined by the US clean air act section 112 (40 CFR 61). This product does not contain any chemicals listed under the US clean air act section 112(r) for accidental release prevention (40 CFR 68.130. Subpart F). This product does not contain any chemicals listed under the US clean air act section 111 intermediate or final VOC's, (40 CFR 60.489).

**Clean Water Act**

This product does not contain any hazardous substances listed under the US clean water act, section 311 Table 116.4A. This product does not contain any hazardous chemicals listed under the US clean water act, section 311, Table 117.3. This product does not contain any toxic pollutants listed under the US clean water act section 307.

**US State Regulations**

Massachusetts, right to know	no components are subject to the Massachusetts right to know act
Pennsylvania right to know	lithium hydroxide.
Main chemicals of high concern	product does not contain any listed chemicals
Vermont chemicals of high concern	Product does not contain any listed chemicals
Washington chemicals of high concern.	Product does not contain any listed chemicals.
California prop 65	WARNING: this product can expose you to chemicals, including lithium carbonate, which is known to the state of California to cause birth defects, or other reproductive harm. For more information go to <a href="http://www.p65warnings.ca.gov">www.p65warnings.ca.gov</a>

**The ingredients of this product of are reported in the following inventories.**

LINECS	Not in compliance with the inventory All components of this product are on the Canadian DSL
AICS	On the inventory, or in compliance with the inventory
NZlC	Not in compliance with the inventory
ENCS	On the inventory, or in compliance with the inventory
ISHL	On the inventory, or in compliance with the inventory
KECI	On the inventory, or in compliance with the inventory
PICCS	On the inventory, or in compliance with the inventory
IECSC	On the inventory, or in compliance with the inventory
TCSI	On the inventory, or in compliance with the inventory
TSCA	On the inventory, or in compliance with the inventory
TSCA list	No substances are subject to a Significant New Use Rule. No substances are subject to TSCA 12(b) export notification requirements.

**SECTION 16. Regulatory information**

Further information NFPA 704



HEALTH	/	3
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS ratings are based on a 0-4 rating scale with 0 representing minimal hazards or risks and 4 representing significant hazard or risks. The "" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

**Full text of other abbreviations**

US WEEL	USA Workplace Environmental Exposure Levels (WEEL)
US WEEL / CEIL	Ceiling

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AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; tBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 06/03/2019

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / Z8

Performance Lithium and Specialty Chemicals

**Lith**

Lithium Salts of America [www.lithiumsalts.com](http://www.lithiumsalts.com)

Lithium Hydroxide • Anhydrous