Hazard Statement(s):	Causes severe skin burns and eye damage.	H314
	Harmful if swallowed.	H302
Precautionary Statement(s):		
	Wear protective gloves/protective clothing/eye protection/face protection.	P280
	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	P305 + P351 + P338
	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.	P301 + P330 + P331
	Immediately call a POISON CENTER or doctor/physician.	P310
	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.	P303 + P361 + P353
	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.	P304 + P340
Additional Precautionary Statement(s):		
	Do not breathe dust/fume/gas/mist/vapours/spray.	P260
	Wash hands thoroughly after handling.	P264
	Do not eat, drink or smoke when using this product.	P270
	Wash contaminated clothing before reuse.	P363
	Store locked up.	P405
	Dispose of contents/ container to an approved waste disposal plant.	P501

2.3 Other Hazards

None.

3. Composition / Information on Ingredients

3.1 Substances — Not applicable. Lithium hydroxide monohydrate is considered to be a mixture of anhydrous in water

3.2 Mixtures

3.2.1 GHS Classification [EC: Regulation No 1272/2008; US: OSHA regulations]

Chemical Name	CAS #	EC No	EC Index No	REACH Reg No	Wt.%	Classification, Hazard Statement Codes	
Lithium hydroxide, anhydrous	1310-65-2	215-183-4	not avail.	01-2119560576-31-0000	57	Skin Corr. 1B Acute Tox. 4	H314 H302
Water	7732-18-5	None	None	None	43	None	

(See Section 16 for full H-Statement text)

4. First Aid Measures

4.1 Description of First Aid Measures

EYES: Immediately flush with water for at least 15 minutes, lifting the upper and lower eyelids intermittently. See a medical doctor or ophthalmologist immediately.

SKIN: Immediately flush with plenty of water while removing contaminated clothing and/or shoes, and thoroughly wash with soap and water. Obtain immediate medical attention. Contact a medical doctor if necessary.

INGESTION: Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

INHALATION: Remove to fresh air. If breathing discomfort occurs and persists, see a medical doctor. If breathing has stopped, give artificial respiration and see a medical doctor immediately.

4.2 Most Important Symptoms and effects, both acute and delayed

This product is corrosive.

4.3 Indication of any immediate medical attention and special treatment needed.

Notes to medical doctor:

This product is corrosive to the skin, eyes and mucous membranes of the respiratory and gastrointestinal tracts. Consideration should be given to gastric lavage, with endotracheal tube in place. Treatment is controlled removal of exposure with symptomatic and supportive care.

5. Fire-Fighting Measures

5.1 Extinguishing media — Dry chemical, CO_2, water spray or regular foam.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products	Corrosive lithium hydroxide dust.
General Hazard	None
Properties contributing to Flammability	None
Flashpoint	Not applicable
Flammable limits in air	Not applicable
Auto ignition temperature	Not applicable
Sensitivity to static discharge	Not applicable
Sensitivity to static impact	Not applicable

5.3 Advice for fire -fighters

Wear full protective clothing and self-contained breathing apparatus (SCBA) approved for fire fighting. This is necessary to protect against the hazards of heat, products of combustion and oxygen deficiency. Do not breathe smoke, gases or vapors generated.

COMMENTS:
(See Section 10, Stability and Reactivity)

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Before cleanup measures begin, review the entire SDS with particular attention to Section 2, Hazards Identification; and Section 8, Exposure Controls/Personal Protection.

6.2 Environmental precautions

Do not wash into drains. Dispose of at qualified waste disposal facility.

6.3 Methods and material for containment and cleaning up

Sweep up and place in suitable transport container. Dispose of waste according to all local and Federal laws and regulations.

6.4 Reference to other sections

Before cleanup measures begin, review the entire SDS with particular attention to Section 2, Hazards Identification; and Section 8, Exposure Controls/Personal Protection.

6.5 Additional information

Not specified.

7. Handling and Storage

7.1 Precautions for safe handling

Do not get in eyes, on skin or clothing. Avoid breathing dust. Wash thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Keep container closed. Store away from acids and water.

7.3 Specific end use(s)

Defined in Exposure scenarios. Industrial and professional use only

8. Exposure Controls / Personal Protection

8.1 Control parameters

Lithium hydroxide, anhydrous

DNEL

Long-term exposure, systemic, inhalation	14.5 mg/m^3 (10 mg/m3 nuisance dust level)
Long-term exposure, systemic, dermal	41.4 mg/kg/day

PNEC

PNEC aqua (freshwater)	2.3 mg/l
PNEC STP	80 mg/l

EXPOSURE LIMITS

Chemical Name	EU		EH40 (UK WEL)		USA (ACGIH)		USA (OSHA)	
	TWA	STEL	TWA	STEL	TWA	STEL/Ceiling	PEL	STEL/Ceiling
Lithium hydroxide,	none*		none*		none*		none*	

monohydrate					
Lithium hydroxide, anhydrous	none*	---	1 mg/m^3	none*	none*

* No occupational exposure limit value

8.2 Exposure controls

Engineering controls :

Use local exhaust ventilation to keep airborne concentrations below exposure limits.

Personal protective equipment

Eyes and Face: Safety glasses or goggles

Respiratory: When engineering controls are not adequate, wear a respirator approved for protection against inorganic dusts. See Exposure Scenario for more details.
US: NIOSH or MSHA approved
Europe: CEN Class P type

Protective Clothing: Gloves: Nitrile (Typical permeation breakthrough time >480 minutes)
These glove recommendations should not be used as the absolute basis for glove selection. Actual in-use conditions may vary glove performance from the controlled conditions of laboratory tests. Factors such as concentration and temperature, glove thickness and glove reuse, may affect performance. Other glove requirements, such as length, dexterity, cut, abrasion, puncture and snag resistance, or glove grip need to be considered in making your final selection.
Other : Not specified.

Work Hygienic Practices: Quick-drench eyewash and safety shower.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance:	White crystals
Odor:	Odorless
Odor threshold:	Not applicable
pH:	(1% solution) @ 25ºC: >13
Melting point:	470ºC (878ºF)
Boiling point:	Not applicable
Flash point:	Not applicable
Evaporation rate(butyl acetate = 1):	Not applicable
Flammability:	Not flammable
Flammable limits:	Not applicable
Vapor pressure:	Not applicable
Vapor density (air = 1):	Not applicable
Specific gravity:	1.5 g/cc
Solubility in water:	% by wt. @ 25ºC (77ºF): 10
Partition coefficient n -octanol/ water:	Not applicable
Autoignition temperature:	Not applicable
Decomposition temperature:	Not available
Viscosity:	Not applicable
Explosive properties:	Not explosive
Oxidizing properties:	Not an oxidizer

9.2 Other information

Self-reactive properties	Does not meet classification criteria.
Pyrophoric properties	Does not meet classification criteria.
Self-heating properties	Does not meet classification criteria.
Water reactive properties	Does not meet classification criteria.
Corrosive to metals	Does not meet classification criteria.
Molecular weight:	41.96

10. Stability and Reactivity

10.1	Reactivity	Reacts with acids.
10.2	Chemical stability	Stabile
10.3	Possibility of hazardous reaction	Hazardous polymerization will not occur

10.4	Conditions to avoid	Contact with acids, aluminium or zinc.
10.5	Incompatible materials	Acids, aluminum, zinc
10.6	Hazardous decomposition products	None

11. Toxicological Information

11.1 Information on toxicological effects

(a) acute toxicity	Lithium hydroxide is classed as acute oral category 4 based on read across data.
(b) skin corrosion/irritation	Classified as corrosive, category 1B on the basis of lithium hydroxide.
(c) serious eye damage/irritation	Classified as corrosive to eyes on the basis of lithium hydroxide.
(d) respiratory/skin sensitisation	Classed as not sensitizing to skin on the basis of lithium hydroxide.
(e) germ cell mutagenicity	Classified as not mutagenic based on lithium hydroxide.
(f) carcinogenicity	Classified as not carcinogenic based on lithium hydroxide.
(g) reproductive toxicity	Classified as not a reproductive toxin based on lithium hydroxide.
(h) STOT-single exposure	Classified as not causing organ damage based on lithium hydroxide.
(i) STOT-repeated exposure	Classified as not causing organ damage on repeat exposure based on lithium hydroxide.
(j) aspiration hazard	Lithium hydroxide, a solid, does not present an aspiration hazard.

Lithium hydroxide has been extensively tested for REACH registration

Acute Effects From Overexposure:
This product is corrosive to skin, nose, throat, stomach and eyes (may cause blindness).
Chronic Effects From Overexposure:
No data available for product.

Carcinogenicity Listings

EH40: Not listed.
IARC: Not listed.
NTP: Not listed.
OSHA: Not considered a carcinogen under OSHA.
ACGIH: Not listed.

12. Ecological Information

12.1 Toxicity : No classification.

Lithium hydroxide, anhydrous

Daphnia magna: 48 hr. EC_{50} = 34.3 mg/L
Daphnia reproduction 21 day, NOEC 2.3 mg/l
Fish: 96 hr. LC_{50} = 62 mg/L
Algal growth inhibition : EC50 88 mg/l (anhydrous)
Sludge Respiration inhibition: EC50 180 mg/l (anhydrous)

12.2 Persistence and degradability
No applicable for metal salts.

12.3 Bioaccumulative potential
No applicable for metal salts.

12.4 Mobility in soil
No data available for the product.

12.5 Results of PBT and vPvB assessment
No applicable for metal salts.

12.6 Other adverse effects
None

13. Disposal Considerations

13.1 Waste treatment methods
Use a qualified industrial waste disposal facility. Dispose of waste according to local and Federal laws and regulations.

14. Transport Information

14.1	UN Number	UN2680
14.2	UN proper shipping name (IMDG, ICAO, ADR, DOT)	Lithium hydroxide
14.3	Transport hazard class(es) (IMDG, ICAO, ADR, DOT)	8, Corrosive
14.4	Packing group (IMDG, ICAO, ADR, DOT)	II
14.5	Environmental hazards	Based on available data, the classification criteria are not met.
14.6	Special precautions for user	None
14.7	Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	None

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EUROPEAN UNION:

German Wassergefährdungsklasse (water hazard class)
lithium hydroxide, anhydrous 2

UNITED STATES:

Section 311 Hazard Category (40 CFR 370):	Immediate (Acute) Health Hazard
Section 313 Reportable Ingredients (40 CFR 372):	This product does not contain a toxic chemical subject to the reporting requirements of Section 313 of Emergency Planning and Community Right-To-Know Act of 1986.
Section 302 Extremely Hazardous Substances (40 CFR 355):	Not listed
CERCLA Hazardous Substance (40 CFR 302.4):	Not listed
TSCA Sec 12b Export Notification:	This product is not subject to TSCA 12 (b) Export Notification Requirements.
NFPA Rating:	Health: 3 Flammability: 0 Reactivity: 1 Special: None

INTERNATIONAL INVENTORY STATUS:

Inventory/Country	Product Status
EINECS (EU)	Lithium hydroxide is listed; the hydrated form is not required to be listed.
TSCA (US)	Lithium hydroxide is listed; the hydrated form is not required to be listed.
ECL (Korea)	Lithium hydroxide is listed; the hydrated form is not required to be listed.
DSL (Canada)	Lithium hydroxide is listed; the hydrated form is not required to be listed.

15.2 Chemical Safety Assessment

The Chemical Safety Assessment has been completed for lithium hydroxide anhydrous.

16. Other Information

European Union:

H Statements from Section 3:

H314 Causes severe skin burns and eye damage.
H302 Harmful if swallowed.

List of Abbreviations used in this SDS:

PBT Persistent, Bioaccumulative and Toxic
vPvB very Persistent, very Bioaccumulative
PEC Predicted environmental concentration
PNEC Predicted no effect concentration
DNEL Derived no effect level

Specific uses identified for Exposure Scenarios

ES1 Formulation
ES2 Chemical processing
ES3 Professional use of products
ES4 Consumer use of dilute material

REVISION SUMMARY: Revision # 4. Sections 1, 2, 3, 8, and 16 revised. Regular review completed. No significant changes.

This SDS has been prepared to meet U. S. OSHA Hazard Communication Standard requirements.
type 7a