



SAFETY DATA SHEET

LITHIUM HYDROXIDE

1. Identification of the Substance/Mixture and of the Company/Undertaking:

1.1	Product Identifier:	Lithium Hydroxide
1.1.1	Substances	
1.1.2	Alternate names and trade name	ExtendAir® CO2 Absorbent
1.1.3	Mixture name:	Not applicable
1.2	Relevant Identified Uses of the Substance or Mixture and Uses Advised Against:	An absorbent for Carbon Dioxide removal
1.3	Details of the Supplier of the Safety Data Sheet	Micropore Inc. 1000 Konica Drive Elkton, MD 21921 USA P: +1 302-731-4100 F: +1 302-731-8214
1.4	Emergency Telephone Number	CHEMTEL: 1-800-255-3924 (ERR: Micropore, Inc., Contract# MIS1133959) Domestic North America, Puerto Rico, and U.S. Virgin Islands +1-813-248-0585 For International, Collect Calls Accepted 24 HR, 365 DAYS

2. Hazards Identification

2.1 Classification of the Substance or mixture:		
2.1.1 GHS Classification [EC Regulation No 1272/2008 and US OSHA regulations]	Skin Corrosion Category 1B Acute Toxicity Category 4	
2.2 Label Elements:		
2.2.1 Hazard Pictograms(s):		
2.2.2 Signal Word:	Danger	
Hazard Statement(s):	Harmful if swallowed.	H302
	Causes severe skin burns and eye damage	H314

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. Immediately call a POISON CENTER or doctor/physician.	P301 P330 P331 P310
	IF ON SKIN: 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
2.3 Other Hazards	None	

3. Composition / Information on Ingredients

3.1 Substances

3.1.1 GHS Classification (EC: Regulation No 1272/2008; US: OSHA regulations)

Chemical Name	CAS #	EC No	EC Index No	REACH Reg No	Wt.%, Dry	Classification, Hazard Statement Codes	
Lithium Hydroxide , anhydrous	1310-65-2	215-183-4	not avail.	not avail.	>95%	Skin Corr. 1B Acute Tox. 4	H341 H302
Lithium carbonate	554-13-2	209-062-5	not avail.	not avail.	<3%	Acute Tox. 4 Skin Irrit. 3 Aquatic Chronic 3	H302 H319 H412
Polyethylene	9002-88-4	Not avail.	not avail.	not avail.	<10 %	Not hazardous	

3.1.2 EC: Classification according to 67/548/EEC or 1999/45/EC [DSD/DPD]

Chemical Name	CAS #	EC No	Wt.%	Symbols	R-phrases
Lithium Hydroxide , anhydrous	1310-65-2	215-183-4	>95%	C Xn	R34 R22
Lithium carbonate	554-13-2	209-062-5	<3%	Xn Xi	R22 R36 R52/53

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, CO₂, 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 Advise for Fire Fighters

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

Not available. Chemical safety assessment has not been completed for this product.

8. Exposure Controls/Personal Protection

8.1 Control Parameters

EXPOSURE LIMITS

Chemical Name	EU STEL	EH LTEL	USA (ACGIH) TWA	USA (ACGIH) CL
Lithium Hydroxide, anhydrous	none*	5 mg/m ³	5 mg/m ³	none*
Lithium carbonate	none*	none*	none*	none*
Polyethylene	none*	none*	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

In normal use avoid direct contact with material. In emergencies the following personal protective equipment is required.

Eyes and Face: Safety glasses or goggles if risk of eye contamination

Respiratory: When engineering controls are not adequate, wear a respirator approved for protection against inorganic dusts.

US: NIOSH or MSHA approved.

Europe: CEN Class P type

Skin Protection: Gloves: Nitrile (Typical permeation breakthrough time >480 minutes)

Work Hygienic Practices

Quick drench eye wash and safety shower.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance:	White sheet
Odor:	Odorless
Odor threshold:	Not applicable
pH:	(1% solution) @ 25°C: >13
Melting point:	470°C (878°F)
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. @ 25°C (77°F): 11
Partition coefficient n-octanol/ water:	Not available
Autoignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	Not applicable
Explosive properties:	Not explosive

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	Reactive with metals
Molecular Weight	23.95

10. Stability and Reactivity

10.1 Reactivity	Reacts with acids.
10.2 Chemical stability	Stable
10.3 Possibility of hazardous reaction	Hazardous polymerization will not occur
10.4 Conditions to avoid	Contact with acids, aluminum or zinc
10.5 Incompatible materials	Acids, aluminum, zinc
10.6 Hazardous decomposition properties	None

11. Toxicological Information

11.1 Information on toxicological effects

Substance/mixture	Oral:	Dermal:	Inhalation:
Lithium Hydroxide, anhydrous	Read across data indicated acute oral category 4 classification	Based on available data, the classification criteria are not met.	Based on available data, the classification criteria are not met

11.2 Carcinogenicity, Mutagenicity, Reproductive Toxicity: No classification

Ingredient	IARC Group 1	IARC Group 2A	IARC Group 2B	NTP Known	NTP Suspect	OSHA
Lithium Hydroxide	No	No	No	No	No	No

12. Ecological Information

12.1 Toxicity: Aquatic Toxicity

Substance/mixture	Toxicity to Algae	Toxicity to Fish
Lithium Hydroxide	Based on available data, the classification criteria are not met.	Based on available data, the classification criteria are not met

12.2 Persistence and degradability

No data available for the product

12.3 Bioaccumulative potential

No data available for the product

12.4 Mobility in soil

No data available for the product

12.5 Results of PBT and vPvB assessment

No data available for the product

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 names (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

United States:

Section 311 Hazard Category (40CFR 370):

Immediate (Acute) Health Hazard

Section 313 Reportable Ingredients (40 CFR 372):

This product contains lithium carbonate which is subject to the reporting requirement of Section 313 of the Emergency Planning and Right to Know Act of 1986.

This information must be included in all SDS that are copied and distributed for this material.

Section 302 Extremely Hazardous Substances (40 CFR 355):

Not listed

CERCLA Hazardous Substances (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

Canada:

WHMIS:

Product Identification No: 2680

Hazard Classification: Class E (Corrosive)

Ingredient Disclosure List: Lithium hydroxide, anhydrous is listed

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

International Inventory Status:

Inventory/Country

Product Status

EINECS (EU)

Listed

TSCA (US)

Listed

ECL (Korea)

Listed

DSL (Canada)

Listed

15.2 Chemical Safety Assessment

The Chemical Safety Assessment has not been completed for this mixture.

16. Other Information

This material is intended for use as a Carbon Dioxide absorbent.

European Union:

R Phrases:

Causes burns

R34

Harmful if swallowed

R22

REVISION SUMMARY: Revision # 0. All sections revised. New format

This SDS has been prepared to meet European Regulation (EC) No 1907/2006 [and No 1272/2008], U. S. OSHA Hazard Communication Standard, and Canada's Workplace Hazardous Materials Information System (WHMIS) requirements.

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