




## SAFETY DATA SHEET      CALCIUM HYDROXIDE

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

<b>1.1</b>	<b>Product Identifier:</b>	Calcium Hydroxide
<b>1.1.1</b>	<b>Substances</b>	
<b>1.1.2</b>	<b>Alternate names and trade name</b>	ExtendAir® CO2 Absorbent PowerCube® CO2 Absorbent
<b>1.1.3</b>	<b>Mixture name:</b>	Not applicable
<b>1.2</b>	<b>Relevant Identified Uses of the Substance or Mixture and Uses Advised Against:</b>	An absorbent for Carbon Dioxide removal
<b>1.3</b>	<b>Details of the Supplier of the Safety Data Sheet</b>	Micropore Inc. 1000 Konica Drive Elkton, MD 21921 USA P: +1 302-731-4100 F: +1 302-731-8214
<b>1.4</b>	<b>Emergency Telephone Number</b>	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

<b>2.1 Classification of the Substance or mixture:</b>		
<b>2.1.1 GHS Classification [EC Regulation No 1272/2008 and US OSHA regulations]</b>	Skin Irritant Category 2 Eye Irritant Category 2	
<b>2.2 Label Elements:</b>		
<b>2.2.1 Hazard Pictograms(s):</b>		
<b>2.2.2 Signal Word:</b>	Warning	
<b>Hazard Statement(s):</b>	Harmful if swallowed.	H302
	Causes skin irritation	H315

	Causes serious eye irritation	H319
<b>Precautionary Statement(s):</b>	Wear protective gloves/protective clothing/eye protection/face protection	P280
	Get medical advice/attention if you feel unwell	P314
	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 ON SKIN: Wash with plenty of soap and water	P302P352
	IF SKIN IRRITATION OCCURS: Get medical advice/attention	P332 P313
<b>2.3 Other Hazards</b>	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	
Calcium Hydroxide	1305-62-0	215-137-3	not avail.	not avail.	>85%	Skin Irritant Cat. 2	H315
Sodium Hydroxide	1310-73-2	215-185-5	not avail.	not avail.	<5 %	Skin Corrosion Cat. 1A Eye Damage 1	H314 H318
Potassium Hydroxide	1310-58-3	215-181-3	not avail.	not avail.	<5 %	Skin Corrosion Cat. 1A Eye Damage 1	H314 H318
Polyethylene	9002-88-4	Not avail.	not avail.	not avail.	<10 %	Not hazardous	

### 4. First Aid Measures

#### 4.1 Description of First Aid Measures

<b>Eyes</b>	Immediately flush with water for at least 15 minutes, lifting the upper and lower eyelids intermittently. See a medical doctor or ophthalmologist immediately.
<b>Skin</b>	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.
<b>Ingestion</b>	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.
<b>Inhalation</b>	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.

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## 5. Fire-Fighting Measures

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**5.1 Extinguishing Media** Dry chemical, CO<sub>2</sub>, water spray or regular foam

**5.2 Special Hazards Arising From the Substance or Mixture**

<b>Hazardous combustion products</b>	None
<b>General Hazard</b>	None
<b>Properties contributing to Flammability</b>	None
<b>Flashpoint</b>	Not applicable
<b>Flammable limits in air</b>	Not applicable
<b>Auto ignition temperature</b>	Not applicable
<b>Sensitivity to static discharge</b>	Not applicable
<b>Sensitivity to static impact</b>	Not applicable

**5.3 Advise 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. (See Section 10 Stability and Reactivity)

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## 6. Accidental Release Measures

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**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**

Collect 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

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## 7. Handling and Storage

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**7.1 Precautions for safe handling**

Do not get in eyes, on skin or clothing. Wash thoroughly after handling. Avoid breakage or abrasion that produces dust.

**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
Calcium Hydroxide	none*	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	none*
Sodium Hydroxide	2 mg/m <sup>3</sup>	none*	none*	2 mg/m <sup>3</sup>
Potassium Hydroxide	none*	none*	none*	2 mg/m <sup>3</sup>
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:** Suitable gloves (consider your own risk assessment: e.g. breakthrough times, rates of diffusions and degradation, tasks undertaken)

#### Work Hygienic Practices

Quick drench eye wash and safety shower.

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

<b>Appearance:</b>	White sheet
<b>Odor:</b>	Odorless
<b>Odor threshold:</b>	Not applicable
<b>pH:</b>	(1% solution) @ 25°C: 12-13
<b>Melting point:</b>	Not applicable
<b>Boiling point:</b>	Not applicable
<b>Flash point:</b>	Not applicable
<b>Evaporation rate(butyl acetate = 1):</b>	Not applicable
<b>Flammability:</b>	Not flammable
<b>Flammable limits:</b>	Not applicable
<b>Vapor pressure:</b>	Not applicable
<b>Vapor density (air = 1):</b>	Not applicable
<b>Specific gravity:</b>	2.2 g/cc
<b>Solubility in water:</b>	Slightly soluble
<b>Partition coefficient n-octanol/ water:</b>	Not available
<b>Autoignition temperature:</b>	Not available
<b>Decomposition temperature:</b>	Not available
<b>Viscosity:</b>	Not applicable
<b>Explosive properties:</b>	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	Calcium Hydroxide 74.09; Sodium Hydroxide 39.99; Potassium Hydroxide 56.10

## 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, metals, chlorinated or nitrated organics
10.5	Incompatible materials	Acids, metals, chlorinated or nitrated organics
10.6	Hazardous decomposition properties	None

## 11. Toxicological Information

### 11.1 Information on toxicological effects

Substance/mixture	Oral:	Dermal:	Inhalation:
Calcium Hydroxide	LD(50) = 7300mg/kg rat	Based on available data, the classification criteria are not met.	Based on available data, the classification criteria are not met
Sodium Hydroxide	LD(lc) = 500 mg/kg rabbit	LD(50) = 1350 mg/kg rabbit	Based on available data, the classification criteria are not met
Potassium Hydroxide	LD(50) = 740 mg/kg rat	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
Calcium Hydroxide	No	No	No	No	No	No
Potassium Hydroxide	No	No	No	No	No	No
Sodium Hydroxide	No	No	No	No	No	No

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## 12. Ecological Information

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### 12.1 Toxicity: Aquatic Toxicity

Substance/mixture	Toxicity to Algae	Toxicity to Fish
Calcium Hydroxide	Based on available data, the classification criteria are not met.	LC(50) = 160 mg/L <i>Gambusia affinis</i> 96 hour

### 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

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## 13. Disposal Considerations

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### 13.1 Waste treatment methods

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

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## 14. Transport Information

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14.1 Restrictions	None, Not Regulated
14.2 DOT Number	None
14.3 UN Number	None

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## 15. Regulatory Information

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**TSCA Inventory:** This product is a mixture. The CAS numbers of all components are listed on the TSCA inventory.

Ingredient	SARA EHS (302)	SARA EHS TPQ (lbs)	CERCLA RQ (lbs)	OSHA Floor list	SARA 313
Calcium Hydroxide				Yes	
Potassium Hydroxide			1000	Yes	
Sodium Hydroxide			1000	Yes	

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## 16. Other Information

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

**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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