

# Material Safety Data Sheet

## HYDRATED LIME

Rev. Date:5/1/2008

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name:		Hi-Cal Hydrate	
Synonym/s:		Hydrate, High Calcium Hydrated Lime, Type N Hydrated Lime, HL	
Manufacturer:	US Operations:	Canadian Operations:	
	Chemical Lime Co. 3700 Hulen St. Fort Worth, TX 76107 817-732-8164	Chemical Lime Co. of Canada Inc. 20302-102B Ave. Langley, BC V1M 3H1 604-888-4333	
Emergency Phone:		Chemtrec 1-800-424-9300	
Chemical Name:	Calcium Hydroxide	WHMIS Classification:	
Chemical Family:	Alkaline Earth Hydroxide	D2A, E	
Chemical Formula:	Ca(OH) <sub>2</sub>		
Product Use/s:	Water treatment, pH adjustment, FGT, Construction, Pulp/Paper		
Prepared By:	Chemical Lime Co. R&D/Technical Services, KSA		

### SECTION 2: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	CAS	OSHA PEL, TWA 8/40h (mg/m <sup>3</sup> )	ACGIH TLV, TWA 8/40h (mg/m <sup>3</sup> )	NIOSH REL, TWA 8/40h (mg/m <sup>3</sup> )	NIOSH IDLH (mg/m <sup>3</sup> )	Conc. (%)
Calcium Hydroxide, Ca(OH) <sub>2</sub> (Hydrated Lime)	1305-62-0	15 (total dust) 5 (respirable)	5	5	N.A.	> 90
Magnesium Hydroxide, Mg(OH) <sub>2</sub> (Brucite)	1309-42-8	N.A.	N.A.	N.A.	N.A.	< 5
Magnesium Oxide, MgO (Periclase)	1309-48-4	10	10	N.A.	N.A.	< 5
Calcium Carbonate, CaCO <sub>3</sub> (Limestone)	1317-65-3 (471-34-1)	15 (total dust) 5 (respirable)	10	10 (total dust) 5 (respirable)	N.A.	< 3
Crystalline Silica, SiO <sub>2</sub> (Quartz)	14808-60-7	10/(SiO <sub>2</sub> % + 2) (respirable)	0.025 (respirable)	0.05 (respirable)	50	< 2

OSHA Regulatory Status: This material is subject to 29 CFR 1910.1200 (Hazard Communication).

**SECTION 3: HAZARDS IDENTIFICATION**

**Emergency Overview:** Hydrate is an odorless white or grayish-white powder. Contact can cause irritation to eyes, skin, respiratory system, and gastrointestinal tract.

**Potential Health Effects**

**Eyes:** Contact can cause severe irritation or burning of eyes, including permanent damage.

**Skin:** Contact can cause irritation of skin.

**Ingestion:** This product can cause severe irritation of gastrointestinal tract if swallowed.

**Inhalation:** This product can cause severe irritation of the respiratory system. Long-term exposure may cause permanent damage. Hydrate is not listed by MSHA, OSHA, or IARC as a carcinogen. However, this product may contain trace amounts of crystalline silica in the form of quartz or cristobalite, which has been classified by IARC as a Group I carcinogen to humans when inhaled. Inhalation of silica can also cause a chronic lung disorder, silicosis.

**Medical**

**Conditions Aggravated**

**by Exposure:**

Contact may aggravate disorders of the eyes, skin, gastrointestinal tract, and respiratory system.

**Potential**

**Environmental Effects:**

This material is alkaline and if released into water or moist soil will cause an increase in pH.

**SECTION 4: FIRST AID MEASURES**

**Eyes:** Immediately flush eyes with generous amounts of water or eye wash solution if water is unavailable. Pull back eyelid while flushing to ensure that all lime dust has been washed out. Seek medical attention promptly if the initial flushing of the eyes does not remove the irritant. Do not rub eyes.

**Skin:** Brush off or remove as much dry lime as possible. Wash exposed area with large amounts of water. If irritation persists, seek medical attention promptly.

**Inhalation:** Move victim to fresh air. Seek medical attention. If breathing has stopped, give artificial respiration.

**Ingestion:** Do not induce vomiting. Seek medical attention immediately. Never give anything by mouth unless instructed to do so by medical personnel.

### SECTION 5: FIRE FIGHTING MEASURES

<b>Fire Hazards:</b>	Hydrate is not combustible or flammable. However, hydrate reacts vigorously with acids, and may release heat sufficient to ignite combustible materials in specific instances. Hydrate is not considered to be an explosion hazard, although reaction with acids or other incompatible materials may rupture containers.
<b>Hazardous Combustion Products:</b>	None
<b>Extinguishing Media:</b>	Use dry chemical fire extinguisher. Do not use water or halogenated compounds, except that large amounts of water may be used to deluge small quantities of hydrate.
<b>Fire Fighting Instructions:</b>	Keep personnel away from and upwind of fire. Avoid skin contact or inhalation of dust. Wear full fire-fighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

### SECTION 6: ACCIDENTAL RELEASE MEASURES

<b>Spill / Leak Procedures:</b>	<b>Do Not</b> use water on bulk material spills. Use proper protective equipment.
<b>Small Spills:</b>	Use dry methods to collect spilled materials. Avoid generating dust. Do not clean up with compressed air. Store collected materials in dry, sealed plastic or non-aluminum metal containers. Residue on surfaces may be water washed.
<b>Large Spills:</b>	Use dry methods to collect spilled materials. Evacuate area downwind of clean-up operations to minimize dust exposure. Store spilled materials in dry, sealed plastic or non-aluminum metal containers.
<b>Containment:</b>	Minimize dust generation and prevent bulk release to sewers or waterways.
<b>Clean-up:</b>	Residual amounts of material can be flushed with large amounts of water. Equipment can be washed with either a mild vinegar and water solution, or detergent and water.

### SECTION 7: HANDLING AND STORAGE

<b>Handling:</b>	Keep in tightly closed plastic or non-aluminum metal containers. Protect containers from physical damage. Avoid direct skin contact with the material.
<b>Storage:</b>	Store in a cool, dry, and well-ventilated location. Do not store near acids or other incompatible materials. Keep away from moisture. Do not store or ship in aluminum containers.

# Material Safety Data Sheet

## HYDRATED LIME

Rev. Date:5/1/2008

### SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:** Provide ventilation adequate to maintain PELs.

**Respiratory Protection:** Use NIOSH/MSHA approved respirators if airborne concentration exceeds PELs.

**Skin Protection:** Use appropriate gloves and footwear to prevent skin contact. Clothing should fully cover arms and legs. Should lime get inside clothing or gloves, remove the clothing and the lime promptly.

**Eye Protection:** Use safety glasses with side shields or safety goggles. Contact lenses should not be worn when working with lime products.

**Other:** Eye wash fountain/stations and emergency showers should be available.

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b> White or grayish-white powder	<b>Odor:</b> Odorless	<b>Physical State:</b> Solid
<b>Boiling Point (°C/°F):</b> 2850 / 5162	<b>Melting Point (°C/°F):</b> dec 580 / 1076	<b>Specific Gravity</b> (Apparent) g/cc: 0.4 - 0.55 (True) g/cc: 2.2 - 2.4
<b>Vapor Pressure (mm Hg):</b> N.A.	<b>Vapor Density:</b> N.A.	<b>Evaporation Rate:</b> N.A.
<b>Solubility in Water</b> Slightly soluble in water.	<b>pH (25°C/77°F):</b> 12.4	

### SECTION 10: STABILITY AND REACTIVITY

**Stability:** Chemically stable, but slowly reacts with carbon dioxide to form calcium carbonate. See also Incompatibility below.

**Incompatibility/ Conditions to Avoid:** Hydrate should not be mixed or stored with the following materials, due to the potential for vigorous reaction and release of heat:

Acids (unless in a controlled process)	Organic Acid Anhydrides
Reactive Fluoridated Compounds	Nitro-Organic Compounds
Reactive Brominated Compounds	Reactive Phosphorous Compounds
Reactive Powdered Metals	Interhalogenated Compounds

**Hazardous Decomposition Products:** None

**Hazardous Polymerization:** None

**SECTION 11: TOXICOLOGICAL INFORMATION**

ORL-RAT LD50: 7,340 MG/KG  
ORL-MUS LD50: 7,300 MG/KG

Hydrated Lime is not listed by MSHA, OSHA, or IARC as a carcinogen, but this product may contain trace amounts of crystalline silica, which has been classified by IARC as carcinogenic to humans when inhaled in the form of quartz or cristobalite.

**SECTION 12: ECOLOGICAL INFORMATION**

**Ecotoxicity:** Because of the high pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems in high concentrations.

**Environmental Fate:** This material shows no bioaccumulation effect or food chain concentration toxicity.

**SECTION 13: DISPOSAL CONSIDERATIONS**

Dispose of in accordance with all applicable federal, state, and local environmental regulations. If this product as supplied, and unmixed, becomes a waste, it will not meet the criteria of a hazardous waste as defined under the U.S. Resource Conservation and Recovery Act (RCRA).

**SECTION 14: TRANSPORTATION INFORMATION**

Hydrate is not classified as a hazardous material by US DOT and is not regulated by the Transportation of Dangerous Goods (TDG) when shipped by any mode of transport.

# Material Safety Data Sheet

## HYDRATED LIME

Rev. Date:5/1/2008

### SECTION 15: REGULATORY INFORMATION

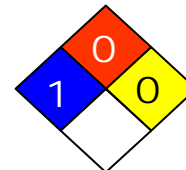
**U.S. EPA Regulations:** RCRA Hazardous Waste Number (40 CFR 261.33): not listed  
RCRA Hazardous Waste Classification (40 CFR 261): not classified  
CERCLA Hazardous Substance (40 CFR 302.4) unlisted specific per RCRA, Sec. 3001;  
CWA, Sec. 311(b)(4); CWA, Sec. 307(a), CAA, Sec. 112  
CERCLA Reportable Quantity (RQ), not listed  
SARA 311/312 Codes: not listed  
SARA Toxic Chemical (40 CFR 372.65): not listed  
SARA EHS (Extremely Hazardous Substance) (40 CFR 355): not listed, Threshold  
Planning Quantity (TPQ): not listed  
All chemical ingredients are listed on the USEPA TSCA Inventory List.

**OSHA/MSHA Regulations:** Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): 5mg/M<sup>3</sup> TWA-8  
MSHA: not listed  
OSHA Specifically Regulated Substance (29 CFR 1910): not listed

**State Regulations:** Consult state and local authorities for guidance. Components found in this product may contain trace amounts of inherent naturally occurring elements (such as, but not limited to arsenic and cadmium) that may be regulated.

**Canada:** WHMIS Classification: "D2A" Materials Causing Other Toxic Effects  
WHMIS Classification: "E" Corrosive Materials (listed due to corrosive effect on aluminum)  
Canada DSL: Listed

**NFPA Hazard Class:** Health: 1 Flammability: 0 Reactivity: 0  
**HMIS Hazard Class:** Health: 1 Flammability: 0 Reactivity: 0 Personal Protection: E



### SECTION 16: OTHER INFORMATION

**Prepared By:** Chemical Lime Company, R&D/Technical Services, KSA

*Chemical Lime Company provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person. Individuals receiving this information must consult their own technical and legal advisors and/ or exercise their own judgment in determining its appropriateness for a particular purpose. Chemical Lime Company makes no representations or warranties, either express or implied, including without limitation and warranties of merchantability or fitness for a particular purpose with respect to the information set forth herein or the product(s) to which the information refers. Accordingly, Chemical Lime Company will not be responsible or liable for any claims, losses or damages resulting from the use of or reliance upon or failure to use this information.*