Safety Data Sheet

Section 01 - Identification

Product Identifier	Calcium Hydroxide (Hydrated Lime)
Other Means of Identification	High calcium hydrated lime, lime, slaked lime, lime putty, lime slurry, milk of lime, calcium hydroxide.
Product Use and Restrictions on Use	Neutralization, flocculation, stabilization, absorption.
Initial Supplier Identifier	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7
Prepared By	ClearTech Industries Inc. Technical Writer Phone: 1 (800) 387-7503
24-Hour Emergency Phone	Phone: 1 (306) 664 – 2522

Section 02 - Hazard Identification

GHS-Classification

Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 1
STOT-Single Exposure	Category 3
STOT-Repeated Exposure	Category 1
Carcinogenicity	Category 1A

Physical Hazards

No physical hazards known.

Danger

Hazard Statements
H315 – Causes skin irritation.
H318 – Causes serious eye damage.
H335 – May cause respiratory irritation.
H372 – Causes damage to lungs through prolonged or repeated exposure.
H350 – May cause cancer.

Pictograms

Precautionary Statements

P201 – Obtain special instructions before use.
P202 – Do not handle until all safety precautions have been read and understood.
P403 + P233 – Store in a well-ventilated place. Keep container tightly closed.
P405 – Store locked up.
P308 + P313 – IF exposed or concerned: Get medical advice/attention.
P271 – Use only outdoors or in a well-ventilated area.
P260 – Do not breathe dust.
P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P280 – Wear protective gloves, protective clothing, eye protection, and face protection.
P302 + P352 – IF ON SKIN: Wash with plenty of soap and water.
P332 + P313 – If skin irritation occurs: Get medical advice/attention.
P362 + P364 – Take off contaminated clothing and wash before reuse.
P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P270 – Do not eat, drink or smoke when using this product.
P310 – Immediately call a POISON CENTER or doctor/physician.
P501 – Dispose of contents/container in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 03 - Composition / Information on Ingredients

Chemical Name	CAS Number	Weight %	Unique Identifiers
Calcium Hydroxide	1305-62-0	91.5% [+/- 0.5%]	
Crystalline Silica, Quartz	14808-60-7	0-1%	

Section 04 - First Aid Measures

Inhalation

Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate medical attention.

Skin Contact / Absorption

Remove contaminated clothing. Rinse skin with lukewarm, gently flowing water. If irritation persists, seek medical attention. Completely decontaminate clothing, shoes and leather goods before re-use or discard.

Eye Contact

Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 60 minutes, while holding the eyelid(s) open. If a contact lens is present, remove only if easy to do so. Neutral saline solution may be used as soon as it is available. Take care not to rinse contaminated water into the unaffected eye or onto the face. Seek immediate medical attention.

Ingestion

If victim is conscious, give 300mL of water, followed by diluted vinegar (1 part vinegar, 2 parts water) or fruit juice to neutralize the alkali. Do not induce vomiting. Contact a physician immediately.

Additional Information

NOTE: This product contains an ingredients that may cause cancer. Take proper precautions to ensure your own safety before assisting others.

Section 05 - Fire Fighting Measures

Suitable Extinguishing Media

Calcium hydroxide does not burn or support combustion. Use extinguishing agents compatible with calcium hydroxide and appropriate for surrounding fire. If water is used, care should be taken, since it can generate heat and cause spattering if applied directly to calcium hydroxide.

Unsuitable Extinguishing Media

DO NOT use carbon dioxide as an extinguishing agent.

Specific Hazards During Fire Fighting

Calcium hydroxide can react with metals like aluminum, tin and zinc to form flammable and explosive hydrogen gas. Corrosive calcium oxide fumes can be generated by thermal decomposition at elevated temperatures (as in a fire). Closed containers may rupture violently when heated.

Special Protective Equipment for Fire-Fighters	Wear NIOSH-approved self-contained breathing apparatus and protective clothing.
Further Information	Not Available

Section 06 - Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures	Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so. Prevent material from entering sewers. Flush with water to remove any residue.
Environmental Precautions	Do not allow entry into sewers or waterways.
Methods and Materials for Containment and Cleaning Up	Shovel or sweep up dry calcium hydroxide for recycling or disposal. Neutralize final traces and flush area with water. Spilled solutions should be contained by diking with inert materials, such as sand or earth. Solutions can be recovered or carefully diluted with water and cautiously neutralized with acids such as acetic or hydrochloric acid.

Section 07 - Handling and Storage

Precautions for Safe Handling	Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Avoid generating dusts. Prevent the release of dusts into the workplace air. Never add water to a corrosive. Always add corrosives to water. When mixing with water, stir small amounts in slowly. Use cold water to prevent excessive heat generation.
Conditions for Safe Storage	Store in a cool, dry and well-ventilated place. Keep container tightly closed, and away from incompatible materials.
Incompatibilities	Boron tri-fluoride, chlorine tri-fluoride, ethanol, fluorine, hydrogen fluoride, phosphorus pentoxide and acids.

Section 08 - Exposure Controls and Personal Protection

Exposure Limit(s)

Component	Regulation	Type of Listing	Value
Calcium Hydroxide	ACGIH	TLV-TWA	5mg/m^3
	NIOSH	REL-TWA	5mg/m^3
	OSHA	PEL-TWA	15mg/m^3 (total dust)
			5mg/m^3 (respirable fraction)
Quartz	ACGIH	TLV-TWA	0.025mg/m^3

Engineering Control(s)

Ventilation Requirements	Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions must be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.
Other	Emergency shower and eyewash must be available and tested in accordance with regulations and be in close proximity.

Protective Equipment

Eyes/Face	Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.

Hand Protection	Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.
Skin and Body Protection	Body suite, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse. Impervious boots of chemically resistant material should be worn at all times. No special footwear is required other than what is mandated at place of work.
Respiratory Protection	Respiratory protection is not normally required. If use creates dust formations, then a NIOSH-approved respirator with a dust cartridge is recommended.
Thermal Hazards	Not Available

Section 09 - Physical and Chemical Properties

Appearance

Physical State	Solid
Colour	Greyish white powder
Odour	Odorless
Odour Threshold	Not Applicable

Property

pH	12.45 (saturated solution at 25°C)
Melting Point/Freezing Point	Decomposes
Initial Boiling Point and Boiling Range	Not Applicable
Flash Point	Not Applicable
Evaporation Rate	Not Applicable
Flammability	Non-Flammable
Upper Flammable Limit	Not Applicable
Lower Flammable Limit	Not Applicable
Vapour Pressure (mm Hg, 20^{o}C)	Not Applicable
Vapour Density (Air=1)	Not Applicable
Relative Density	Not Available
Solubility(ies)	Slight soluble in water. Soluble in acids, glycerol and ammonia salt solutions; insoluble in ethanol.
Partition Coefficient: n-octanol/water	Not Applicable
Auto-ignition Temperature	Not Applicable
Decomposition Temperature	580°C
Viscosity	Not Applicable
Explosive Properties	Not Applicable

Specific Gravity (Water=1)	2.24
% Volatiles by Volume	Not Available
Formula	$Ca(OH)_2$
Molecular Weight	74.096 (anhydrous)

Section 10 - Stability and Reactivity

Reactivity	Will absorb carbon dioxide from the air to form calcium carbonate. Reacts violently with strong acids. Reacts chemically with acids and many other compounds and chemical elements to form calcium based compounds. Explosive when mixed with nitro organic compounds.
Stability	Stable under normal conditions.
Possibility of Hazardous Reactions	None known.
Conditions to Avoid	High temperatures, water, moisture, generation of dust.
Incompatible Materials	Boron tri-fluoride, chlorine tri-fluoride, ethanol, fluorine, hydrogen fluoride, phosphorus pentoxide and acids
Hazardous Decomposition Products	Corrosive calcium oxide fumes may be generated by thermal decomposition at temperatures of 580°C and above.

Section 11 - Toxicological Information

Acute Toxicity

Component	Oral LD_{50}	Dermal LD_{50}	LC_{50}
Calcium Hydroxide	7300mg/kg (mouse)	Not Available	Not Available

Chronic Toxicity – Carcinogenicity

Component	IARC
Crystalline Silica	Group 1: Carcinogenic to humans.

Skin Corrosion/Irritation	Calcium hydroxide is corrosive.
Serious Eye Damage/Irritation	Calcium hydroxide is corrosive.
Ingestion	Causes very serious damage to the mucous membranes and or other tissues in the digestive tract and may be fatal. Burning of the mouth, throat and esophagus, vomiting, diarrhea, edema (swelling) of larynx and subsequent suffocation. Perforation of gastrointestinal tract can occur.
Inhalation	Dusts or mists cause severe irritation of respiratory tract which may have the following effects: mild irritation of mucous membranes, severe pneumonitis, and destruction of lung tissue. May cause pulmonary edema.
Respiratory or Skin Sensitization	Calcium hydroxide is not known to be a respiratory sensitizer.
Germ Cell Mutagenicity	Calcium hydroxide is not known to be a mutagen. The available evidence is not adequate to conclude that quartz is a mutagen.
Reproductive Toxicity	Calcium hydroxide is not known to cause reproductive toxicity.
STOT-Single Exposure	Irritating to the respiratory tract.
STOT-Repeated Exposure	Not Available
Aspiration Hazard	Excessive inhalation of product may cause respiratory disease (silicosis, pneumoconiosis and pulmonary fibrosis) as product may contain trace amounts of crystalline silica.
Synergistic Materials	Not Available

Section 12 - Ecological Information

Ecotoxicity

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and Other Aquatic Invertebrates
Calcium Hydroxide	Not Available	LC_{50}(Clarias gariepinus, 96hr): 33.884mg/L	Not Available

Biodegradability Not Applicable

Bioaccumulation This compound shows no bioaccumulation or food chain concentration toxicity potential.

Mobility Calcium hydroxide, which is sparingly soluble, presents a low mobility in most soils.

Other Adverse Effects Not Available

Section 13 - Disposal Considerations

Waste From Residues/Unused Products Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Contaminated Packaging Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 - Transport Information

UN Number Not Regulated

UN Proper Shipping Name Not Regulated

Transport Hazard Class(es) Not Regulated

Packaging Group Not Regulated

Environmental Hazards Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.

Special Precautions Not Available

Transport in Bulk Not Available

TDG

Other Secure containers (full and/or empty) with suitable hold down devises during shipment and ensure all caps, valves, or closures are secured in the closed position.

TDG PRODUCT CLASSIFICATION: This product has been classified on the preparation date specified at section 14 of this MSDS / SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and/or published test data regarding the classification of this product are listed in the references at section 16 of this MSDS / SDS.

Section 15 - Regulatory Information

NOTE: THE PRODUCT LISTED ON THIS SDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS. THIS SDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

Section 16 - Other Information

Preparation Date August 5, 2015

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

Attention: Receiver of the chemical goods / SDS coordinator

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If you have any questions or concerns please call our customer service center.

References:

1) CHEMINFO
2) eChemPortal
3) TOXNET
4) Transportation of Dangerous Goods Canada
5) HSDB
6) PAN

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