

**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**Product Name:** High Calcium Quicklime (all sizes)  
**Synonym/s:** Lime; Hi-Cal Quicklime; Calcium Oxide; Burnt Lime; QL  
**Chemical Name:** Calcium Oxide **Chemical Formula:** CaO  
**Product Use/s:** Steel, Pulp/Paper, Water treatment, pH adjustment, FGT, Construction

<b>Manufacturer:</b>	<b>US Operations:</b>	<b>Canadian Operations:</b>
	Lhoist North America 3700 Hulen St. Fort Worth, TX 76107 817-732-8164	Lhoist North America of Canada, Inc. 20303-102B Ave. Langley, BC V1M 3H1 604-888-4333

**Emergency Phone:** Chemtrec 1-800-424-9300

**SECTION 2: HAZARDS IDENTIFICATION**

**Emergency Overview:** Quicklime is an odorless, white or grayish-white material, that ranges from pebble to a granular powder. Contact can cause irritation to eyes, skin, respiratory system, and gastrointestinal tract. Quicklime reacts vigorously with water, releasing heat which may ignite combustible materials in specific instances.

**Hazard Pictograms:**



**Potential Health Effects**

- Eyes:** Contact can cause severe irritation or burning of eyes, including permanent damage.
- Skin:** Contact can cause severe irritation or burning of skin, especially in the presence of moisture.
- Ingestion:** This product can cause severe irritation or burning of gastrointestinal tract if swallowed.
- Inhalation:** This product can cause severe irritation of the respiratory system. Long-term exposure may cause permanent damage. Quicklime 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.

**Potential Environmental Effects:** This material is alkaline and if released into water or moist soil will cause an increase in pH.

**SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS**

Ingredient	Chemical Formula	Common Name	Conc. (%)	CAS
Calcium Oxide	CaO	Quicklime	> 90	1305-78-8
Magnesium Oxide	MgO	Periclase	< 5	1309-48-4
Calcium Carbonate	CaCO <sub>3</sub>	Limestone	< 3	1317-65-3
Crystalline Silica	SiO <sub>2</sub>	Quartz	< 2	14808-60-7

(Crystalline Silica is reported as total silica and not just the respirable fraction)

**SECTION 4: FIRST AID MEASURES**

<b>Eyes:</b>	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.
<b>Skin:</b>	Brush off or remove as much dry lime as possible. Wash exposed area with large amounts of water. If burned seriously or if irritation persists, seek medical attention promptly.
<b>Inhalation:</b>	Move victim to fresh air. Seek medical attention. If breathing has stopped, give artificial respiration.
<b>Ingestion:</b>	Do not induce vomiting. Seek medical attention immediately. Never give anything by mouth unless instructed to do so by medical personnel.
<b>Medical Conditions Aggravated by Exposure:</b>	Contact may aggravate disorders of the eyes, skin, gastrointestinal tract, and respiratory system.

**SECTION 5: FIREFIGHTING MEASURES**

<b>Fire Hazards:</b>	Quicklime is not combustible or flammable. However, quicklime reacts vigorously with water, and may release heat sufficient to ignite combustible materials in specific instances. Quicklime is not considered to be an explosion hazard, although reaction with water or other incompatible materials, such as acids, may rupture containers.
<b>Suitable Extinguishing Media:</b>	Use dry chemical or CO <sub>2</sub> fire extinguisher to extinguish the surrounding fire.
<b>Unsuitable Extinguishing Media:</b>	Do not use water, unless it is added in excess to flood the fire.
<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).
<b>Hazardous Combustion Products:</b>	Not applicable

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

<b>Spill / Leak Procedures:</b>	<b>Do Not</b> use water on bulk material spills. Lime reacts vigorously with water, releasing heat. 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. Avoid breathing any dust.
<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.

**SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**

Ingredient	OSHA PEL, TWA 8/40h (mg/m3)	ACGIH TLV, TWA 8/40h (mg/m3)	NIOSH REL, TWA 8/40h (mg/m3)	NIOSH IDLH (mg/m3)
Calcium Oxide, CaO	5	2	2	25
Magnesium Oxide, MgO	10	10	n/a	n/a
Calcium Carbonate, CaCO <sub>3</sub>	15 (total dust) 5 (respirable)	10	10 (total dust) 5 (respirable)	n/a
Crystalline Silica, SiO <sub>2</sub>	10/(SiO <sub>2</sub> % + 2) (respirable)	0.025 (respirable)	0.05 (respirable)	50

**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 and the potential for burns. 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 lumps or powder	<b>Odor:</b> Odorless	<b>Physical State:</b> Solid
<b>Melting Point (°C/°F):</b> 2570 / 4658	<b>Boiling Point (°C/°F):</b> n/a	<b>Bulk Density:</b> 58-67 lbs/ ft3
<b>Specific Gravity</b> (Apparent) g/cc: 1.6-2.8 (True) g/cc: 3.0 - 3.4		
<b>Vapor Pressure (mm Hg):</b> n/a	<b>Vapor Density:</b> n/a	<b>Evaporation Rate:</b> n/a
<b>pH (25°C/77°F):</b> 12.4	<b>Solubility in Water:</b> Reacts with water to produce Ca(OH) <sub>2</sub> and large amounts of heat. Solubility is 0.8 g/L at 25 °C	

**SECTION 10: STABILITY AND REACTIVITY**

**Stability:** Chemically stable, but reacts vigorously with water to form calcium hydroxide, while generating heat. Quicklime also reacts with carbon dioxide to form calcium carbonate. See also Incompatibility below.

**Hazardous Decomposition/ Products:** Does not occur

**Hazardous Polymerization:** Does not occur

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

Water (unless in a controlled process)	Organic Acid Anhydrides
Acids (unless in a controlled process)	Nitro-Organic Compounds

Reactive Fluoridated Compounds	Reactive Phosphorous Compounds
Reactive Brominated Compounds	Interhalogenated Compounds
Reactive Powdered Metals	

## SECTION 11: TOXICOLOGICAL INFORMATION

No LD50/LC50 have been identified for this product's components. Quicklime 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.

Inhalation, skin and eye contact are the most likely routes of exposure. This material is irritating to the skin and severely irritating to the eyes.

## 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 (> 1 g/L).

**Environmental Fate:** This material shows no bioaccumulation effect or food chain concentration toxicity. High pH values will rapidly decrease over time as a result of recarbonation. This material may be used in soil stabilization or remediation and will show very little mobility in soils.

## 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

Quicklime is not classified as a hazardous material by the US DOT and is not regulated by the Transportation of Dangerous Goods (TDG) when shipped by means other than air.

**UN Number:** UN 1910                      **UN Proper Shipping Name:** Calcium oxide  
**Transport Hazard Class:** Class 8, Corrosive                      **Packing Group III**  
**Environmental Hazards:** None

When being transported by air, quicklime is classified in the Department of Transportation (DOT) regulations as a hazardous material. (49 CFR 172.101). For passenger aircraft, the maximum net quantity allowed per container is 25 kg (please refer to IATA packing instruction number 860 for more information). For cargo aircraft, the maximum net quantity allowed per container is 100 kg (see IATA packing instruction number 864). For quantities greater than 25 kg up to and including 100 kg, the container shall be labeled with "CARGO AIRCRAFT ONLY." Because express carriers (i.e., Federal Express, Airborne Express, and United Parcel Service) ship by air, quicklime presented to these carriers for shipment must be packaged, marked, and labeled in accordance with IATA requirements, and must be accompanied by the appropriate shipping documentation. Only personnel trained and certified under applicable DOT Hazardous Materials Regulations (contained in Title 49 of the Code of Federal Regulations) may prepare any quicklime product for air transport.

**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 US EPA 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 under California Proposition 65 and other States regulations.

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

**SECTION 16: OTHER INFORMATION**

**Prepared By:** Lhoist North America, Technical Services  
**Date Prepared:** August 6, 2012 **Revision:** 2012-3



**NFPA Hazard Class:** Health: 3 Flammability: 0 Instability: 0 W

**HMIS Hazard Class:** Health: 3\* Flammability: 0 Hazard: 1 Personal Protection: E

**Abbreviations:**  
 N/A Not Available or Not Applicable  
 IARC International Agency for Research on Cancer  
 IATA International Air Transport Association  
 ACGIH American Conference of Governmental Industrial Hygienists  
 TWA Time Weighted Average  
 PEL Permissible Exposure Limit  
 TLV Threshold Limit Value  
 REL Recommended Exposure Limit

*Lhoist North America 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. Lhoist North America 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, Lhoist North America 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.*