

MATERIAL SAFETY DATA SHEET**CALCIUM OXIDE**

PRODUCT CODE NUMBER(S): 2660-1

PRODUCT IDENTIFICATION**Chemical Name and Synonyms:** *Calcium oxide; Lime; Quicklime; Unslaked lime; Fluxing lime***Chemical Family:** *Alkaline earth oxide***Chemical Formula:** *CaO***Product Use:** *Laboratory reagent***Manufacturer's Name and Address:***Caledon Laboratories Ltd.
40 Armstrong Avenue
Georgetown, Ontario L7G 4R9***Telephone No:** *(905) 877-0101***Fax No:** *(905) 877-6666***Emergency Telephone No:** *CANUTEC (613) 996-6666***HAZARDOUS INGREDIENTS OF MATERIALS**

<i>Ingredients</i>	<i>%</i>	<i>TLV Units</i>	<i>CAS No.</i>
<i>Calcium oxide</i>	<i>>97</i>	<i>2 mg/m³</i>	<i>1305-78-8</i>

PHYSICAL DATA**Physical State:** *Solid***Odour and Appearance:** *White or grayish-white lumps or granular powder, odourless***Odour Threshold (ppm):** *Odourless***Vapour Pressure (mm Hg):** *Not applicable***Vapour Density (Air = 1):** *Not applicable***Evaporation Rate:** *Not applicable***Boiling Point (degrees C):** *2850°C***Melting Point (degrees C):** *2570°C***pH:** *12.5 (saturated solution)***Specific Gravity:** *3.3 to 3.4 at 20°C***Coefficient of Water/Oil distribution:** *Not available***SHIPPING DESCRIPTION****UN:** *Not regulated***T.D.G. Class:** *Not regulated***Pkg. Group:** *Not regulated***REACTIVITY DATA****Chemical Stability:** *Stable. Readily absorbs carbon dioxide and water from air.***Incompatibility with other substances:** *Avoid water, strong acids, fluorine, chlorine, boron trifluoride and hydrofluoric acid. Reacts with water to form calcium hydroxide, generating a large amount of heat. May react violently with strong acids or with chlorine or boron trifluoride. Fluorine attacks calcium oxide generating heat and light. Dry calcium oxide is not corrosive; solutions may corrode aluminum.***Reactivity:** *Avoid elevated temperatures, incompatible materials, generation of dust.***Hazardous Decomposition Products:** *None known***FIRE AND EXPLOSION DATA****Flammability:** *Non combustible. Reaction with other materials can generate sufficient heat to ignite nearby combustible materials (see "Incompatibility . . .")***Extinguishing Media:** *Use any means suitable for surrounding fire. Use flooding quantities of water as spray. Do not use carbon dioxide or halogenated extinguishing agents. Fight fire from a safe distance, from upwind. Firefighters must wear protective equipment and clothing (encapsulating chemical resistant suit) sufficient to prevent inhalation of fumes or vapours and contact with skin and eyes. Bunker gear will not be adequate.***Flash Point (Method Used):** *Not applicable***Autoignition Temperature:** *Not applicable***Upper Flammable Limit (% by volume):** *Not applicable***Lower Flammable Limit (% by volume):** *Not applicable***Hazardous Combustion Products:** *Stable to 2850°C. Emits toxic and irritating fumes in intense heat of fire.***Sensitivity to Impact:** *None identified***Sensitivity to Static discharge:** *None identified***TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD₅₀:** *Not available***LC₅₀:** *Not available***Effects of Acute Exposure to Product:****Inhaled:** *Irritating. Can cause severe irritation of the nose, throat and lungs. Causes coughing and sneezing which limits the damage. Severe overexposure may cause spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema, even death. Symptoms of pulmonary edema, shortness of breath, cyanosis, chest pain, may not be evident until 24-72 hours after exposure.***In contact with skin:** *Irritating. Can cause severe irritation and burns with superficial destruction of the skin, sometimes with little or no pain. A powerful caustic to living tissue. Severity depends on the concentration and duration of exposure.***In contact with eyes:** *Corrosive. Solid reacts with moisture and protein in the eye to form clumps of moist compound which are difficult to remove. Cornea can be severely burned, causing permanent damage, even blindness. Severity of damage depends on the concentration and duration of exposure.***Ingested:** *Low oral toxicity. However, it is corrosive, and will cause burning and corrosion of the mouth, throat and esophagus, vomiting and diarrhea, and stomach cramps, possible shock and collapse.*

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Effects of Chronic Exposure to Product:

Prolonged or repeated skin contact may cause dermatitis. Chronic inhalation may cause nasal septum ulceration and perforation.

Carcinogenicity: No human or animal information available

Teratogenicity: No human or animal information available

Reproductive Effects: No human or animal information available

Mutagenicity: No information available

Synergistic Products: None known

PREVENTIVE MEASURES

Engineering Controls: Local, corrosion-proof, exhaust ventilation required.

Respiratory Protection: Dust masks. Fumehood. Up to 10 mg/m³, NIOSH/MSHA approved dust and mist respirator. Up to 20 mg/m³, supplied-air respirator. Up to 25 mg/m³, supplied-air respirator operated in continuous-flow mode, or powered air-purifying respirator with high efficiency particulate cartridge, or full-facepiece respirator with high efficiency particulate filter, or full-facepiece self-contained breathing apparatus, or full-facepiece supplied-air respirator. For emergency or unknown concentrations, positive pressure, full-facepiece self-contained breathing apparatus.

Eye Protection: Chemical safety goggles, face shield.

Skin Protection: Natural rubber, neoprene, or nitrile rubber gloves and other resistant body-covering clothing.

Other Personal Protective Equipment: Safety shower and eye-wash fountain in work area.

Leak and Spill Procedure: Evacuate and ventilate area. Cleanup personnel must be thoroughly trained in the handling of hazardous materials, and must wear protective equipment and clothing sufficient to prevent inhalation and contact with skin, eyes, and clothing. Do not touch spilled material. Do not use water until cleanup is complete. Gather carefully in a manner that does not generate dust. Collect solids in container for disposal. Keep material from entering sewers or waterways. Neutralize final traces carefully with acetic or hydrochloric acid (may generate heat and fumes). After cleanup is complete, carefully flush the spill area with large amounts of water.

Waste Disposal: Follow all federal, provincial and local regulations for disposal.

Handling Procedures and Equipment: CORROSIVE. Workers using this material must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Avoid generating dust or mist. Avoid skin or eye contact. Use the smallest amount possible for the purpose, in designated areas with adequate ventilation. Use good housekeeping practices to limit dust and keep work area free of extraneous materials. Use corrosion-resistant equipment and containers. When diluting, always add corrosive to water, not water to corrosive. Add cold water slowly, stirring constantly. Keep containers tightly closed when not in use and when empty. Empty containers may contain hazardous residues; treat with caution.

Storage Requirements: Store in water-tight, labelled containers in a cool, dry well-ventilated place separate from the normal work area. Keep containers tightly closed and away from water and incompatible materials. Do not store in area equipped with emergency water sprinklers. Protect from damage and inspect frequently for signs of leaking or corrosion. Storage area shelving, floors, lighting and ventilation systems should be made of materials resistant to corrosion.

FIRST AID MEASURES**Specific Measures:**

Eyes: Blot or brush away excess material and immediately flush eyes thoroughly with large quantities of gently running water for at least thirty (30) minutes, holding eyelids open while flushing. Take care not to flush contaminated water into unaffected eye. Wear gloves to avoid contact with this chemical. Get medical attention immediately.

Skin: Remove contaminated clothing (including watches, rings, belts and shoes). Flush skin with plenty of running water for at least thirty (30) minutes. Wear gloves to avoid contact with this chemical. **DO NOT INTERRUPT FLUSHING.** Get medical attention immediately.

Inhalation: Remove to fresh air. Give oxygen and get medical attention immediately for any breathing difficulty. If exposure is severe, and there is risk of pulmonary edema, monitor victim for 24-72 hours; symptoms can develop after this length of time.

Ingestion: If victim is alert and NOT convulsing, rinse mouth thoroughly with water, and give 2 to 4 glasses of water or milk to drink to dilute. Do not induce vomiting. If spontaneous vomiting occurs, rinse mouth and give more water or milk to drink. Get medical attention immediately.

REFERENCES USED

CCINFO disc: Cheminfo, March 2007

Budavari: The Merck Index, 12th ed., 1997

Sax: Dangerous Properties of Industrial Materials, 5th ed., 1979

Royal Society of Chemistry: Chemical Safety Data Sheets, Vol.2, 1989

Suppliers' Material Safety Data Sheets

ADDITIONAL INFORMATION

Date Issued: February 20, 1990

Revision: March 2010

MSDS: 2660-1

Proposed WHMIS Designation: E

Prepared by: Caledon Laboratories Ltd. (905) 877-0101
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