



MATERIAL SAFETY DATA SHEET

MSDS nr:

CALCIUM OXIDE

CO001

1. COMPANY AND PRODUCT IDENTIFICATION

Company Information: Bontebok Lime Works (pty) ltd t/a P & B Lime Works
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: 028 424 1157 (tel) / 028 424 1428 (fax)

Synonyms: Unslaked lime, burnt lime, quicklime

Molecular Weight: 56.08

Chemical Formula: CaO

2. COMPOSITION AND INFORMATION ON HAZARDS

| Ingredient | Percentage | Hazardous |
|---------------|------------|-----------|
| Calcium Oxide | 70% - 88% | Yes |

3. HAZARDS IDENTIFICATION

DANGER: CAUSES SEVERE IRRITATION AND BURNS TO EVERY AREA OF CONTACT. HARMFUL IF SWALLOWED OR INHALED.

Inhalation: Inhalation of dust is highly irritating and possibly corrosive to the upper respiratory tract. May cause coughing, sneezing, labored breathing, and possibly burns with perforation of the nasal septum.

Ingestion: Corrosive. May attack the esophagus. Abdominal pain, nausea, vomiting may result. May cause serious alkali burns in mouth and throat.

Skin Contact: Irritant; may cause severe corrosive damage.

Eye Contact: Severe irritant, may damage eye tissues. Causes redness, tearing, blurred vision, pain.

Chronic Exposure: Chronic inhalation of dust may cause inflammation of the respiratory passages, ulcers of the mucous membranes, and possible perforation of nasal septum.

Aggravation of existing Conditions: Persons with existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

4. FIRST AID MEASURES

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician, immediately. Wash clothing before reuse.

Eye Contact: Wash thoroughly with running water. Get medical advice if irritation develops.

5. FIRE FIGHTING MEASURES

Fire: Not considered to be a fire hazard. Lime and water can react exothermically with sufficient heat to ignite combustible materials in certain instances.

Explosion: Not considered to be an explosion hazard. The combination of lime and water at high temperatures may be explosive.

Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Ventilate area of leak or spill.

Keep unnecessary and unprotected people away from area of spill.

Wear appropriate personal protective equipment as specified in Section 8.

Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

7. HANDLING AND STORAGE

Keep in a tightly closed container.

Protect from physical damage.

Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities.

This strongly alkaline material will swell and generate heat when moistened and could burst container.

Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Airborne Exposure Limits:

OSHA Permissible Exposure Limit (PEL): 5 mg/m³ (TWA).

ACGIH Threshold Limit Value (TLV): 2 mg/m³ (TWA)

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Personal Respirators:

If the exposure limit is exceeded and engineering controls are not feasible, a full face piece particulate respirator may be worn for up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Pebbles and powder.

Colour: White

Odor: Odorless.

Solubility: Slightly soluble in water with release of heat, formation of calcium hydroxide.

Specific Gravity: 3.37

pH: 12.5 Saturated solution in water

% Volatiles by volume @ 21°C (70°F): 0°

Boiling Point: 2850°C (5162°F)

Melting Point: 2572°C (4662°F)

Vapor Density (Air=1): 1.9

Vapor Pressure (mm Hg): No information found.

Evaporation Rate (BuAc=1): No information found.

10. STABILITY AND REACTIVITY

Stability: Stable at room temperature in sealed containers.

Hazardous Decomposition Products: No hazardous decomposition products.

Hazardous Polymerization: Will not occur.

Incompatibilities: Water, acids, humid air, hydrogen fluoride, phosphorous pentoxide, boric oxide, steam, many organic substances.

Conditions to Avoid: Air, moisture, and incompatibles

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals: LD50: Not available. LC50: Not available

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans:

Very hazardous in case of skin contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects:

Skin - Causes skin irritation and burns.

Eyes - Causes eye irritation and burns.

Inhalation - Material is irritating to respiratory tract and mucous membranes and upper respiratory tract.

Ingestion - May be harmful if swallowed. Irritates gastrointestinal tract with possible burns.

Swallowing may become painful, and difficult. A burning pain extends down the esophagus to the stomach. May affect respiration. Vomitous is thick and slimy due to mucous. Later is may contain blood shred of mucous membrane due to necrosis.

12. ECOLOGICAL INFORMATION

Environmental Fate:

No information found.

Environmental Toxicity:

This material is expected to be toxic to aquatic life

13. DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility.

Processing, use or contamination of this product may change the waste management options.

Dispose of container and unused contents in accordance with national and local requirements.

14. TRANSPORT INFORMATION

When transporting Calcium Oxide always ensure that the load is properly covered with water resistant tarpaulin as the exposure of Calcium Oxide to water will combust.

It is recommended that the product are transported on a pallet whether is in 25kg bags or 1 ton bulk bags.

15. REGULATION AND LEGISLATION

National Environmental Management: Air Quality Act, 39 of 2004 prescribes maximum emission levels of SO₂ and NO_x

Mine Health and Safety Act, 29 of 1996 prescribes the personal protective equipment to be worn

SANS 9001:2008 (ISO 9001:2008) – Quality Management Systems (ISBN 978-0-626-22214-7)

16. DISCLAIMER

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