
CALCIUM OXIDE

1. Product Identification

Synonyms: Lime unslaked; lime burnt; quicklime; calx; lime purified

CAS No.: 1305-78-8

Molecular Weight: 56.08

Chemical Formula: CaO

Product Codes:

J.T. Baker: 1410, 1414

Mallinckrodt: 0204, 3530, 4243, 4248, 4268

2. Composition/Information on Ingredients

| Ingredient | CAS No | Percent | Hazardous |
|---------------|-----------|---------|-----------|
| Calcium Oxide | 1305-78-8 | 100% | Yes |

3. Hazards Identification

Emergency Overview

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

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 2 – Moderate

Flammability Rating: 0 – None

Reactivity Rating: 2 – Moderate

Contact Rating: 3 – Severe

Lab Protective Equip: GOGGLES &SHIELD; LAB COAT &APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: Green (General Storage)

Potential Health Effects

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 Pre-existing Conditions:

Persons with pre-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 facepiece 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. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece particulate respirator (NIOSH type N100 filters) 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. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece 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:

White to slightly yellowish powder.

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 @ 21C (70F):

0

Boiling Point:

2850C (5162F)

Melting Point:

2572C (4662F)

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

| Ingredient | ---NTP Carcinogen--- | | IARC Category |
|---------------------------|----------------------|-------------|---------------|
| | Known | Anticipated | |
| Calcium Oxide (1305-78-8) | No | No | None |

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. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: NOT REGULATED

Hazard Class:

UN/NA: Packing Group:

Information reported for product/size:

International (Water, I.M.O.)

Proper Shipping Name: NOT REGULATED

Hazard Class:

UN/NA: Packing Group:

Information reported for product/size:

International (Air, I.C.A.O.)

Proper Shipping Name: CALCIUM OXIDE

Hazard Class: 8

UN/NA: UN1910

Packing Group: III

Information reported for product/size: 100LB

15. Regulatory Information

| Ingredient | -----\Chemical Inventory Status - Part 1\----- | | | |
|---------------------------|--|-----|-------|-----------|
| | TSCA | EC | Japan | Australia |
| Calcium Oxide (1305-78-8) | Yes | Yes | Yes | Yes |

| Ingredient | -----\Chemical Inventory Status - Part 2\----- | | | |
|---------------------------|--|-----|------|-------|
| | Korea | DSL | NDSL | Phil. |
| Calcium Oxide (1305-78-8) | Yes | Yes | No | Yes |

| Ingredient | -----\Federal, State & International Regulations - Part 1\----- | | | |
|---------------------------|---|-----|------|------------------------------|
| | -SARA 302- RQ | TPQ | List | -SARA 313- Chemical Catg. |
| Calcium Oxide (1305-78-8) | No | No | No | No |

| Ingredient | -----\Federal, State & International Regulations - Part 2\----- | |
|---------------------------|---|--------|
| | -RCRA- | -TSCA- |
| Calcium Oxide (1305-78-8) | No | No |

CALCIUM OXIDE

| Ingredient | CERCLA | 261.33 | 8(d) |
|------------------------------------|--------|--------|------|
| ----- Calcium Oxide (1305-78-8) | No | No | No |

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
Reactivity: Yes (Pure / Solid)

Australian Hazchem Code: None allocated.

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: **1** Flammability: **0** Reactivity: **1**

Label Hazard Warning:

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

Label Precautions:

Do not get in eyes, on skin, or on clothing.

Do not breathe dust.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Label First Aid:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes.

Wash clothing before reuse. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases call a physician.

Product Use:

Laboratory Reagent.

Revision Information:

MSDS Section(s) changed since last revision of document include: 3, 14.

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