

***Product Name: Calcium Oxide -Burnt Lime***

Calcium oxide (CaO), Commonly known as quicklime or burnt lime, is a widely used chemical compound. It is a white, caustic, alkaline, crystalline solid at room temperature. The broadly used term "lime" connotes calcium-containing inorganic materials, in which carbonates, oxides and hydroxides of calcium, silicon, magnesium, aluminum, and iron predominate. By contrast, "quicklime" specifically applies to the single chemical compound calcium oxide. Calcium oxide that survives processing without reacting in building products such as cement is called free lime.

Quicklime is relatively inexpensive. Both it and a chemical derivative (calcium hydroxide, of which quicklime is the base anhydride) are important commodity chemicals.

***SECTION 1-PRODUCT AND COMPANY IDENTIFICATION***

<b>Classification / Type</b>	<b>Oxides / Lime, quick lime, burnt lime &amp; calcium oxide.</b>
<b>Appearance</b>	<b>White to pale yellow or brown powder or lumps.</b>
<b>Molecular formula / Molecular Weight</b>	<b>CaO / 56.0774 gm/mole</b>
<b>CAS No.</b>	<b>1305-78-8</b>
<b>Density</b>	<b>3.34 gm/cm3</b>
<b>Packaging Detail</b>	<b>Bulk and jumbo bags (1.1-1.5) ton</b>
<b>PH value</b>	<b>12.8</b>
<b>Melting Point</b>	<b>2572 °C</b>
<b>Boiling Point</b>	<b>2850 °C</b>
<b>Solubility</b>	<b>Very slightly soluble in cold water &amp; hot water, Soluble in glycerol, sugar solution &amp; acids, Practically insoluble in alcohols &amp; Insoluble in methanol, diethyl ether, n-octanol.</b>

**Company contact:**

<b>Company name</b>	<b>Saudi lime industries company (SAUDILIME)</b>
<b>Location</b>	<b>KSA, Riyadh, 2<sup>nd</sup> industrial city, Al-Kharj road.</b>
<b>Telephone</b>	<b>00966112651929</b>
<b>Website &amp; E-mail</b>	<b><a href="http://www.saudilime.com">www.saudilime.com</a> - <a href="mailto:info@saudilime.com">info@saudilime.com</a></b>

## SECTION 2-COMPOSITION AND INFORMATION ON INGREDIENTS

Name	Calcium oxide	Magnesium oxide	Silicon dioxide	Iron oxide	Aluminum oxide	Potassium oxide	Sulphur trioxide
Symbol	CaO Total	MgO	SiO <sub>2</sub> &Insol.	Fe <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	SO <sub>3</sub>
% by weight	90.00 %	1.00 %	1.50 %	0.35 %	0.40 %	0.15 %	0.35 %
Range	Min.	Max.	Max.	Max.	Max.	Max.	Max.
CAS No.	1305-78-8	1309-48-4	14808-60-7	1309-37-1	1344-28-1	12136-45-7	7446-11-9

## SECTION 3- HAZARDS IDENTIFICATION

### Potential Acute Health Effects:

Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive). The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe overexposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

### Potential Chronic Health Effects:

**CARCINOGENIC EFFECTS:** Not available.

**MUTAGENIC EFFECTS:** Not available.

**TERATOGENIC EFFECTS:** Not available.

**DEVELOPMENTAL TOXICITY:** Not available.

Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

**SECTION 4- FIRST AID MEASURES****Eye Contact:**

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.

Cold water may be used. WARM water MUST be used.

Get medical attention immediately.

**Skin Contact:**

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

Cover the irritated skin with an emollient.

Wash clothing before reuse.

Thoroughly clean shoes before reuse.

Get medical attention immediately.

**Serious Skin Contact:**

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream.

Seek medical attention.

**Inhalation:**

If inhaled, remove to fresh air. If not breathing, give artificial respiration.

If breathing is difficult, give oxygen.

Get medical attention.

**Serious Inhalation:**

Evacuate the victim to a safe area as soon as possible.

Loosen tight clothing such as a collar, tie, belt or waistband.

If breathing is difficult, administer oxygen.

If the victim is not breathing, perform mouth-to-mouth resuscitation.

WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive.

Seek immediate medical attention.

**Ingestion:**

Do NOT induce vomiting unless directed to do so by medical personnel.

Never give anything by mouth to an unconscious person.

If large quantities of this material are swallowed, call a physician immediately.

Loosen tight clothing such as a collar, tie, belt or waistband.

**Serious Ingestion:** Not available.

**SECTION 5- FIRE FIGHTING MEASURES**

**Flammability of the Product:** Non-flammable.

**Auto-Ignition Temperature:** Not applicable.

**Flash Points:** Not applicable.

**Flammable Limits:** Not applicable.

**Products of Combustion:** Not available.

**Fire Hazards in Presence of Various Substances:** Not applicable.

**Explosion Hazards in Presence of Various Substances:**

Risks of explosion of the product in presence of mechanical impact: Not available.

Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions:** Not applicable.

**Special Remarks on Fire Hazards:** Chlorine Trifluoride reacts violently with calcium oxide producing flame.

**Special Remarks on Explosion Hazards:** Not available.

**SECTION 6- ACCIDENTAL RELEASE MEASURES**

**Small Spill:**

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large Spill:**

Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

**SECTION 7- HANDLING AND STORAGE**

**Precautions:**

Keep container dry, do not breathe dust, never add water to this product.

In case of insufficient ventilation, wear suitable respiratory equipment.

If you feel unwell, seek medical attention and show the label when possible.

Avoid contact with skin and eyes.

Keep away from incompatibles such as organic materials, acids, moisture.

**Storage:** Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 24°C (75.2°F).

## **SECTION 8- EXPOSURE CONTROLS/ PERSONAL PROTECTION**

### **Engineering Controls:**

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

### **Personal Protection:**

Splash goggles, Lab coat, Dust respirator & Gloves.  
Be sure to use an approved/certified respirator or equivalent.

### **Personal Protection in Case of a Large Spill:**

Splash goggles, Full suit. Dust respirator, Boots & Gloves.  
A self-contained breathing apparatus should be used to avoid inhalation of the product.  
Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

### **Exposure Limits:**

TWA: 10 (mg/m<sup>3</sup>) from ACGIH (TLV) [United States] Inhalation Total. TWA: 10  
STEL: 20 (mg/m<sup>3</sup>) [Canada] Inhalation  
Total. TWA: 5 (mg/m<sup>3</sup>) from OSHA (PEL) [United States] Inhalation Respirable.  
TWA: 15 from OSHA (PEL) [United States]  
Inhalation Total. Consult local authorities for acceptable exposure limits.

## **SECTION 9- PHYSICAL AND CHEMICAL PROPERTIES**

**Physical state and appearance:** Solid. (Crystalline solid.), powder or fine powder.

**Odor:** Odorless.

- **Taste:** Not available.

**Molecular Weight:** 56.08 g/mole

- **Color:** White.

**PH (1% soln/water):** 10 [Basic.]

- **Boiling Point:** 2850°C (5162°F)

**Melting Point:** 2572°C (4661.6°F).

- **Critical Temperature:** Not available.

**Specific Gravity:** 3.33 (Water = 1)

- **Vapor Pressure:** Not applicable.

**Vapor Density:** Not available.

- **Volatility:** Not available.

**Odor Threshold:** Not available.

- **Water/Oil Dist. Co-eff.:** Not available.

**Ionicity (in Water):** Not available.

- **Dispersion Properties:** Not available.

**Solubility:** Soluble in acids, glycerol, sugar solution. Practically insoluble in alcohol.  
Very slightly soluble in cold water, hot water.

Insoluble in methanol, diethyl ether, n-octanol.

**SECTION 10- STABILITY AND REACTIVITY DATA**

**Stability:** The product is stable. - **Instability Temperature:** Not available.  
**Conditions of Instability:** Incompatible materials  
**Incompatibility with various substances:** Reactive with organic materials, acids, moisture.  
**Corrosivity:** Not available.  
**Special Remarks on Reactivity:**  
Absorbs CO<sub>2</sub> from air & Reacts with water.  
Reacts with fluorine to evolve much heat and some light.  
Addition of water to Quicklime has generated temperatures as high as 800 C.  
Some reports describe the reaction as violent. In water, calcium oxide forms calcium hydroxide generating a large quantity of heat.  
Ignition of sulfur, gunpowder, wood, and straw by heat of Quicklime-water reaction has been reported.  
Liquid hydrofluoric acid and calcium oxide react very violently.  
Calcium reacts with phosphorous pent oxide extremely violently when initiated by local heating.  
Lime becomes incandescent when heated to near its melting point (2500 C).  
**Polymerization:** Will not occur. - **Special Remarks on Corrosivity:** Not available.

**SECTION 11- TOXICOLOGICAL INFORMATION**

**Routes of Entry:**  
Absorbed through skin, Dermal contact, Eye contact, Inhalation & Ingestion.  
**Toxicity to Animals:** LD<sub>50</sub>: Not available. LC<sub>50</sub>: 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.

### ***SECTION 12- ECOLOGICAL INFORMATION***

**Ecotoxicity:** Not available.

- **BOD5 and COD:** Not available.

**Products of Biodegradation:** Possibly hazardous short-term degradation products are not likely. However, long- term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The product itself and its products of degradation are not toxic.

**Special Remarks on the Products of Biodegradation:** Not available.

### ***SECTION 13- DISPOSAL CONSIDERATIONS***

**Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

### ***SECTION 14- TRANSPORT INFORMATION***

**Identification:** Calcium Oxide, bulk or jumbo bags

**Special Provisions for Transport:** Not available.

### ***SECTION 15- OTHER REGULATORY INFORMATION***

**Federal and State Regulations:**

Connecticut hazardous material survey: Calcium oxide Illinois toxic substances disclosure to employee act: Calcium oxide

Rhode Island RTK hazardous substances: Calcium oxide Pennsylvania RTK:

Calcium oxide Minnesota: Calcium oxide

Massachusetts RTK: Calcium oxide California Director's List of Hazardous

Substances: Calcium oxide TSCA 8(b) inventory:

Calcium oxide TSCA 8(a) chemical risk rules: Calcium oxide.

**Other Regulations:**

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

**Other Classifications:**

1- **WHMIS (Canada):** CLASS E: Corrosive solid.

2- **DSCL (EEC):** R38- Irritating to skin. R41- Risk of serious damage to eyes.

S2- Keep out of the reach of children. S26- In case of contact with eyes, rinse

immediately with plenty of water and seek medical advice. S39- Wear eye/face

protection. S46- If swallowed, seek medical advice immediately and show this container or label.

### 3- Hazardous Material Identification System (HMIS) In USA:

Health Hazard: 3 - Fire Hazard: 0 - Reactivity: 2 - Personal Protection: j

### 4- National Fire Protection Association (NFPA) In USA:

Health: 3 - Flammability: 0 - Reactivity: 1

#### Protective Equipment:

- \* Gloves, Synthetic apron Vapor and dust respirator.
- \* Be sure to use an approved/certified respirator or equivalent.
- \* Wear appropriate respirator when ventilation is inadequate & Splash goggles.

## SECTION 16- OTHER INFORMATION

### SAUDI LIME INDUSTRIES COMPANY (SAUDI LIME)

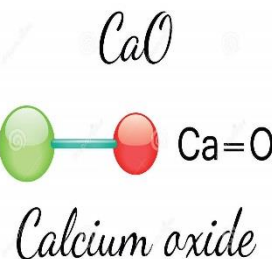
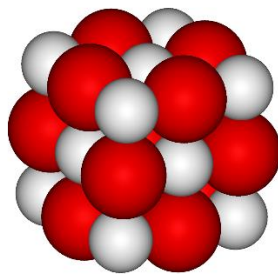


**An industrial edifice making an exceptional mark in adapting technology & a closed joint stock company founded by a group of businessmen in the Kingdom of Saudi Arabia and Kuwait with the participation of the Public Authority for Social Insurance in the Kingdom to form an integrated system for producing:**

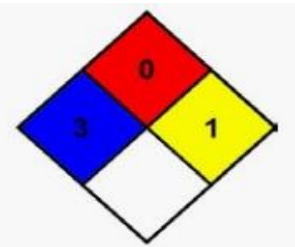
**Calcium carbonate, Quick Lime, Hydrated Lime, Dolomite, Burnt dolomite, Dolomitic Hydrated lime and Sand Lime Bricks.**

**All mentioned data is considering a common data.**

**Created:** 01/06/2012 as version1, **First Update:** 01/03/2017 as version2, **2<sup>nd</sup> Update:** 01/07/2018 as version3 & **3<sup>rd</sup> Update:** 01/08/2019 as version4 & last update 01/08/2021 as version 5 .



Health	3
Fire	0
Reactivity	2
Personal Protection	J



End