

## Chemical Safety Data Sheet MSDS / SDS

## Calcium oxide SDS

Revision Date:2024-04-25 Revision Number:1

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****Product identifier**

Product name: Calcium oxide  
CAS: 1305-78-8

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.  
Uses advised against: none

**Company Identification**

Company: Chemicalbook.in  
Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090  
Telephone: +91 9550333722

**SECTION 2: Hazards identification****Classification of the substance or mixture**

Skin irritation, Category 2  
Serious eye damage, Category 1

Specific target organ toxicity - single exposure, Category 3

### GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

### Hazard statement(s)

H315 Causes skin irritation

H318 Causes serious eye damage

H335 May cause respiratory irritation

### Precautionary statement(s)

### Prevention

P264 Wash ... thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

### Response

P302+P352 IF ON SKIN: Wash with plenty of water/...

P321 Specific treatment (see ... on this label).

P332+P317 If skin irritation occurs: Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

P317 Get medical help.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P319 Get medical help if you feel unwell.

### Storage

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

### Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Other hazards which do not result in classification**

no data available

**SECTION 3: Composition/information on ingredients**

**Substance**

Chemical name: Calcium oxide

Common names and synonyms: Calcium oxide

CAS number: 1305-78-8

EC number: 215-138-9

Concentration: 100%

**SECTION 4: First aid measures**

**Description of necessary first-aid measures**

**If inhaled**

Fresh air, rest. Refer for medical attention.

**Following skin contact**

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

**Following eye contact**

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

**Following ingestion**

Rinse mouth. Do NOT induce vomiting. Give nothing to drink. Refer for medical attention .

**Most important symptoms/effects, acute and delayed**

Causes burns on mucous membrane and skin. Inhalation of dust causes sneezing. (USCG, 1999)

#### **Indication of immediate medical attention and special treatment needed, if necessary**

Immediate first aid: Remove patient from contact with the material. Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Inorganic Bases/Alkaline Corrosives and Related Compounds/

### **SECTION 5: Firefighting measures**

#### **Suitable extinguishing media**

Extinguish fire using agent suitable for surrounding fire. Use flooding quantities of water as spray. DO NOT use carbon dioxide or halogenated extinguishing agents.

#### **Specific hazards arising from the chemical**

Excerpt from ERG Guide 157 [Substances - Toxic and/or Corrosive (Non-Combustible / Water-Sensitive)]: Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. For UN1796, UN1826, UN2031 at high concentrations and for UN2032, these may act as oxidizers, also consult ERG Guide 140. Vapors may accumulate in confined areas (basement, tanks, hopper/tank cars, etc.). Substance may react with water (some violently), releasing corrosive and/or toxic gases and runoff. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated or if contaminated with water. (ERG, 2016)

#### **Special protective actions for fire-fighters**

In case of fire in the surroundings, use appropriate extinguishing media.

### **SECTION 6: Accidental release measures**

#### **Personal precautions, protective equipment and emergency procedures**

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered dry containers.

### **Environmental precautions**

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered dry containers.

### **Methods and materials for containment and cleaning up**

1) Ventilate area of spill. 2) Collect spilled material in most convenient and safe manner and deposit in sealed containers for reclamation or for disposal in secured sanitary landfill.

## **SECTION 7: Handling and storage**

### **Precautions for safe handling**

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### **Conditions for safe storage, including any incompatibilities**

Separated from strong acids, organic chemicals, water and food and feedstuffs. Dry. Keep tightly closed and dry.

## **SECTION 8: Exposure controls/personal protection**

### **Control parameters**

### **Occupational Exposure limit values**

TLV: 2 mg/m<sup>3</sup>, as TWA. MAK: (inhalable fraction): 1 mg/m<sup>3</sup>; peak limitation category: I(2); pregnancy risk group: C. EU-OEL: (respirable fraction): 1 mg/m<sup>3</sup> as TWA; 4 mg/m<sup>3</sup> as STEL

### **Biological limit values**

no data available

### **Appropriate engineering controls**

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### **Individual protection measures, such as personal protective equipment (PPE)**

### Eye/face protection

Wear safety goggles or eye protection in combination with breathing protection.

### Skin protection

Protective gloves. Protective clothing.

### Respiratory protection

Use local exhaust or breathing protection.

### Thermal hazards

no data available

## SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Solid. Powder.
Colour:	Beige.
Odour:	Odorless
Melting point/freezing point:	> 450 °C. Remarks:No significant thermal events were obtained during Determination 1 (atmosphere: air (static)) and Determination 2 (atmosphere: nitrogen). Residue: beige powder.
Boiling point or initial boiling point and boiling range:	2 850 °C. Atm. press.:101.325 kPa.
Flammability:	Noncombustible Solid, but will support combustion by liberation of oxygen.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	2850°C
Auto-ignition temperature:	> 400 °C.
Decomposition temperature:	no data available

pH:	SATURATED SOLN IN WATER IS ABOUT 12.8
Kinematic viscosity:	no data available
Solubility:	Reacts with water (NIOSH, 2016)
Partition coefficient n-octanol/water:	no data available
Vapour pressure:	0 mm Hg (approx) (NIOSH, 2016)
Density and/or relative density:	3.31. Temperature:22 °C.
Relative vapour density:	no data available
Particle characteristics:	no data available

## SECTION 10: Stability and reactivity

### Reactivity

The solution in water is a medium strong base. Reacts with water. This generates sufficient heat to ignite combustible materials. Reacts violently with acids, halogens and metals.

### Chemical stability

Readily absorbs carbon dioxide and water from air, becoming airslaked.

### Possibility of hazardous reactions

Not combustible, but bulk powder may heat spontaneously when damp with water. A base and an oxidizing agent. Neutralizes acids with generation of heat. Nonflammable, but will support combustion by liberation of oxygen, especially in the presence of organic materials. Reacts very violently with liquid hydrofluoric acid [Mellor 2, Supp. 1:129 1956]. Reacts extremely violently with phosphorus pentoxide when reaction is initiated by local heating [Mellor 8 Supp.3:406 1971].

### Conditions to avoid

no data available

### **Incompatible materials**

Addn of water to quicklime has generated temp as high as 800 deg C. Some reports describe reaction as violent. Ignition of sulfur, gunpowder, wood, and straw by heat of quicklime-water reaction has been reported.

### **Hazardous decomposition products**

Decomposition product: calcium hydroxide.

## **SECTION 11: Toxicological information**

### **Acute toxicity**

Oral: LD50 - rat (female) - > 2 000 mg/kg bw.

Inhalation: LC50 - rat (male/female) - > 6.04 mg/L air (nominal).

Dermal: LD50 - rabbit (male/female) - > 2 500 mg/kg bw.

### **Skin corrosion/irritation**

no data available

### **Serious eye damage/irritation**

no data available

### **Respiratory or skin sensitization**

no data available

### **Germ cell mutagenicity**

no data available

### **Carcinogenicity**

no data available

### **Reproductive toxicity**



no data available

#### **STOT-single exposure**

The substance is corrosive to the eyes, skin and respiratory tract. The effects may be delayed. Medical observation is indicated.

#### **STOT-repeated exposure**

Repeated or prolonged contact with skin may cause dermatitis. Repeated or prolonged inhalation of dust particles may cause effects on the lungs. Repeated or prolonged inhalation may cause nasal ulceration. This may result in perforation of the nasal septum.

#### **Aspiration hazard**

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

### **SECTION 12: Ecological information**

#### **Toxicity**

Toxicity to fish: LC50 - *Oncorhynchus mykiss* (previous name: *Salmo gairdneri*) - 50.6 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - 49.1 mg/L - 48 h. Remarks: From regression curve.

Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - 184.57 mg/L - 72 h.

Toxicity to microorganisms: EC50 - activated sludge of a predominantly domestic sewage - 300.4 mg/L - 3 h. Remarks: Respiration rate.

#### **Persistence and degradability**

no data available

#### **Bioaccumulative potential**

no data available

#### **Mobility in soil**

no data available

**Other adverse effects**

no data available

**SECTION 13: Disposal considerations****Disposal methods****Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

**Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

**SECTION 14: Transport information****UN Number**

ADR/RID: UN1910 (For reference only, please check.)

IMDG: UN1910 (For reference only, please check.)

IATA: UN1910 (For reference only, please check.)

**UN Proper Shipping Name**

ADR/RID: CALCIUM OXIDE (For reference only, please check.)

IMDG: CALCIUM OXIDE (For reference only, please check.)

IATA: CALCIUM OXIDE (For reference only, please check.)

**Transport hazard class(es)**

ADR/RID: 8 (For reference only, please check.)

IMDG: 8 (For reference only, please check.)

IATA: 8 (For reference only, please check.)

**Packing group, if applicable**

ADR/RID: III (For reference only, please check.)

IMDG: III (For reference only, please check.)

IATA: III (For reference only, please check.)

**Environmental hazards**

ADR/RID: No

IMDG: No

IATA: No

**Special precautions for user**

no data available

**Transport in bulk according to IMO instruments**

no data available

**SECTION 15: Regulatory information**

**Safety, health and environmental regulations specific for the product in question**

**European Inventory of Existing Commercial Chemical Substances (EINECS)**

Listed.

**EC Inventory**

Listed.

**United States Toxic Substances Control Act (TSCA) Inventory**

Listed.

**China Catalog of Hazardous chemicals 2015**

Not Listed.

**New Zealand Inventory of Chemicals (NZIoC)**

Listed.

**(PICCS)**

Listed.

**Vietnam National Chemical Inventory**

Listed.

**IECSC)**

Listed.

**Korea Existing Chemicals List (KECL)**

Listed.

## **SECTION 16: Other information**

### **Abbreviations and acronyms**

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

### **References**

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:  
[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website:  
<http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

### **Other Information**

Reacts violently with fire extinguishing agents such as water. Clumps of calcium oxide formed by reaction with moisture and proteins in the eye are difficult to remove by irrigation. Manual removal by a physician is necessary. NEVER pour water into this substance; when dissolving or diluting always add it slowly to the water.

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any