

## Chemical Safety Data Sheet MSDS / SDS

## Calcium dihydroxide 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 dihydroxide

CAS: 1305-62-0

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

Relevant identified uses: For R&amp;D use only. Not for medicinal, household or other use.

Uses advised against: none

**Company Identification**

Company: Chemicalbook.in

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**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 dihydroxide

Common names and synonyms: Calcium dihydroxide

CAS number: 1305-62-0

EC number: 215-137-3

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**

Dust irritates eyes, nose and throat. (USCG, 1999)

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

no data available

## **SECTION 5: Firefighting measures**

### **Suitable extinguishing media**

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

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

Not combustible.

### **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 containers. Then store and dispose of according to local regulations.

### **Environmental precautions**

Personal protection: P2 filter respirator for harmful particles. Sweep spilled substance into covered containers. Then store and dispose of according to local regulations.

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

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

## 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.

## SECTION 8: Exposure controls/personal protection

### Control parameters

### Occupational Exposure limit values

TLV: 5 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; (respirable fraction): 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, face shield 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:                                                   | Off white.                                                                                                                                                                          |
| Odour:                                                    | no data available                                                                                                                                                                   |
| 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: | Decomposes (NIOSH, 2016)                                                                                                                                                            |
| Flammability:                                             | Noncombustible Solid                                                                                                                                                                |
| Lower and upper explosion limit/flammability limit:       | no data available                                                                                                                                                                   |
| Flash point:                                              | no data available                                                                                                                                                                   |
| Auto-ignition temperature:                                | Not flammable (USCG, 1999)                                                                                                                                                          |
| Decomposition temperature:                                | at 580°C                                                                                                                                                                            |
| pH:                                                       | no data available                                                                                                                                                                   |
| Kinematic viscosity:                                      | no data available                                                                                                                                                                   |
| Solubility:                                               | 0.2 % at 32° F (NIOSH, 2016)                                                                                                                                                        |
| Partition coefficient n-octanol/water:                    | no data available                                                                                                                                                                   |
| Vapour pressure:                                          | 0 mm Hg (approx) (NIOSH, 2016)                                                                                                                                                      |

|                                  |                           |
|----------------------------------|---------------------------|
| Density and/or relative density: | 2.22. Temperature: 20 °C. |
| Relative vapour density:         | no data available         |
| Particle characteristics:        | no data available         |

## SECTION 10: Stability and reactivity

### Reactivity

Decomposes on heating. This produces calcium oxide. The solution in water is a medium strong base. Reacts violently with acids. Attacks many metals in the presence of water. This produces flammable/explosive gas (hydrogen - see ICSC 0001).

### Chemical stability

no data available

### Possibility of hazardous reactions

The nitroparaffins, nitromethane, nitropropane, etc. form salts with inorganic bases such as CALCIUM HYDROXIDE. The dry salts are explosive [Chem. Eng. news 30:2344 1952]. Bases are chemically similar to sodium hydroxide (NaOH) or sodium oxide (Na<sub>2</sub>O). They neutralize acids exothermically to form salts plus water. When soluble in water they give solutions having a pH greater than 7.0. Mixing these materials with water can generate troublesome amounts of heat as the base is dissolved or diluted. Bases react with certain metals (such as aluminum and zinc) to form oxides or hydroxides of the metal and generate gaseous hydrogen. Bases may initiate polymerization reactions in polymerizable organic compounds, especially epoxides). They may generate flammable and/or toxic gases with ammonium salts, nitrides, halogenated organics, various metals, peroxides, and hydroperoxides. Materials of this group often serve as catalysts. A strong base. Forms caustic solution in water [Merck 11th ed. 1989].

### Conditions to avoid

no data available

### Incompatible materials

CHEMICAL PROFILE: The nitroparaffins, nitromethane, nitropropane, etc. form salts with inorganic bases such as calcium hydroxide. The dry salts are explosive (Chem. Eng. news 30:2344 1952). (REACTIVITY, 1999)

## **Hazardous decomposition products**

no data available

## **SECTION 11: Toxicological information**

### **Acute toxicity**

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

Inhalation: no data available

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 and skin. The substance is irritating to the respiratory tract. 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.

#### **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: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (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/>

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