

# SAFETY DATA SHEET

Version 6.5  
Revision Date 27.06.2025  
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## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : Calcium oxide

Product Number : 248568  
Brand : SIGALD  
CAS-No. : 1305-78-8

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

### 1.3 Details of the supplier of the safety data sheet

Company : MilliporeSigma Canada Ltd.  
2149 WINSTON PARK DRIVE  
OAKVILLE ON L6H 6J8  
CANADA

Telephone : +1 905 829-9500  
Fax : +1 905 829-9292

### 1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 CHEMTREC  
(International)  
24 Hours/day; 7 Days/week

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## SECTION 2. HAZARDS IDENTIFICATION

### GHS classification in accordance with the Hazardous Products Regulations

Skin irritation : Category 2  
Serious eye damage : Category 1  
Specific target organ toxicity - single exposure : Category 3 (Respiratory system)  
Short-term (acute) aquatic hazard : Category 3

### GHS label elements

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Hazard pictograms



Signal Word

: Danger

Hazard Statements

: H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H335 May cause respiratory irritation.  
H402 Harmful to aquatic life.

Precautionary statements

**Prevention:**

P261 Avoid breathing dust.  
P264 Wash skin thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ eye protection/ face protection.

**Response:**

P302 + P352 IF ON SKIN: Wash with plenty of water.  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.  
P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.

**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 approved waste disposal plant.

**Other hazards**

Reacts with water to form corrosive calcium hydroxide, with evolution of heat. Temperatures as high as 800° C have been reached with

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture

: Substance

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The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada

**Millipore  
Sigma**

## Components

Chemical name	CAS-No.	Concentration (% w/w)
calcium oxide	1305-78-8	$\geq 80 - \leq 100$ *

\* Actual concentration or concentration range is withheld as a trade secret

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## SECTION 4. FIRST AID MEASURES

- General advice : Show this safety data sheet to the doctor in attendance.
- If inhaled : After inhalation: fresh air.
- In case of skin contact : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- In case of eye contact : After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.
- If swallowed : After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.
- Most important symptoms and effects, both acute and delayed : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
- Protection of first-aiders : For personal protection see section 8.
- Notes to physician : No data available

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## SECTION 5. FIREFIGHTING MEASURES

- Unsuitable extinguishing media : Water  
Foam
- Specific hazards during fire fighting : Not combustible.
- Ambient fire may liberate hazardous vapours.
- Hazardous combustion products : Nature of decomposition products not known.
- Specific extinguishing methods : No data available

- Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.
- Special protective equipment for fire-fighters : Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Advice for non-emergency personnel:  
 Avoid inhalation of dusts.  
 Avoid substance contact.  
 Ensure adequate ventilation.  
 Evacuate the danger area, observe emergency procedures, consult an expert.  
 Advice for emergency responders:  
 For personal protection see section 8.
- Environmental precautions : Do not let product enter drains.
- Methods and materials for containment and cleaning up : Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10).  
 Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

## SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

- Further information on storage conditions : Tightly closed.  
 Dry.
- Storage class : 11, Combustible Solids
- Recommended storage temperature : Recommended storage temperature see product label.
- Further information on storage stability : Store under inert gas.  
 Moisture sensitive.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of	Control parameters /	Basis
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		exposure)	Permissible concentration	
calcium oxide	1305-78-8	TWAEV	2 mg/m <sup>3</sup>	CA QC OEL
		TWA	2 mg/m <sup>3</sup>	CA AB OEL
		TWA	2 mg/m <sup>3</sup>	CA BC OEL
		TWA	2 mg/m <sup>3</sup>	ACGIH

**Engineering measures** : No data available

### Personal protective equipment

Respiratory protection : required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: : Filter type P2

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

#### Hand protection

Material : Nitrile rubber  
 Break through time : 480 min  
 Glove thickness : 0.11 mm  
 Protective index : Full contact  
 Manufacturer : KCL 741 Dermatril® L

Material : Nitrile rubber  
 Break through time : 480 min  
 Glove thickness : 0.11 mm  
 Protective index : Splash contact  
 Manufacturer : KCL 741 Dermatril® L

Remarks : This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Eye protection : Use equipment for eye protection tested and

approved under appropriate government standards such as NIOSH (US) or EN 166(EU).  
Tightly fitting safety goggles

Skin and body protection : protective clothing

Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : powder

Color : beige

Odor : odourless

Odor Threshold : Not applicable

pH : 12.6 (20 °C)  
(saturated solution)

Melting point/ range : > 450 °C  
Method: Regulation (EC) No. 440/2008, Annex, A.1  
GLP: yes

Boiling point/boiling range : 2,850 °C  
Method: lit.

Flash point : Not applicable

Evaporation rate : No data available

Burning rate : No data available

Upper explosion limit /  
Upper flammability limit : Not applicable

Lower explosion limit /  
Lower flammability limit : Not applicable

Vapor pressure : No data available

Relative vapour density : No data available

Relative density : 3.31 (22 °C)  
Method: Regulation (EC) No. 440/2008, Annex, A.3

	GLP: yes
Density	: 3.3 g/mL (25 °C) Method: lit.
Solubility(ies)	
Water solubility	: 1.3376 g/l (20 °C) pH: 12.3 Method: Regulation (EC) No. 440/2008, Annex, A.6 GLP: yes
Partition coefficient: n-octanol/water	: Not applicable for inorganic substances
Autoignition temperature	: not combustible
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: Not applicable
Viscosity, kinematic	: No data available
Flow time	: No data available
Explosive properties	: Not classified as explosive.
Oxidizing properties	: none
Molecular weight	: 56.08 g/mol
Particle characteristics	
Particle size	: No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No data available
Chemical stability	: The product is chemically stable under standard ambient conditions (room temperature) .
Possibility of hazardous reactions	: Risk of explosion with: Hydrogen halides Risk of ignition or formation of inflammable gases or vapours with: Alcohols Hydrogen fluoride hydrogen sulphide Exothermic reaction with:

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halogen-halogen compounds  
Fluorine  
Hydrazine hydrate  
Glycerine  
Acids  
sugars  
Water

Conditions to avoid : Avoid moisture.  
no information available

Incompatible materials : No data available

Hazardous decomposition : In the event of fire: see section 5  
products

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - female - > 2,000 mg/kg

(OECD Test Guideline 425)

LC50 Inhalation - Rat - male and female - 4 h - > 6.04 mg/l - dust/mist

(OECD Test Guideline 436)

Dermal: No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: Severe skin irritation

(OECD Test Guideline 404)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Risk of serious damage to eyes.

(OECD Test Guideline 405)

#### Respiratory or skin sensitization

No data available

#### Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

#### Carcinogenicity

No data available

#### Reproductive toxicity

No data available

#### Specific target organ toxicity - single exposure

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Inhalation - May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

RTECS: EW3100000

Cough, Shortness of breath, Headache, Nausea, Vomiting

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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**SECTION 12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Components:**

**calcium oxide:**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 50.6 mg/l End point: mortality Exposure time: 96 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 203 GLP: yes The value is given in analogy to the following substances: Calcium hydroxide
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 49.1 mg/l End point: Immobilization Exposure time: 48 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 202 GLP: yes The value is given in analogy to the following substances: Calcium hydroxide
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata): 184.57 mg/l Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes
Toxicity to daphnia and other aquatic	:	NOEC (Crangon crangon (shrimp)): 32 mg/l End point: mortality

invertebrates (Chronic toxicity)

Exposure time: 14 d  
Remarks: (ECHA)

Toxicity to microorganisms

: EC50 (activated sludge): 300.4 mg/l  
Exposure time: 3 h  
Test Type: static test  
Method: OECD Test Guideline 209  
GLP: yes

### Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

### Persistence and degradability

#### Components:

##### calcium oxide:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

### Bioaccumulative potential

#### Components:

##### calcium oxide:

Partition coefficient: n-octanol/water : Remarks: Not applicable for inorganic substances

### Mobility in soil

No data available

### Other adverse effects

No data available

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### IATA-DGR

UN/ID No. : UN 1910  
Proper shipping name : Calcium oxide

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Class : 8  
Packing group : III  
Labels : Class 8 - Corrosive substances  
Packing instruction (cargo : 864  
aircraft)  
Packing instruction : 860  
(passenger aircraft)

#### **IMDG-Code**

Not regulated as a dangerous good

#### **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

#### **National Regulations**

#### **TDG**

Not regulated as a dangerous good

#### **Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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### **SECTION 15. REGULATORY INFORMATION**

#### **Canadian lists**

No substances are subject to a Significant New Activity Notification.

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### **SECTION 16. OTHER INFORMATION**

#### **Full text of other abbreviations**

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
CA AB OEL : Canada. Alberta, Occupational Health and Safety Code  
(table 2: OEL)  
CA BC OEL : Canada. British Columbia OEL  
CA QC OEL : Québec. Regulation respecting occupational health  
and safety, Schedule 1, Part 1: Permissible exposure  
values for airborne contaminants  
ACGIH / TWA : 8-hour, time-weighted average  
CA AB OEL / TWA : 8-hour Occupational exposure limit  
CA BC OEL / TWA : 8-hour time weighted average  
CA QC OEL / TWAEV : Time-weighted average exposure value

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally  
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Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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