



MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Date of issue: 03/11/2013

Version 1.0

SECTION 1. Identification

Product identifier

Product number	841799
Product name	Calcium hypochlorite for synthesis

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

Identified uses	Chemical for synthesis
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Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 290 Concord Road, Billerica, MA 01821, United States of America SDS Phone Support: +1-978-715-1335 General Inquiries: +1-978-715-4321 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) e-mail: mm_sds@merckgroup.com
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification

GHS Classification

Oxidizing solid, Category 2, H272
Acute toxicity, Category 4, Oral, H302
Skin corrosion, Category 1B, H314
Acute aquatic toxicity, Category 1, H400
Chronic aquatic toxicity, Category 1, H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



Signal Word
Danger

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Hazard Statements

H272 May intensify fire; oxidizer.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements

P210 Keep away from heat.

P221 Take any precaution to avoid mixing with combustibles, heavy-metal compounds, acids and alkalis.

P273 Avoid release to the environment.

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

P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	Ca(OCl) ₂	CaCl ₂ O ₂ (Hill)
CAS-No.	7778-54-3	
Molar mass	142.98 g/mol	

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

calcium hypochlorite (>= 90 % - <= 100 %)

7778-54-3

SECTION 4. First aid measures

Description of first-aid measures

General advice

First aider needs to protect himself.

Inhalation

After inhalation: fresh air. Call in physician.

Skin contact

After skin contact: wash off with plenty of water. Immediately remove contaminated clothing. If available swab with polyethylene glycol 400. Call a physician immediately.

Eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

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Ingestion

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation!). Call a physician immediately. Do not attempt to neutralize.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, Shortness of breath
Risk of blindness!

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Sand, Cement

Unsuitable extinguishing media

Carbon dioxide (CO₂), Water, Foam

Special hazards arising from the substance or mixture

Not combustible.

Oxidizing

May not get in touch with:

Water

Ambient fire may liberate hazardous vapors.

Fire may cause evolution of:

Hydrogen chloride gas

Advice for firefighters

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.

Further information

Cool closed containers exposed to fire with water spray. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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: Protective equipment see section 8.

Environmental precautions

Do not empty into drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

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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

Precautions for safe handling

Observe label precautions.

Keep workplace dry. Do not allow product to come into contact with water.

Conditions for safe storage, including any incompatibilities

Tightly closed. Dry. Protected from light. Separately or together with other oxidizing substances only and away from sources of ignition and heat. Because of their oxidation potential these products can raise the burning rate of combustible substances substantially or ignite combustible substances on contact with them.

Store at +15°C to +25°C (+59°F to +77°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Contains no substances with occupational exposure limit values.

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Tightly fitting safety goggles

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:

protective clothing

Respiratory protection

required when dusts are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state tablets

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Color	white
Odor	of chlorine
Odor Threshold	No information available.
pH	No information available.
Melting point	100 °C
Boiling point	No information available.
Flash point	not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapor pressure	No information available.
Relative vapor density	No information available.
Relative density	2.35 g/cm ³ at 68 °F (20 °C)
Water solubility	200 g/l at 68 °F (20 °C) (decomposition)
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	> 351 °F (> 177 °C)
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Ignition temperature	not applicable

SECTION 10. Stability and reactivity

Reactivity

See below

Chemical stability

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heat-sensitive
Sensitivity to light

Possibility of hazardous reactions

A risk of explosion and/or of toxic gas formation exists with the following substances:

Water, acids

Risk of explosion with:

ferric oxide, ethanol, glycerol, Methanol, carbon/soot, Organic Substances, acetic acid, with, potassium cyanide

Violent reactions possible with:

phenol, combustible substances, Alcohols, Alkali metals, Amines, ammonium compounds, Halogenated hydrocarbon, mercaptans, metallic oxides, organic nitro compounds, Reducing agents, sulfur

Conditions to avoid

Heating (decomposition).

Incompatible materials

no information available

Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact, Ingestion

Acute oral toxicity

LD50 rat: 850 mg/kg (RTECS)

absorption

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Acute inhalation toxicity

Symptoms: mucosal irritations, Cough, Shortness of breath, Inhalation may lead to the formation of oedemas in the respiratory tract., Possible damages:, damage of respiratory tract

Corrosive to respiratory system

Acute dermal toxicity

LD50 rabbit: > 2,000 mg/kg
(IUCLID)

Skin irritation

rabbit

Result: Causes burns.

(IUCLID)

Causes burns.

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Eye irritation

Causes serious eye damage. Risk of blindness!

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

Decomposition of the substance with tissue moisture.

After absorption:

We have no description of any toxic symptoms.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

LC50 *Lepomis macrochirus* (Bluegill sunfish): 0.049 - 0.16 mg/l; 96 h (IUCLID)

Toxicity to daphnia and other aquatic invertebrates

EC50 *Daphnia magna* (Water flea): 0.11 mg/l; 48 h (ECOTOX Database)

Toxicity to algae

IC50 algae: 2 mg/l; 72 h (Lit.)

Persistence and degradability

No information available.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

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Other adverse effects

Additional ecological information

Harmful effect due to pH shift.

Forms corrosive mixtures with water even if diluted.

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number Not permitted for transport
UN 1748

Proper shipping name CALCIUM HYPOCHLORITE, DRY Not permitted for transport

Class 5.1

Air transport (IATA)

UN number UN 1748

Proper shipping name CALCIUM HYPOCHLORITE, DRY

Class 5.1

Packing group II

Environmentally hazardous --

Special precautions for user no

Sea transport (IMDG)

UN number UN 1748

Proper shipping name CALCIUM HYPOCHLORITE, DRY

Class 5.1

Packing group II

Environmentally hazardous --

Special precautions for user yes
Not permitted for transport

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Oxidizer

Water Reactive

Harmful if swallowed.

Corrosive to skin

Corrosive by inhalation.

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This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards

Reactivity Hazard
Acute Health Hazard

SARA 313

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Ingredients

calcium hypochlorite

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Ingredients

calcium hypochlorite

DEA List I

Not listed

DEA List II

Not listed

Massachusetts Right To Know

Ingredients

calcium hypochlorite

Pennsylvania Right To Know

Ingredients

calcium hypochlorite

New Jersey Right To Know

Ingredients

calcium hypochlorite

Notification status

TSCA: On TSCA Inventory

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

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Full text of H-Statements referred to under sections 2 and 3.

H272	May intensify fire; oxidizer.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Date of issue:03/11/2013

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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