

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Trade name	<b>Chlorine granules inorganic</b>
Identification of the substance	Calcium hypochlorite
CAS number	7778-54-3
SDS-Ref	07518, 07518B

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

Relevant identified uses	Water treatment chemical Professional use Consumer use (private households)
Uses advised against	Do not use for squirting or spraying Do not use for products which come into direct contact with the skin

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

Steinbach International GmbH  
L. Steinbach Platz 1  
4311 Schwertberg  
Austria  
Telephone: +43 7262 61431 1000  
e-Mail: info@steinbach-group.com  
e-Mail (competent person): sdb@steinbach-group.com

#### 1.4 Emergency telephone number

Country	Name	Postal code/city	Telephone	Opening hours
Austria	Vergiftungsinformationszentrale	1090 Wien	+43 1 406 4343 (24h)	
United Kingdom	National Poisons Information Service		111 (24h)	

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Category	Hazard class and category	Hazard statement
2.14	oxidising solid	2	Ox. Sol. 2	H272
3.10	acute toxicity (oral)	4	Acute Tox. 4	H302
3.2	skin corrosion/irritation	1B	Skin Corr. 1B	H314
3.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
4.1A	hazardous to the aquatic environment - acute hazard	1	Aquatic Acute 1	H400

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis. Spillage and fire water can cause pollution of watercourses.

#### 2.2 Label elements

Labelling

- Signal word
- Pictograms

GHS03, GHS05,  
GHS07, GHS09



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Replaces version: GHS 8 (2023-01-19)

- Hazard statements
  - H272 May intensify fire; oxidiser.
  - H302 Harmful if swallowed.
  - H314 Causes severe skin burns and eye damage.
  - H400 Very toxic to aquatic life.
- Precautionary statements
  - P101 If medical advice is needed, have product container or label at hand.
  - P102 Keep out of reach of children.
  - P220 Keep/store away from clothing/combustible materials.
  - P280 Wear protective gloves/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.
  - P310 Immediately call a POISON CENTER/doctor.
  - P501 Dispose of contents/container to hazardous or special waste collection point.
- Supplemental hazard information
  - EUH031 Contact with acids liberates toxic gas.
  - EUH206 Warning! Do not use together with other products. May release dangerous gases (chlorine).

### 2.3 Other hazards

#### Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

#### Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of  $\geq 0,1\%$ .

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Name of substance	Calcium hypochlorite
CAS No	7778-54-3
EC No	231-908-7
Index No (GB CLP)	017-012-00-7

Specific Conc. Limits	M-Factors	ATE	Exposure route
Skin Corr. 1B; H314: $C \geq 5\%$ Skin Irrit. 2; H315: $1\% \leq C < 5\%$ Eye Dam. 1; H318: $3\% \leq C < 5\%$ Eye Irrit. 2; H319: $0.5\% \leq C < 3\%$	M-factor (acute) = 10	850 mg/kg	oral

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Take off immediately all contaminated clothing. Symptoms may develop several hours following exposure; medical observation therefore necessary for at least 48 hours. In case of unconsciousness place person in the recovery position. Never give anything by mouth. Self-protection of the first aid-er.

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### Following inhalation

Mouth to mouth resuscitation should be avoided. Use alternative methods, preferably with oxygen or compressed air driven apparatus. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

### Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In all cases of doubt, or when symptoms persist, seek medical advice.

### Following ingestion

Rinse mouth with water (only if the person is conscious). Let be drunken in little sips: 0, 1-0,2l Water. Do NOT induce vomiting. Call a physician immediately.

## 4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

## 4.3 Indication of any immediate medical attention and special treatment needed

None.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media

Water, Foam, Alcohol resistant foam, ABC-powder

Unsuitable extinguishing media

Water jet

### 5.2 Special hazards arising from the substance or mixture

Oxidising property.

Hazardous combustion products

Hydrogen chloride (HCl), Chlorine (Cl<sub>2</sub>)

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

## SECTION 6: Accidental release measures

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

For non-emergency personnel

Remove persons to safety. Ventilate affected area.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

### 6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains. Take up mechanically.

### Advice on how to clean up a spill

Take up mechanically.

### Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

## 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Recommendations

- Measures to prevent fire as well as aerosol and dust generation  
Use only in well-ventilated areas. Use local and general ventilation.
- Specific notes/details  
Dust deposits may accumulate on all deposition surfaces in a technical room.
- Handling of incompatible substances or mixtures  
Do not mix with acids.
- Keep away from  
Organic absorbing material, Pulp/paper

#### Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingsuffs.

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

#### Managing of associated risks

- Explosive atmospheres  
Removal of dust deposits.
- Flammability hazards  
Keep valves and fittings free from oil and grease.
- Incompatible substances or mixtures  
Keep/store away from clothing/combustible materials. Take any precaution to avoid mixing with combustibles.

#### Control of effects

- Protect against external exposure, such as  
High temperatures, Frost, Humidity, UV-radiation/sunlight
- Ventilation requirements  
Use local and general ventilation.

#### Packaging compatibilities

Professional use: Only packagings which are approved (e.g. acc. to ADR) may be used. Consumer use (private households): Keep only in original container.

#### Conditions of storage

Keep container tightly closed in a cool place. Protect from sunlight. Keep away from children.

### 7.3 Specific end use(s)

There is no additional information.

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)											
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m <sup>3</sup> ]	STEL [ppm]	STEL [mg/m <sup>3</sup> ]	Ceiling-C [ppm]	Ceiling-C [mg/m <sup>3</sup> ]	Notation	Source
EU	chlorine	7782-50-5	IOELV			0.5	1.5			proc	2006/15/EC
GB	dust		WEL		10					i	EH40/2005
GB	dust		WEL		4					r	EH40/2005
GB	chlorine	7782-50-5	WEL			0.5	1.5			proc	EH40/2005

#### Notation

Ceiling-C	ceiling value is a limit value above which exposure should not occur
i	inhalable fraction
proc	substances released during the process
r	respirable fraction
STEL	short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

#### 8.2 Exposure controls (professional use)

##### Appropriate engineering controls

General ventilation.

##### Individual protection measures (personal protective equipment)

- Eye/face protection

Use safety goggles with side protection (EN 166).

##### Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Type of material

PVC: polyvinyl chloride, NR: natural rubber, latex

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

##### Respiratory protection

Particulate filter device (EN 143).

In case of inadequate ventilation wear respiratory protection: Full face mask (DIN EN 136).

##### Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

Physical state	solid
Colour	white
Odour	characteristic
Melting point/freezing point	not determined
Boiling point or initial boiling point and boiling range	not determined
Flammability	non-combustible
Lower and upper explosion limit	not determined
Flash point	not applicable
Auto-ignition temperature	not determined
Decomposition temperature	177 °C
pH (value)	10.6 (in aqueous solution: 1 g/l) 12 (in aqueous solution: 10 g/l)
Kinematic viscosity	not relevant
Particle characteristics	no data available
Oxidising properties	oxidiser
Vapour pressure	
Vapour pressure	not determined

#### Density and/or relative density

Density	2.35 g/cm <sup>3</sup>
Relative vapour density	information on this property is not available

#### Other safety parameters

##### Solubility(ies)

Water solubility	214 g/l at 25 °C
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##### Partition coefficient

n-Octanol/water (log KOW)	this information is not available
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#### 9.2 Other information

Information with regard to physical hazard classes

there is no additional information

Other safety characteristics

there is no additional information

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". It's a reactive substance. The mixture contains reactive substance(s). Oxidising property.

### 10.2 Chemical stability

See below "Conditions to avoid".

### 10.3 Possibility of hazardous reactions

No known hazardous reactions.

### 10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

### 10.5 Incompatible materials

Combustible materials

Release of toxic materials with:

Acids, Oxidiser

### 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Classification acc. to GHS

Acute toxicity

Harmful if swallowed.

Acute toxicity estimate (ATE)

Oral 850 mg/kg

Skin corrosion/irritation

Causes severe skin burns and eye damage.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

### Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

## 11.2 Information on other hazards

There is no additional information.

## SECTION 12: Ecological information

### 12.1 Toxicity

Very toxic to aquatic life.

Aquatic toxicity (acute)			
Endpoint	Value	Species	Exposure time
LC50	0.057 mg/l	bluegill ( <i>Lepomis macrochirus</i> )	96 h
EC50	0.067 mg/l	daphnia magna	48 h

### 12.2 Persistence and degradability

Data are not available.

### 12.3 Bioaccumulative potential

Data are not available.

### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

### 12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of  $\geq 0,1\%$ .

### 12.7 Other adverse effects

Data are not available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Waste treatment-relevant information

Recycling/reclamation of other inorganic materials.

#### Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

#### Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

#### Other disposal recommendations

Dispose of contents/container to hazardous or special waste collection point. Waste treatment of containers/packagings: Mixed municipal waste.

### Relevant provisions relating to waste

List of wastes (EU), Decision 2000/532/EC on the list of waste

Product Code/ Type of waste: 19 09 99



### Remarks


Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

## SECTION 14: Transport information

<b>14.1 UN number or ID number</b>	3487
ADR/RID/ADN	UN 3487
IMDG-Code	UN 3487
ICAO-TI	UN 3487
<b>14.2 UN proper shipping name</b>	CALCIUM HYPOCHLORITE, HYDRATED, CORROSIVE
ADR/RID/ADN	CALCIUM HYPOCHLORITE, HYDRATED, CORROSIVE
IMDG-Code	CALCIUM HYPOCHLORITE, HYDRATED, CORROSIVE
ICAO-TI	Calcium hypochlorite, hydrated, corrosive
<b>14.3 Transport hazard class(es)</b>	
ADR/RID/ADN	5.1 (8)
IMDG-Code	5.1 (8)
ICAO-TI	5.1 (8)
<b>14.4 Packing group</b>	II (substance presenting medium danger)
ADR/RID/ADN	II
IMDG-Code	II
ICAO-TI	II
<b>14.5 Environmental hazards</b>	hazardous to the aquatic environment
<b>14.6 Special precautions for user</b>	
	Provisions for dangerous goods (ADR) should be complied within the premises.
<b>14.7 Maritime transport in bulk according to IMO instruments</b>	
	The cargo is not intended to be carried in bulk.

## Information for each of the UN Model Regulations

### Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

Classification code	OC2
Danger label(s)	5.1+8, fish and tree
	
Environmental hazards	yes (hazardous to the aquatic environment)
Special provisions (SP)	314, 322
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 kg
Transport category (TC)	2
Tunnel restriction code (TRC)	E
Hazard identification No	58
Emergency Action Code	1W

### Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) -

#### Additional information

Classification code	OC2
Danger label(s)	5.1+8, fish and tree



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Environmental hazards	yes (hazardous to water)
Special provisions (SP)	314, 322
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 kg
Transport category (TC)	2
Hazard identification No	58

### International Maritime Dangerous Goods Code (IMDG) - Additional information

Marine pollutant	yes (P) (hazardous to the aquatic environment)
Danger label(s)	5.1+8, fish and tree



Special provisions (SP)	314, 322
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 kg
EmS	F-H, S-Q
Stowage category	D
Segregation group	8 - Hypochlorites

### International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Environmental hazards	yes (hazardous to the aquatic environment)
Danger label(s)	5.1+8



Special provisions (SP)	A8, A136
Excepted quantities (EQ)	E2
Limited quantities (LQ)	2,5 kg

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### Relevant provisions of the European Union (EU)

##### Seveso Directive

No	Dangerous substance/hazard categories
P8	oxidising liquids and solids

##### Deco-Paint Directive

VOC content	0 %
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##### Industrial Emissions Directive (IED)

VOC content	0 %
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#### Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

Not listed.

#### Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

Not listed.

### Water Framework Directive (WFD)

#### List of pollutants (WFD)

Name of substance	CAS No	Listed in	Remarks
Calcium hypochlorite		a)	

#### Legend

A) Indicative list of the main pollutants

### Regulation on persistent organic pollutants (POP)

Not listed.

### National regulations (GB)

#### List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

Not listed

### Restrictions according to GB REACH, Annex 17

Not listed

### National inventories

Country	Inventory	Status
EU	REACH Reg.	substance is listed

#### Legend

REACH Reg. REACH registered substances

## 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

## SECTION 16: Other information

### Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$ .	yes
3.1		Impurities and additives, classification acc. to GHS: change in the listing (table)	yes
3.1		Index No (GB CLP): change in the listing (table)	yes
12.5	Results of PBT and vPvB assessment: Data are not available.	Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB.	yes
12.6	Endocrine disrupting properties: Not listed.	Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$ .	yes

### Abbreviations and acronyms

## Chlorine granules inorganic

Version number: GHS 9.2 (2023-03-22)

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Abbr.	Descriptions of used abbreviations
2006/15/EC	Commission Directive establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
ADR/RID/ADN	Agreements concerning the International Carriage of Dangerous Goods by Road/Rail/Inland Waterways (ADR/RID/ADN)
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	ceiling value
DGR	Dangerous Goods Regulations (see IATA/DGR)
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EH40/2005	EH40/2005 Workplace exposure limits ( <a href="http://www.nationalarchives.gov.uk/doc/open-government-licence/">http://www.nationalarchives.gov.uk/doc/open-government-licence/</a> )
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
GB CLP	The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/720 (as amended)
GB REACH	The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended)
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
index No	the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
IOELV	indicative occupational exposure limit value
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
M-factor	means a multiplying factor. It is applied to the concentration of a substance classified as hazardous to the aquatic environment acute category 1 or chronic category 1, and is used to derive by the summation method the classification of a mixture in which the substance is present
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
ppm	parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
STEL	short-term exposure limit
TWA	time-weighted average
VOC	Volatile Organic Compounds
vPvB	very Persistent and very Bioaccumulative
WEL	workplace exposure limit

### Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

### List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H272	May intensify fire; oxidiser.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.

### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.