

SAFETY DATA SHEET



according to Regulation (EC) No 1907/2006 (REACH) as amended

Calcium chloride dihydrate

Creation date	01st June 2021	Version	1.3
Revision date	30th August 2024		

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

1.1. Product identifier

Substance / mixture	Calcium chloride dihydrate substance
Chemical name	calcium chloride
CAS number	10035-04-8
Index number	017-013-00-2
EC (EINECS) number	233-140-8
Registration number	01-2119494219-28-0006

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

Substance's intended use

Mineral supplement. Component of infusion and dialysis solutions. Ingredient for cosmetics. Industrial chemicals. See Appendix I. to this SDS.

Substance uses advised against

1.3. Details of the supplier of the safety data sheet

Manufacturer

Name or trade name	Macco Organiques, s.r.o.
Address	Zahradní 1938/46c, Bruntál 1, 792 01 Czech Republic
Identification number (CRN)	26819210
VAT Reg No	CZ26819210
Phone	+420 555 530 300
E-mail	macco@macco.cz

Competent person responsible for the safety data sheet

Name	Petr Ševčík
E-mail	petr.sevcik@macco.cz

1.4. Emergency telephone number

European emergency number: 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification of the substance in accordance with Regulation (EC) No 1272/2008

The substance is classified as dangerous.

Eye Irrit. 2, H319

Most serious adverse effects on human health and the environment

Causes serious eye irritation. May cause gastrointestinal irritation. May cause skin irritation, respiratory tract irritation, eye irritation.

2.2. Label elements

Hazard pictogram



Signal word

Warning

Dangerous substance

calcium chloride
(Index: 017-013-00-2; CAS: 10035-04-8)

Hazard statements

H319 Causes serious eye irritation.

Precautionary statements

P264 Wash hands and exposed parts of the body thoroughly after handling.

P280 Wear eye protection.

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

P337+P313 If eye irritation persists: Get medical advice/attention.

2.3. Other hazards

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended.

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical characterization

The substance specified below.

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
Index: 017-013-00-2 CAS: 10035-04-8 EC: 233-140-8 Registration number: 01-2119494219-28-0006	substance main component calcium chloride	99-100	Eye Irrit. 2, H319	

Full text of all classifications and hazard statements is given in the section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. In the event of unconsciousness, do not provide food by mouth.

If inhaled

Terminate the exposure immediately; move the affected person to fresh air.

If on skin

Remove contaminated clothes. And wash it before reuse. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment if skin irritation persists.

If in eyes

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. Rinsing should continue at least for 10 minutes. No neutralization should be performed in any case! Provide medical treatment, specialized if possible.

If swallowed

Rinse out the mouth with water and provide 2-5 dL of water. Provide medical treatment if the person has any health problems.

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

If inhaled

May cause respiratory irritation.

If on skin

Possible irritation.

If in eyes

Causes serious eye irritation.

If swallowed

Stomach pain, nausea, diarrhoea. Irritation, nausea.

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

Symptomatic treatment.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

Unsuitable extinguishing media

Water - full jet.

5.2. Special hazards arising from the substance or mixture

Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Prevent contact with skin and eyes. Avoid dust formation. Provide sufficient ventilation. Do not inhale aerosols.

6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water. In the event of substantial pollution, contact respective authorities and wastewater treatment plants.

6.3. Methods and material for containment and cleaning up

Place the spilled product mechanically in the properly closed containers and dispose of it according to the section 13. After removal of the product, wash the contaminated site with plenty of water.

6.4. Reference to other sections

See the Section 7, 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Prevent formation of dust in concentrations exceeding the occupational exposure limits. Prevent contact with skin and eyes. Do not eat, drink or smoke when using this product. Wash hands and exposed parts of the body thoroughly after handling. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose.

7.3. Specific end use(s)

not available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Not specified.

DNEL

Calcium chloride dihydrate				
Workers / consumers	Route of exposure	Value	Effect	Source
Workers	Inhalation	6.6 mg/m ³	Chronic effects local	CSR
Workers	Inhalation	13.2 mg/m ³	Acute effects local	CSR
Consumers	Inhalation	3.3 mg/m ³	Chronic effects local	CSR
Consumers	Inhalation	6.6 mg/m ³	Acute effects local	CSR

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Other information of limit values

PNEC (for anhydrous salt):

- Deposition in soil and plants *): NEdep 150g / m². If the substance is used as a salt or to reduce road dust, see ES5.
- Sensitive terrestrial plants: 215mg Cl⁻ / kg.
- Freshwater / seawater: As the concentration of calcium and chloride ions in aquatic ecosystems varies (0.06 - 210 mg / l), it is not considered useful to derive a general or intermittent PNEC value.
- Freshwater / marine sediment: Toxicity data for freshwater or marine sedimentary organisms are not available. Calcium chloride is present in the environment in the form of ions, which means that it will not adsorb as a substance on a solid surface. Therefore, it is not considered useful to derive a PNEC value for freshwater or marine sediment.
- Soil: Toxicity data for soil organisms are not available. Therefore, it is not considered useful to derive a PNEC value for soil.
- Sewage treatment plants (STP): Toxicity data for desirable organisms in sewage treatment plants are not available. As the concentration of calcium and chloride ions in aquatic ecosystems varies, it is not considered useful to derive a general or added PNEC value.
- Ingestion: Due to the nutritional aspects, metabolism and mechanisms of action of calcium and chloride ions, it is not considered useful to derive an oral PNEC value (secondary poisoning).

*) A preliminary PNEC value, the so-called "no-effect deposition" (NEdep), was derived for exposure by calcium chloride deposition via a dusting salt or a dust-reducing salt. It should be noted that although the units refer to exposure to air, this value reflects the effects of calcium chloride from the air on the soil or on the surface of the plants.

8.2. Exposure controls

Do not eat, drink and smoke during work. Follow the usual measures intended for health protection at work and especially for good ventilation. Provide showers and eye wash possibility. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

Eye/face protection

Protective goggles or face shield (based on the nature of the work performed).

Skin protection

Other protection: protective workwear. Hand protection: Protective gloves resistant to the product. EN ISO 374-1. Contaminated skin should be washed thoroughly.

Respiratory protection

Half-mask with anti-dust filter when the exposition limits of substances are exceeded or in the location with insufficient ventilation. Respirator.

Thermal hazard

Not available.

Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	solid
Colour	colourless, white
Odour	without fragrance
Melting point/freezing point	176 °C
Boiling point or initial boiling point and boiling range	cannot be determined - decomposition occurs
Flammability	non-flammable
Lower and upper explosion limit	not applicable
Flash point	not applicable
Auto-ignition temperature	not applicable
Decomposition temperature	260 °C
pH	5-8 (5% solution at 20 °C)
Kinematic viscosity	not applicable
Solubility in water	130g / 100g 20°C
Partition coefficient n-octanol/water (log value)	not applicable
Vapour pressure	not applicable
Density and/or relative density	
Density	1.835 g/cm ³ at 25 °C
Relative vapour density	not applicable

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Particle characteristics data not available
Form solid: crystalline, powder

9.2. Other information

not available

SECTION 10: Stability and reactivity

10.1. Reactivity

The substance is non-flammable. Hygroscopic substance.

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts exothermically with water.

10.4. Conditions to avoid

The product is stable and no degradation occurs under normal use. Heat. Humid air.

10.5. Incompatible materials

Strong oxidizing agents releasing chlorine. Strong reducing / oxidizing agents. Boron Trifluoride. Ethyl vinyl ether. Can cause corrosion in some types of stainless steel. Due to high temperature and other factors, crevice corrosion can be accelerated.

10.6. Hazardous decomposition products

Not developed under normal uses. At high temperatures, irritating or toxic gases may be formed.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

No toxicological data is available for the substance.

Acute toxicity

Based on available data the classification criteria are not met.

Calcium chloride dihydrate								
Route of exposure	Parameter	Method	Value	Exposure time	Species	Sex	Value determination	Source
Oral	LD ₅₀	OECD 401	3050 mg/kg bw		Rat (Rattus norvegicus)	F/M	Literary studies	CSR
Oral	LD ₅₀	OECD 401	2700 mg/kg bw		Mouse	M	Literary studies	CSR
Dermal	LD ₅₀		>6600 mg/kg bw	24 hours	Rabbit	F/M	Literary studies	CSR
Oral	LD ₅₀	OECD 401	2570 mg/kg bw		Mouse	F		
Inhalation (dust/mist)	LC ₅₀		>212 mg/m ³ of air	4 hours	Rat (Rattus norvegicus)			

Skin corrosion/irritation

Based on available data the classification criteria are not met.

Calcium chloride dihydrate				
Route of exposure	Result	Method	Exposure time	Species
Dermal	Not irritating	OECD 404	4 hours	Rabbit

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Serious eye damage/irritation

Causes serious eye irritation.

Calcium chloride dihydrate				
Route of exposure	Result	Method	Exposure time	Species
Eye	Highly irritating	OECD 405		Rabbit

Respiratory or skin sensitisation

Based on available data the classification criteria are not met.

Calcium chloride dihydrate					
Route of exposure	Result	Method	Exposure time	Species	Sex
Skin	Not sensitizing	in vivo		Guinea-pig (<i>Cavia aperea f. porcellus</i>)	

Germ cell mutagenicity

Based on available data the classification criteria are not met.

Calcium chloride dihydrate					
Result	Method	Exposure time	Specific target organ	Species	Sex
Negative	OECD 473		Lung fibroblast	Chinese hamster (<i>Cricetulus barabensis</i>)	

Carcinogenicity

No data available for the substance. Based on available data the classification criteria are not met.

Reproductive toxicity

Based on available data the classification criteria are not met.

Calcium chloride dihydrate							
Effect	Parameter	Method	Value	Exposure time	Result	Species	Sex
Maternal toxicity	NOAEL	OECD 414	>224 mg/kg bw/day	13 days (7 days/week)	Not specified	Rabbit	F

Toxicity for specific target organ - single exposure

No data available for the substance. Based on available data the classification criteria are not met.

Toxicity for specific target organ - repeated exposure

Based on available data the classification criteria are not met.

Repeated dose toxicity

Calcium chloride dihydrate						
Route of exposure	Parameter	Result	Value	Exposure time	Species	Sex
Oral	NOAEL	No effect	>26492 mg/kg	12 months (7 days/week)	Rat (<i>Rattus norvegicus</i>)	

Aspiration hazard

No data available for the substance. Based on available data the classification criteria are not met.

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11.2. Information on other hazards

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 12: Ecological information

12.1. Toxicity

Based on available data the classification criteria are not met.

Acute toxicity

Calcium chloride dihydrate							
Parameter	Method	Value	Exposure time	Species	Environment	Value determination	Source
LC ₅₀		6133 mg/l	96 hours	Fish (Pimephales promelas)	Fresh water	Literary studies	CSR
LC ₅₀		14107 mg/l	96 hours	Fish (Lepomis macrochirus)	Fresh water	Literary studies	CSR
LC ₅₀	OECD 202	3180 mg/l	48 hours	Daphnia (Daphnia magna)	Fresh water	Literary studies	CSR
EC ₅₀	OECD 201	5300 mg/l	72 hours	Algae (Selenastrum capricornutum)	Fresh water	Literary studies	CSR
NOEC	OECD 201	35764 mg/l	72 hours	Algae (Selenastrum capricornutum)	Fresh water	Literary studies	CSR
LC ₅₀	ASTM E 729	5272 mg/l	96 hours	Other aquatic organisms	Fresh water	Literary studies	CSR
NOAEL		26492 mg/l			Activated sludge		ECHA

Chronic toxicity

Calcium chloride dihydrate							
Parameter	Method	Value	Exposure time	Species	Environment	Value determination	Source
NOEC	OECD 210	230 mg/l	25 days	Fish (Oncorhynchus mykiss)	Fresh water	Literary studies	CSR
LOEC	OECD 210	1139 mg/l	25 days	Fish (Oncorhynchus mykiss)	Fresh water	Literary studies	CSR
LOEC	OECD 211	318 mg/l	21 days	Daphnia (Daphnia magna)	Fresh water	Literary studies	CSR

12.2. Persistence and degradability

No data available for the substance.

12.3. Bioaccumulative potential

No data available for the substance.

12.4. Mobility in soil

No data available for the substance.

12.5. Results of PBT and vPvB assessment

Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms as it does not meet the criteria set out in section B of Regulation (EU) No 2017/2100.

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12.7. Other adverse effects

Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

Waste management legislation

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

Waste type code

06 03 14 solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13

Packaging waste type code

06 03 00 wastes from the MFSU of salts and their solutions and metallic oxides

SECTION 14: Transport information

14.1. UN number or ID number

not subject to transport regulations

14.2. UN proper shipping name

not relevant

14.3. Transport hazard class(es)

not relevant

14.4. Packing group

not relevant

14.5. Environmental hazards

not relevant

14.6. Special precautions for user

Reference in the Sections 4 to 8.

14.7. Maritime transport in bulk according to IMO instruments

not relevant

SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

15.2. Chemical safety assessment

Chemical safety Report (CSR) has been carried out for the substance.

SECTION 16: Other information

A list of standard risk phrases used in the safety data sheet

H319 Causes serious eye irritation.

Guidelines for safe handling used in the safety data sheet

P264 Wash hands and exposed parts of the body thoroughly after handling.

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P280 Wear eye protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.

Other important information about human health protection

The user is responsible for adherence to all related health protection regulations.

Key to abbreviations and acronyms used in the safety data sheet

ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
EC	Identification code for each substance listed in EINECS
EC ₅₀	Concentration of a substance when it is affected 50 % of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency plan
EU	European Union
EuPCS	European Product Categorisation System
Eye Irrit.	Eye irritation
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC ₅₀	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD ₅₀	Lethal dose of a substance in which it can be expected death of 50% of the population
log K _{ow}	Octanol-water partition coefficient
NOAEL	No observed adverse effect level
NOEC	No observed effect concentration
OEL	Occupational Exposure Limits
PBT	Persistent, bioaccumulative and toxic
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Agreement on the transport of dangerous goods by rail
UN	Four-figure identification number of the substance or article taken from the UN Model Regulations
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very persistent and very bioaccumulative

Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

Recommended restrictions of use

not available

Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended.
REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

The changes (which information has been added, deleted or modified)

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The version 1.3 replaces the SDS version from Monday, 4 September 2023. Changes were made in sections 1, 11, 12 and 16.

Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.