



SAFETY DATA SHEET

nedMag Ca[®] calcium chloride prills 94-97%

0. General

Version number: 2.0
Date of issue: 21/12/2010
Supersedes version: Version 1.0 21/03/2008
Based on: REACH Regulation EC 1907/2006 and Commission Regulation EU 453/2010

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Solid low dustiness calcium chloride prills 94-97%

Chemical name/ synonyms: Calcium chloride, Calcium dichloride, CaCl₂
REACH registration number: 01-2119494219-28-0016
CAS-number: 10043-52-4
EC-number: 233-140-8
Index number CLP Annex VI: 017-013-00-2

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

See Annex I to this SDS. Most common uses: dust suppression, road de-icing, food additive, process aid during oil drilling, dehumidifying, cooling media, concrete accelerator.

No uses advised against are identified.

1.3 Details of the supplier of the safety data sheet

Name: NEDMAG INDUSTRIES Mining & Manufacturing B.V.
Address: Billitonweg 1, P.O. Box 241
9640 AE Veendam, the Netherlands
Telephone: +31 598 651 911
Fax: +31 598 651205
E-mail: sds@nedmag.nl

1.4. Emergency telephone number

UK: NHS Direct for Health Advice and Reassurance, 24 hours a day, 365 days a year
Telephone +44 (0)845 46 47, www.nhsdirect.nhs.uk

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

According to Regulation (EC) No. 1278/2008 (CLP):

Serious eye damage/eye irritation, Hazard category 2;; H 319: causes serious eye irritation

According to Directive 67/548/EEC:

Xi; R36 Irritating to eyes

2.2 Label elements

According to CLP regulation:

GHS hazard pictogram:



GHS07: exclamation mark

Signal word:

Warning

Hazard statement:

H319 Causes serious eye irritation

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

Precautionary statements:

P264 Wash hands thoroughly after handling

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 labels:

Content: Calcium Chloride prills 94-97%.

2.3 Other hazards

Calcium chloride can cause minor skin irritation and dry skin.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Constituent	EC_number	CAS-number	Concentration w/w	Classification Regulation (EC) No. 1278/2008
Calcium chloride	233-140-8	10043-52-4	94-97%	Category 2, H319
Sodium chloride	231-598-3	7647-14-5	0 – 2 %	Not classified
Potassium chloride	231-211-8	7447-40-7	0 – 3 %	Not classified
Calcium bromide	232-164-6	7789-41-5	0 – 2.6 %	Not classified

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation:	Remove to fresh air, keep warm and at rest. If symptoms persist; seek medical attention.
Skin contact:	Remove contaminated clothing. Wash off any skin contamination immediately with plenty of water. Launder clothes before re-use.
Eye contact:	Remove contact lenses if present. Rinse eyes thoroughly with wash solution or clean water for at least 10 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Seek medical attention.
Ingestion:	<u>DO NOT</u> induce vomiting. Wash out mouth with water and give plenty of water to drink (at least 300 ml). Obtain medical advice if symptoms persist.



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4.2 Most important symptoms and effects, both acute and delayed

Inhalation:	Inhalation of aerosols from the product could irritate the respiratory systems. For single exposure no irreversible effect is known.
Skin contact:	Could cause moderate skin irritation. The product will not give delayed symptoms.
Eye contact:	Could cause severe irritation of the eye. If the eye is not washed thoroughly, there is a risk of irreversible eye damage.
Ingestion:	Could cause irritation of oesophagus and the stomach. No delayed or irreversible symptoms are expected.

4.3 Indication of any immediate medical attention and special treatment needed

DO NOT induce vomiting. The product could be strengthened with the hydrogen chloride from the stomach and cause irritation on oesophagus or it might irritate the respiratory system. Wash out mouth with water and give plenty of water to drink (at least 300 ml) and observe the patient.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Appropriate extinguishing media: Calcium chloride is not combustible. Choose extinguishing media depending on surrounding fire. All extinguishing media are allowed.

5.2 Special hazards arising from the substance or the mixture

No special hazards.

5.3 Advise for fire fighters

Protective actions and/or special protective equipment depending on surrounding fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

For personal protection equipment in case of accidental spills and release of the substance, see Section 8.

6.1.2. For emergency responders

For personal protection equipment in case of accidental spills and release of the substance, see Section 8.

6.2 Environmental precautions

Prevent uncontrolled discharges into the environment (rivers, water courses, sewers etc.).

See relevant exposure scenarios covering intended use of calcium chloride as de-icing and dust control product (E57, not included in this SDS).

6.3 Methods and material for containment and cleaning up

6.3.1 Containment of a spill

In case of large release to a sensitive environment: embank with sand or other inert material and collect the material.



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6.3.2 Cleaning up a spill

Clean up spills as soon as they occur. Collect as much as possible in a suitable clean container, preferably for re-use, otherwise for disposal.

6.3.3 Other information relating to spills and releases

Wash the spillage area with large quantities of water. Do not wash out with water in a sensitive environment.

6.4 Reference to other sections

For waste measures, see Section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

- Operate in a well-ventilated area. Atmospheric levels should be controlled in compliance with the exposure scenarios and occupational exposure limits.
- Avoid inhalation of dusts.
- Avoid contact with skin and eyes.
- Wash contaminated skin or clothes immediately after contact with the product.
- Report any skin problems that may develop.
- For personal protection equipment and ventilation control measures, see Section 8.
- Do not eat, drink or smoke when handling the product.
- Wash hands after finishing working with the product.
- See relevant exposure scenario ES9.

7.2 Conditions for safe storage, including any incompatibilities

- Store at a dry place, not above normal room temperature.
- Do not store with acids and/or strong oxidizing and/or reducing agents.
- Avoid excessive ventilation during storage as the product can absorb moisture from the air.
- No special exhaust ventilation required.
- For ventilation during handling, see ES9.

7.3 Specific end use(s)

No specific end uses. See the different exposure scenarios.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

National occupational exposure limit values, EH40, 2005 with updates

- Dust (inhalable amount of any dust) - Workplace Exposure Limit (WEL) 8h: 10 mg/m³
- Respirable dust - Workplace Exposure Limit (WEL) 8h: 4 mg/m³

Derived No Effect Level (DNEL)

- Worker DNEL inhalation, long term 5 mg/m³ (ES9)
- Worker DNEL inhalation, short term 10 mg/m³ (ES9)
- Consumer, general population DNEL inhalation – long term 2.5 mg/m³ (ES10, not included in this SDS)
- Consumer, general population DNEL inhalation – short term 5 mg/m³ (ES10, not included in this SDS)



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- DNEL inhalation, long term systematic effects: no DNEL is derived. No long term effects are expected, also taking into account the recommended daily intake of 1000mg/kg bw CaCl₂.
- DNEL dermal, acute only needs to be derived if an acute toxicity hazard (leading to classification and labelling) has been identified and peak exposures are likely to occur. The available data do not trigger classification for acute systematic dermal toxicity.
- DNEL dermal, long term effects: no DNEL is derived.

Predicted No Effect Concentration (PNEC)

- Deposition onto soil and plants*): NE_{dep} 150 g/m². If the product is used for de-icing or dust control, see ES7.
- Sensitive terrestrial plants: 215 mg chloride/kg. If the product is used for de-icing or dust control, see ES7.
- PNEC water/marine: because the calcium and chloride concentration varies between aquatic ecosystems (0.06-210 mg/L), it is not considered useful to derive a generic PNEC water or PNEC marine (neither added or intermittent values).
- PNEC fresh water/marine sediment: no toxicity data on fresh water or marine sediment organisms are available. Calcium chloride is present in the environment as calcium and chloride ions, which implies that it will not adsorb on particulate matter. It is not considered useful to derive a PNEC fresh water or PNEC marine sediment.
- PNEC terrestrial: no toxicity data on terrestrial organisms are available. Calcium chloride is present in the environment as calcium and chloride ions, which implies that it will not adsorb on particulate matter. It is not considered useful to derive a PNEC terrestrial.
- PNEC sewage treatment plant (STP): no toxicity data on sewage treatment plant organisms are available. because the calcium and chloride concentration varies between aquatic ecosystems, it is not considered useful to derive a generic PNEC STP or PNEC STP-added.
- PNEC oral: in view of the nutritional aspects, the metabolism and the mechanisms of action of calcium and chloride ions, it is not considered useful to derive a PNEC oral (secondary poisoning).

**) A tentative PNEC, a so-called "no-effect deposition" (NE_{dep}) was derived for the exposure route for deposition of calcium chloride via road salts or dust suppressors. It should be noted that although the units refer to exposure via air, this value reflects effects caused by calcium chloride from air into soil or onto plants' surface.*

Biological limit values

None

Recommended surveillance procedure

Normally not necessary. If there is a suspicion that occupational exposure limits or DNEL for inhalation values could be surpassed, measurements of calcium chloride dust (total dust as worst case) could be done.

8.2 Exposure controls

See the relevant exposure scenario ES 9 in annex 2. Summary:

Technical control measures:	Handling of calcium chloride in prills form normally does not demand any special exhaust ventilation.
Eye/face protection:	Use suitable eye protection if eye contact is likely. Most materials for protective goggles and face visors will probably be suitable, e.g. polycarbonate.
Skin protection:	<u>Hand protection</u> : wear gloves (tested to EN 374) if hand contamination is likely. Suitable glove materials are neoprene (chloroprene) and nitrile rubber. Permeation time for the material > 0.5 mm is probably 8 hours. Non suitable materials are leather gloves (material decomposition) Wash off any skin contamination immediately. Contaminated gloves should be carefully rinsed with water before re-use.



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Respiratory protection: Skin and body protection: normal working clothes are suitable.
If calcium chloride liquid is handled normally, there is no demand of any respiratory protection.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Note: all data in this section is for the anhydrous calcium chloride, unless otherwise specified.

Appearance:	Solid
Colour:	White
Odour:	Odourless
Odour threshold:	Not applicable
pH:	7-11 in 10% water solution
Melting point/ freezing point:	782 °C
Initial boiling point/boiling range:	> 1600 °C
Flash point:	Not applicable
Evaporation rate:	Not applicable
Flammability:	The substance is non-flammable
Upper/lower flammability or explosive limits:	Not applicable
Vapour pressure:	0.1 Pa at 20 °C
Vapour density:	Not applicable
Relative density:	2.15 at 25 °C 2.15 at 15 °C
Solubility(ies):	745 g/L at 20 °C 1590 g/L at 100 °C
Partition coefficient: n-octanol/water:	Not applicable, inorganic substance
Auto-ignition temperature:	Not applicable
Decomposition temperature:	Not applicable
Viscosity:	Not applicable for a solid product
Explosive properties:	The substance is non-explosive
Oxidizing properties:	The substance is non-oxidising

9.2 Other information

Not applicable

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Calcium chloride can react with strong reducing or oxidizing agents.

10.2 Chemical stability

Calcium chloride is stable under recommended storage and handling conditions.



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10.3 Possibility of hazardous reactions

Calcium chloride can react violently with some strong reducing and oxidizing agents.

10.4 Conditions to avoid

Strong reducing and oxidizing agents.

10.5 Incompatible materials

Calcium chloride can cause pitting of and corrosion of some grades of stainless steel. High temperature and stress conditions can promote stress corrosion cracking.

10.6 Hazardous decomposition products

None when uses according to identified uses.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

The acute toxicity of calcium chloride is low. The combined oral LD50 value in the GLP-compliant study with rat was 2301 mg/kg bw (Toxicological Laboratories Limited, 1987). The dermal LD50 value in the study with rabbits was above 2000 mg/kg bw (Carreon et al., 1981a). No reliable animal data are available on the acute inhalation toxicity; however, in accordance with Column 2 of REACH Annex VIII, the study does not need to be conducted, as sufficient data are available on two other routes of exposure, oral and dermal. In the acute inhalation toxicity study with rats of limited reliability, signs of irritation of the respiratory tract were described at both exposure levels (40 and 160 mg/m³), suggesting that inhalation of calcium chloride can cause an irritation of the respiratory tract. As no deaths were observed, LC50 was established to exceed 160 mg/m³. In addition, Vinnikov et al. (1962) reported treating tuberculosis patients with aerosol inhalations of 2 -5% aqueous calcium chloride. The number of inhalations varied from below 10 (24 patients), till over 30 (2 patients). Several patients reported irritation of mucos membranes of pharinx and throat and unpleasant sensation in mouth already after the first inhalations. However, the frequency of such cases was described as minor by the authors. Overall calcium chloride inhalations were said to have beneficiary effects on disease symptoms (improved quality of spatum, decreased amounts of spatum, improved ease of spatum expellance, decreased frequency of coughing). These data are considered to prove that calcium chloride is not acutely toxic by inhalation.

Skin corrosion/irritation

Calcium chloride was found to be not irritating to rabbit skin in the GLP-compliant study, performed according to OECD Guideline 404 (Koopman et al., 1986e). No effects were noted in any of three rabbits at any observation time points (1, 24, 48 and 72 hours) following an application of the anhydrous substance under occlusive dressing for 4 hours. However, all long term exposure with water solution with mild irritants could give atopic dermatitis and skin irritations for sensitive individuals.

Serious eye damage/irritation

Eye irritation studies are available with anhydrous calcium chloride, calcium chloride dihydrate, calcium chloride hexahydrate and 33% aqueous solution (Koopman et al., 1986i, 1986j, 1986k, 1986l), performed in accordance with OECD Guideline 405. In each study 100 mg of the material was instilled in an eye of three rabbits. No rinsing was performed. The results indicate that anhydrous calcium chloride is severely irritating to rabbit eyes. The cornea and conjunctiva were moderately to severely irritated in all rabbits from one hour till 14 days after treatment. Thereafter the eye of one rabbit recovered, but there was still a slight haze on the



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cornea, 21 days after treatment. In the two other rabbits the cornea and conjunctiva were still moderately irritated 21 days after treatment. The irritating properties of calcium chloride seem to diminish with a higher degree of hydration: calcium chloride di- and tetrahydrates are irritating, calcium chloride hexahydrate is moderately irritating.

Respiratory or skin sensitisation

Calcium chloride is not sensitizing to skin and respiratory tract. Calcium chloride is considered not to have any sensitising properties, based on the physiological role of both its constituent ions, as well as the fact that sensitising effects of both ions have never been reported, despite long term historical and wide dispersive use (e. g. via food and medication). In accordance with section 1 of REACH Annex XI, testing does not appear scientifically necessary.

Germ cell mutagenicity

Based on the results of two bacterial mutation assays and an in vitro chromosome aberration test in Chinese hamster lung fibroblasts, calcium chloride is considered not to have a genotoxic potential. Calcium and chloride are normal constituents of the body.

Carcinogenicity

Calcium chloride is not genotoxic in vivo. Calcium and chloride are both essential nutrients for humans and a daily intake of more than 1000 mg for each of the ions is recommended. Based on this information, it is concluded that the substance is not carcinogenic.

Reproductive toxicity

Effects on fertility: in accordance with section 1 of REACH Annex XI, testing does not appear scientifically necessary, as calcium chloride will usually not reach the foetus or the male and female reproductive organs when exposed orally, dermally or by inhalation, as it does not become available systemically.

Developmental toxicity: it can be stated that the substance will neither reach the foetus nor reach male and female reproductive organs (as it does not become systemically available), which shows that there is no risk for developmental toxicity and no risk for toxicity to reproduction. An oral developmental study was performed in 3 species (mouse, rat and rabbit). In all three species no maternal or teratogenic effects were noted, and NOAEL 's were above highest dose given.

Specific target organ toxicity (STOT)-single exposure

Respiratory tract: not irritating.

Specific target organ toxicity (STOT)-repeated exposure

Respiratory tract: not irritating.

Aspiration hazard

Experience of calcium chloride inhalation in humans, Vinnikov et al. (1962): 65 tuberculosis patients (51 males, 14 females; age from below 30 till over 50) were treated with aerosol inhalations of 2 -5% aqueous calcium chloride. The number of inhalations varied from below 10 (24 patients), till over 30 (2patients). Several patients reported irritation of mucos membranes of pharinx and throat and unpleasant sensation in mouth already after the first inhalations. However, the frequency of such cases was described as minor by the authors. Overall calcium chloride inhalations were said to have beneficiary effects on disease symptoms (improved quality of spatum, decreased amounts of spatum, improved ease of spatum expellance, decreased frequency of coughing). These data are considered to prove that calcium chloride is not acutely toxic by inhalation.



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SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Calcium chloride is not classified as hazardous for the environment. Calcium and chloride are normally occurring ions in the entire ecosystem and release to the environment is not to have any long term negative effects. High amounts of chloride ions however cause local disturbance and damage in a sensitive environment.

Aquatic toxicity, acute

Fish (Pimephales promelas):	LC50 (96h): 4630 mg/L LC50 (48h): >6560 mg/L LC50 (24h): >6660 mg/L Method: other (EPA/600/4-90/027,EPA/600/6-91/003)
Crustaceans (Daphnia Magna):	LC50 (48h): 2400 mg/L based on: mobility (static OECD 202)
Algae (Pseudokirchneriella subcapitata):	EC50 (72h): 2900 mg/L based on: biomass EC50 (72h): >4000 mg/L based on: growth rate EC20 (72h): 1000 mg/L based on: biomass OECD Guideline 201 (Alga, Growth Inhibition Test)

Aquatic toxicity, long term

Fish:	no reliable studies available. Calcium and chloride are normally occurring ions in the entire ecosystem.
Crustaceans (Daphnia Magna):	EC50 (21d): 610 mg/L based on: reproductive impairment EC16 (21d): 320 mg/L based on: reproductive impairment LC50 (21d): 920 mg/L based on: mortality Method: not mentioned
Algae:	EC10/LC10 or NOEC for freshwater algae: 1000 mg/L

Terrestrial organisms

Calcium chloride is easily dissociated into calcium and chloride ions. Chloride ions will not absorb on particulate matter. The calcium ion may bind to soil particulate or may form stable inorganic salts with sulphate and carbonate ions, but calcium is naturally present in soil.

Plants

Calcium is well known as an essential nutrient for higher plants and has important roles for cell wall formation, cell division and cell elongation. Chloride is an essential micronutrient for plants and has an important role in regulating osmotic pressure of cells (SIDS, 2002). Damage to roadside vegetation has been reported and is attributed largely to the absorption of salt splashed foliage. Sugar maples (*Acer saccharum*) were exposed to runoff of sodium chloride and calcium chloride for 6 winters (total treatment of 11.2 tonnes /ha per treatment and 15 treatments per winter at weekly intervals, equalling 11.2 kg/m² in total and 1.87 kg/m² in one season). Leaves of these maple trees contained 3 to 6 times the chloride concentration compared to a control stand. Damage to the maples varied but could be correlated with the chloride concentration in the leaf (EPSO, 1984). From two field experiments with spruce tree (*Picea* sp.) carried out for ten weeks during a winter season, and a total dose of 1.5 kg/m² NaCl, CaCl₂ or a 75/25 NaCl/CaCl₂ mixture, it was found that in the presence of calcium chloride the uptake of Cl⁻ in the root was inhibited (Bogemans et al., 1989). Thus effects of calcium chloride are present but it depends on the amount of accumulated chloride.



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Micro-organisms living in wastewater treatment plants

No studies available. Calcium plays a crucial role in strengthening cell walls. Chloride is also an essential micronutrient for bacteria and plays an important role in photosynthesis and osmoregulation. No adverse effect is suspected for micro-organisms living in sewage water treatment plants.

12.2 Persistence and degradability

In accordance with column 2 of REACH Annex VII, the ready biodegradability test does not need to be conducted as the substance is inorganic.

12.3 Bioaccumulative potentia

Calcium chloride is easily dissociated into calcium and chloride ions. Both ions are essential constituents of the body of all animals. No bioaccumulation or biomagnifications are expected for calcium chloride.

12.4 Mobility in soil

Calcium chloride is easily dissociated into calcium and chloride ions. Chloride ions will not absorb on particulate matter. The calcium ion may bind to soil particulate or may form stable inorganic salts with sulphate and carbonate ions, but calcium is naturally present in soil.

12.5 Results of PBT and vPvB assessment

Not applicable for an inorganic substance. In accordance with REACH Annex XIII inorganic substances do not need to be subjected to a PBT assessment.

12.6 Other adverse effects

None identified.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

If recycling or re-use of the product and/or packaging material is not practical, then the product/packaging material must be disposed of in accordance with local, state or national regulations. A suitable way of disposal is of calcium chloride landfill or controlled emission to a large recipient with naturally occurring levels of calcium and chloride ions, like the sea. Do not dispose of with acids or strong reducing or oxidizing agents.

Clean packaging material with water and dispose of the water in accordance with local regulations. Packaging material can be incinerated in a plant that has a permit from the competent authorities.

The waste codes of calcium chloride depend on where the waste is generated. As calcium chloride has a wide dispersive use in many areas, all relevant codes can not be given in this SDS.

European Waste Codes (EWC) for packaging:

- 15 01 02 (plastic packaging)
- 15 01 05 (big bags of composite packaging)

SECTION 14: TRANSPORT INFORMATION

- 14.1 UN number:** not applicable
14.2 UN proper shipping name: not applicable



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14.3	Transport hazard class(es):	not applicable
14.4	Packing group:	not applicable
14.5	Environmental hazards:	not applicable
14.6	Special precautions for users:	not applicable
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:	not applicable

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
See EH44 DUST: General principles of protection.

15.2 Chemical safety assessment

A chemical safety assessment according to REACH article 14 has been performed for calcium chloride.

SECTION 16: OTHER INFORMATION

Revision of this safety data sheet

This safety data sheet is fully revised according to the CLP and REACH regulations. Many sections have been amended as the result of the chemical safety assessment in the REACH registration. This safety data sheet supersedes all previous issues.

Literature references and sources for data

- Registration dossier and chemical safety report calcium chloride according to REACH regulation
- ESIS (European chemical Substances Information System)
- OECD SIDS Initial Assessment Report, Oct. 2002, calcium chloride
- Handbook of Chemistry and Physics CRC Press Inc.

Relevant hazard statements and/or precautionary statements

According to Regulation (EC) No. 1278/2008 (CLP):

H319	Causes serious eye irritation
P280	Wear protective gloves/protective clothing/eye protection/face protection
P264	Wash hands thoroughly after handling
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

According to Directive 67/548/EEC:

Xi	Irritant
R36	Irritating to eyes

Advice on training

Provide basic employee training to prevent/minimise exposures when handling the product.



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Classification

Calcium chloride is manufactured in several forms (as anhydrous substance, mono-, di-, tetra- and hexahydrate). According to the REACH Guidance for identification and naming of substances under REACH, hydrates and water free (anhydrous) forms of compounds shall be regarded as the same substance. The reported classification and labelling are considered to be applicable for all forms of calcium chloride, unless stated otherwise.

Calcium chloride is included in Annex VI of EU Classification, Labelling and Packaging of Substances and Mixtures (CLP) Regulation (EC) No. 1272/2008 and is classified as Eye Irrit. 2 (Hazard statement: H319: Causes serious eye irritation). However, based on the results of the available studies, anhydrous calcium chloride needs to be classified as **Eye Irrit. 1 (Hazard statement: H318: Causes serious eye damage)**. For calcium chloride hydrates, classification as Eye Irrit. 2 (Hazard statement: H319: Causes serious eye irritation) is still considered applicable. Nevertheless, in accordance with Article 4, point 3 of EU Classification, Labeling and Packaging of Substances and Mixtures (CLP) Regulation (EC) No. 1272/2008, if a substance is subject to harmonised classification and labelling in accordance with Title V through an entry in Part 3 of Annex VI, that substance shall be classified in accordance with that entry, and a classification of that substance in accordance with Title II shall not be performed for the hazard classes or differentiations covered by that entry. Based on this, classification of calcium chloride as Eye Irritant Category 2, H319 shall be followed by the registrant in this dossier.



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ANNEX 1 - EXPOSURE SCENARIO 9: HANDLING OF CALCIUM CHLORIDE WITH LOW DUSTINESS

Section 1	Exposure Scenario Title
Title	Handling of Calcium Chloride with low dustiness ; CAS: 10043-52-4
Sectors of use	<ul style="list-style-type: none"> ▪ SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites ▪ SU22: Health services <p>(The following additional sectors of use are considered to be covered by the main sectors of use mentioned above:</p> <ul style="list-style-type: none"> ▪ SU1: Agriculture, forestry, fishery ▪ SU2a: Mining (without offshore industries) ▪ SU4: Manufacture of food products ▪ SU5: Manufacture of textiles, leather, fur ▪ SU6b: Manufacture of pulp, paper and paper products ▪ SU8: Manufacture of bulk, large scale chemicals (including petroleum products) ▪ SU9: Manufacture of fine chemicals ▪ SU10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys) ▪ SU11: Manufacture of rubber products ▪ SU12: Manufacture of plastics products, including compounding and conversion ▪ SU13: Manufacture of other non-metallic mineral products, e.g. plasters, cement ▪ SU14: Manufacture of basic metals, including alloys ▪ SU15: Manufacture of fabricated metal products, except machinery and equipment ▪ SU19: Manufacture of rubber products ▪ SU20: Health services ▪ SU0 – C23.5/C23/6: Other: Manufacture of cement, lime and plaster/ Manufacture of articles of concrete, cement and plaster)
Process categories	<ul style="list-style-type: none"> ▪ PROC1: Use in closed process, no likelihood of exposure ▪ PROC2: Use in closed, continuous process with occasional controlled exposure ▪ PROC3: Use in closed batch process (synthesis or formulation) ▪ PROC4: Use in batch and other process (syn-thesis) where opportunity for exposure arises ▪ contact) ▪ PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) ▪ PROC6: Calendering operations ▪ PROC7: Industrial spraying ▪ PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities ▪ PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities ▪ PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) ▪ PROC10: Roller application or brushing ▪ PROC11: Non industrial spraying ▪ PROC13: Treatment of articles by dipping and pouring (in this ES: Spreading)



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Environmental release categories	<ul style="list-style-type: none"> ▪ ERC1: Manufacture of substances ERC6a: Industrial use resulting in manufacture of another substance (use of interme-diates) ▪ ERC2: Formulation of prepara-tions ▪ ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ▪ ERC8a: Wide dispersive indoor use of processing aids in open systems ▪ ERC8d: Wide dispersive outdoor use of processing aids in open systems 			
Processes, tasks, activities covered	Handling of Calcium Chloride pellets, flakes or other Calcium Chloride with low dustiness or preparations of these.			
Section 2	Operational conditions and risk management measures			
<i>Field for additional statements to explain scenario if required.</i>				
Section 2.1.	Control of worker exposure			
Product characteristics				
Physical form of product	Solid, low dustiness [OC1].			
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].			
Amounts used	<i>Not applicable</i>			
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]			
Human factors not influenced by risk management	<i>Not applicable</i>			
Other Operational Conditions affecting worker exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene is implemented [G1].			
Contributing Scenarios	Risk Management Measures <i>Note: list RMM standard phrases according to the control hierarchy indicated in the ECHA template: 1. Technical measures to prevent release, 2. Technical measures to prevent dispersion, 3. Organisational measures, 4. Personal protection.</i>			
General measures (irritants) [G19].	Avoid all skin contact with product, clean up contamination/spills as soon as they occur. Wear gloves (tested to EN374) if hand contamination likely, wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposure. Use suitable eye protection [PPE26].			
General measures applicable to all activities [CS135].	No specific measures identified [EI18].			
Section 2.2	Control of environmental exposure			
Not applicable, as for this intended use the substance is not hazardous for the environment.				
Section 3	Exposure Estimation			
3.1. Health				
PROC #	Inhalation exposure – long term (mg/m³)	RCR inhalation	Inhalation exposure – event exposure (mg/m³)	RCR (inhalation)
Reasonable worst case	1.00	0.20	2.00	0.20
3.2. Environment				
Not applicable, as for this intended use the substance is not hazardous for the environment.				
Section 4	Guidance to check compliance with the Exposure Scenario			
4.1. Health				
Guidance to DU	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [GC 22]			
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [GC 23]			
	For more details or further information on the assumptions contained in this			



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nedMag Ca[®] calcium chloride prills 94-97%

	Exposure Scenario, contact the supplier [].
4.2. Environment	
Not applicable, as for this intended use the substance is not hazardous for the environment.	
Section 5	
Control of Worker Exposure	
None	
Control of environmental exposure	
None.	