

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

Version 2.0

Print Date 21.11.2019

Revision date / valid from 20.02.2019

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

1.1. Product identifier

Trade name : CALCIUM CHLORIDE 36% / CAN 33 KG FD/R
Substance name : calcium chloride
Index-No. : 017-013-00-2
CAS-No. : 10043-52-4
EC-No. : 233-140-8
EU REACH-Reg. No. : 01-2119494219-28-xxxx

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

Use of the Substance/Mixture : Used as:, Dust binding agents, process aid during oil drilling, dehumidifying, Road salt, Food additive, Refrigerant, Identified use: See table in front of appendix for a complete overview of identified uses.

Uses advised against : At this moment we have not identified any uses advised against

Remarks : Before referring to any Exposure Scenario attached to this Safety Data Sheet please check the grade of the product: the Exposure Scenarios presented are not related to all product grade

1.3. Details of the supplier of the safety data sheet

Company : Brenntag Nordic A/S
Borupvang 5 B
DK 2750 Ballerup
Telephone : +45 43 29 28 00
Telefax : +45 43 29 27 00
E-mail address : SDS.DK@brenntag-nordic.com
Responsible/issuing person : Environment & Quality

1.4. Emergency telephone number

Emergency telephone number : In case of personal injury call:
Denmark: 82 12 12 12 Giftlinien, Bispebjerg Hospital
Finland: Poison Information Centre: (09) 471 977 (direct) or (09) 47 11 (exchange), open 24h/day
Norway: 22 59 13 00 Giftinformasjonen (døgnåpent)
Sweden: +46-8-331231 Giftinformationscentralen (24 hour service)
Outside these countries: Please call your local

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

emergency services

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**


REGULATION (EC) No 1272/2008			
Hazard class	Hazard category	Target Organs	Hazard statements
Eye irritation	Category 2	---	H319

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

Most important adverse effects

- Human Health : Causes serious eye irritation.
- Physical and chemical hazards : In case of fire hazardous decomposition products may be produced such as: Hydrogen chloride gas
- Potential environmental effects : The product is not classified as dangerous for the environment.

2.2. Label elements**Labelling according to Regulation (EC) No 1272/2008**

- Hazard symbols : 
- Signal word : Warning
- Hazard statements : H319 Causes serious eye irritation.
- Precautionary statements
- Prevention : P264 Wash skin thoroughly after handling.
P280 Wear eye protection/ face protection.
- Response : 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.

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

2.3. Other hazards

For Results of PBT and vPvB assessment see section 12.5.

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical nature : Aqueous solution

Hazardous components	Amount [%]	Classification (REGULATION (EC) No 1272/2008)	
		Hazard class / Hazard category	Hazard statements
calcium chloride			
Index-No. : 017-013-00-2	>= 10 - <= 98	Eye Irrit.2	H319
CAS-No. : 10043-52-4			
EC-No. : 233-140-8			
EU REACH- : 01-2119494219-28-xxxx			
Reg. No.			

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	: Take off all contaminated clothing immediately. If symptoms call a physician.
If inhaled	: Remove to fresh air. If symptoms persist, call a physician.
In case of skin contact	: Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.
In case of eye contact	: Rinse immediately with plenty of water, also under the eyelids, for at least 5 minutes. Consult an eye specialist immediately. Go to an ophthalmic hospital if possible.
If swallowed	: Rinse mouth with water. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Protection of First Aid Responders	: First Aid responders should pay attention to self-protection and use the recommended protective clothing.

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

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

Symptoms : See Section 11 for more detailed information on health effects and symptoms.

Effects : irritant effects

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

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media**

Suitable extinguishing media : The product itself does not burn. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : High volume water jet

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting : Fire may cause evolution of: Irritant gases/vapours

5.3. Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Wear personal protective equipment.

Further advice : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Cool closed containers exposed to fire with water spray.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Personal precautions : Use personal protective equipment. Keep away unprotected persons. Ensure adequate ventilation. Avoid contact with skin and eyes.

6.2. Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration.

6.3. Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up : Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders). Keep in suitable, closed containers for disposal.

Further information : Treat recovered material as described in the section "Disposal considerations".

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

6.4. Reference to other sections

See Section 1 for emergency contact information.
 See Section 8 for information on personal protective equipment.
 See Section 13 for waste treatment information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling : Keep container tightly closed. Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.

Hygiene measures : Keep away from food, drink and animal feedingstuffs. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday. Take off all contaminated clothing immediately.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in original container. Suitable materials for containers: Polypropylene; polyethylene; Unsuitable materials for containers: Aluminium

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Further information on storage conditions : Keep tightly closed in a dry and cool place.

Advice on common storage : Keep away from food, drink and animal feedingstuffs.

7.3. Specific end use(s)

Specific use(s) : Identified use: See table in front of appendix for a complete overview of identified uses.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Other Occupational Exposure Limit Values

(Additional) Information : Contains no substances with occupational exposure limit values.

Component:	calcium chloride	CAS-No. 10043-52-4
-------------------	-------------------------	---------------------------

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R**Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL)**

DNEL		
Workers, Acute - local effects, Inhalation	:	10 mg/m ³
DNEL		
Workers, Long-term - local effects, Inhalation	:	5 mg/m ³
DNEL		
Consumers, Acute - local effects, Inhalation	:	5 mg/m ³
DNEL		
Consumers, Long-term - local effects, Inhalation	:	2,5 mg/m ³

Predicted No Effect Concentration (PNEC)

No PNEC value was derived. :

8.2. Exposure controls**Appropriate engineering controls**

Refer to protective measures listed in sections 7 and 8.

Personal protective equipment*Respiratory protection*

Advice : Required, if exposure limit is exceeded (e.g. OEL).
Respiratory protection complying with EN 141.

Hand protection

Advice : Protective gloves complying with EN 374.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
Protective gloves should be replaced at first signs of wear.

Material : Natural Rubber
Break through time : >= 480 min
Glove thickness : 0,5 mm

Material : polychloroprene
Break through time : >= 480 min
Glove thickness : 0,5 mm

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

Material : Nitrile rubber
Break through time : ≥ 480 min
Glove thickness : 0,35 mm

Material : butyl-rubber
Break through time : ≥ 480 min
Glove thickness : 0,5 mm

Material : Fluorinated rubber
Break through time : ≥ 480 min
Glove thickness : 0,4 mm

Material : Polyvinylchloride
Break through time : ≥ 480 min
Glove thickness : 0,5 mm

Eye protection

Advice : Safety goggles

Skin and body protection

Advice : Wear personal protective equipment.

Environmental exposure controls

General advice : Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Form : liquid
Colour : colourless
Odour : odourless
Odour Threshold : Not applicable
pH : 7 - 11 (20 °C)10% solution
Melting point/range : ca. -46 °C 18 - 42% solution
Boiling point/boiling range : ca. 100 - 120 °C 18 - 42% solution
Flash point : Not applicable
Evaporation rate : no data available

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

Flammability (solid, gas)	: Not applicable
Upper explosion limit	: Not applicable
Lower explosion limit	: Not applicable
Vapour pressure	: Not applicable
Relative vapour density	: no data available
Density	: 1,09 g/cm ³ 10% solution 1,4 g/cm ³ solution 40%
Water solubility	: completely soluble
Partition coefficient: n-octanol/water	: Not applicable
Auto-ignition temperature	: Not applicable
Thermal decomposition	: > 772 °C
Viscosity, dynamic	: ca. 2 - 10 mPa.s 18 - 42% solution
Viscosity, kinematic	: no data available
Explosive properties	: EU legislation: Not explosive
Explosivity	: Product is not explosive.
Oxidizing properties	: no data available

9.2. Other information

No further information available.

SECTION 10: Stability and reactivity**10.1. Reactivity**

Advice : No decomposition if stored and applied as directed.

10.2. Chemical stability

Advice : Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Conditions to avoid : Exposure to moisture Product is hygroscopic.

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

Thermal decomposition : > 772 °C

10.5. Incompatible materials

Materials to avoid : Strong reducing agents, Strong oxidizing agents

10.6. Hazardous decomposition products

Hazardous decomposition : Fire may cause evolution of: Irritant gases/vapours products

SECTION 11: Toxicological information
11.1. Information on toxicological effects
Data for the product
Acute toxicity
Oral

Please find this information in the listing of the component/components below in this section. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Inhalation

Please find this information in the listing of the component/components below in this section. Inhalation may cause pain and cough.

Dermal

Please find this information in the listing of the component/components below in this section.

Irritation
Skin

Result : Please find this information in the listing of the component/components below in this section. Skin contact may cause irritation. Prolonged and repeated exposure may cause pain and redness.

Eyes

Result : Please find this information in the listing of the component/components below in this section. Causes serious eye irritation.

Sensitisation

Result : Please find this information in the listing of the component/components below in this section.

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R
CMR effects
CMR Properties

- Carcinogenicity : Please find this information in the listing of the component/components below in this section.
- Mutagenicity : Please find this information in the listing of the component/components below in this section.
- Teratogenicity : Please find this information in the listing of the component/components below in this section.
- Reproductive toxicity : Please find this information in the listing of the component/components below in this section.

Carcinogenicity

Please find this information in the listing of the component/components below in this section.

Teratogenicity

Please find this information in the listing of the component/components below in this section.

Specific Target Organ Toxicity
Single exposure

- Remarks : Please find this information in the listing of the component/components below in this section.

Repeated exposure

- Remarks : Please find this information in the listing of the component/components below in this section.

Other toxic properties
Repeated dose toxicity

Please find this information in the listing of the component/components below in this section.

Aspiration hazard

no data available

Component: calcium chloride CAS-No. 10043-52-4

Acute toxicity
Oral

- LD50 Oral : 2120 mg/kg body weight(Rat, male and female) (OECD Test Guideline 401)

Inhalation

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

no data available

Dermal

LD50 Dermal : > 5000 mg/kg body weight(Rabbit, male and female)

Irritation**Skin**

Result : No skin irritation (Rabbit) (OECD Test Guideline 404)

Eyes

Result : Irritating to eyes. (Rabbit) (OECD - Guideline 405)

Sensitisation

Result : Study scientifically not justified.

CMR effects**Carcinogenicity**

It dissociates into ions that are present physiologically in relatively high levels in vertebrates. Therefore, a study is considered (scientifically) unnecessary.

CMR Properties

Carcinogenicity : Study scientifically not justified.
Mutagenicity : In vitro tests did not show mutagenic effects
Teratogenicity : Did not show teratogenic effects in animal experiments.
Reproductive toxicity : Study scientifically not justified.

Teratogenicity

NOAEL : 169 mg/kg
Maternal (Rabbit)(OECD Test Guideline 414)

Specific Target Organ Toxicity**Single exposure**

Remarks : The substance or mixture is not classified as specific target organ

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

toxicant, single exposure.

Repeated exposure

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

Other toxic properties

Repeated dose toxicity

It dissociates into ions that are present physiologically in relatively high levels in vertebrates. Therefore, a study is considered (scientifically) unnecessary.

Aspiration hazard

Not applicable,

SECTION 12: Ecological information
12.1. Toxicity

Component:	calcium chloride	CAS-No. 10043-52-4
-------------------	-------------------------	---------------------------

Acute toxicity

Fish

LC50 : 4630 mg/l (Pimephales promelas (fathead minnow); 96 h) (static test; EPA 600/4-90/027)

Toxicity to daphnia and other aquatic invertebrates

NOEC : 2000 mg/l (Daphnia magna; 48 h) (static test; OECD Test Guideline 202)
 LC50 : 2400 mg/l (Daphnia magna; 48 h) (static test; OECD Test Guideline 202)

algae

EC50 : 2900 mg/l (Pseudokirchneriella subcapitata (green algae); 72 h) (OECD Test Guideline 201)

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

Bacteria

: Study scientifically unjustified.

12.2. Persistence and degradability

Component:	calcium chloride	CAS-No. 10043-52-4
-------------------	------------------	--------------------

Persistence and degradability

Persistence

Result : (Related to: Water) decomposition by hydrolysis.

Biodegradability

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

12.3. Bioaccumulative potential

Component:	calcium chloride	CAS-No. 10043-52-4
-------------------	------------------	--------------------

Bioaccumulation

Result : Bioaccumulation is not expected.

12.4. Mobility in soil

Component:	calcium chloride	CAS-No. 10043-52-4
-------------------	------------------	--------------------

Mobility

Water : The product is water soluble.

12.5. Results of PBT and vPvB assessment

Component:	calcium chloride	CAS-No. 10043-52-4
-------------------	------------------	--------------------

Results of PBT and vPvB assessment

Result : The PBT or vPvB criteria of Annex XIII to the REACH Regulation does not apply to inorganic substances.

12.6. Other adverse effects

Data for the product

Additional ecological information
--

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

Result : Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

- Product : Eliminate waste in conditions authorized by the regulations. Store waste in containers provided for this purpose. Do not dump in drains, water sheets or the ground.
- Contaminated packaging : Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning. If recycling is not practicable, dispose of in compliance with local regulations.
- European Waste Catalogue Number : No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

SECTION 14: Transport information

Not dangerous goods for ADR, RID, IMDG and IATA.

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packaging group

Not applicable.

14.5. Environmental hazards

Not applicable.

14.6. Special precautions for user

Not applicable.

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

IMDG : Not applicable.

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R
SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Data for the product

EU. REACH, Annex XVII, : Point Nos.: , 3; Listed
Marketing and Use
Restrictions (Regulation
1907/2006/EC)

Other regulations : Only persons, who are thoroughly instructed in the dangerous properties and the necessary safety precautions of the substance, are allowed to work with it.

Component:	calcium chloride	CAS-No. 10043-52-4
-------------------	-------------------------	---------------------------

EU. Regulation EU No. : ; Not listed
649/2012 concerning the
export and import of
dangerous chemicals

EU. REACH, Annex XVII, : ; The substance/mixture does not fall under this legislation.
Marketing and Use
Restrictions (Regulation
1907/2006/EC)

EU. Directive : ; The substance/mixture does not fall under this legislation.
2012/18/EU (SEVESO
III) Annex I

**Notification status
calcium chloride:**

Regulatory List	Notification	Notification number
AICS	YES	
DSL	YES	
EINECS	YES	233-140-8
ENCS (JP)	YES	(1)-176
IECSC	YES	
INSQ	YES	
ISHL (JP)	YES	(1)-176
KECI (KR)	YES	KE-04496
NZIOC	YES	HSR003389
PICCS (PH)	YES	
TSCA	YES	

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R**15.2. Chemical safety assessment**

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information**Full text of H-Statements referred to under sections 2 and 3.**

H319 Causes serious eye irritation.

Abbreviations and Acronyms

REACH AuthAppC. No.

**REACH Authorisation
Application Consultation
Number** PNEC

**predicted no-effect
concentration** STOT

**specific target organ
toxicity** SVHC

**substance of very high
concern** UVCB

**substance of unknown or
variable composition,
complex reaction
products or biological
materials** vPvB

**very persistent and very
bioaccumulative**

BCF bioconcentration factor

BOD biochemical oxygen demand

CAS Chemical Abstracts Service

CLP Classification, Labelling and Packaging

CMR carcinogenic, mutagenic or toxic to reproduction

COD chemical oxygen demand

DNEL derived no-effect level

EINECS European Inventory of Existing Commercial Chemical Substances

ELINCS European List of Notified Chemical Substances

GHS Globally Harmonized System of Classification and Labelling of Chemicals

LC50 median lethal concentration

LOAEC lowest observed adverse effect concentration

LOAEL lowest observed adverse effect level

LOEL lowest observed effect level

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

NLP	no-longer polymer
NOAEC	no observed adverse effect concentration
NOAEL	no observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
OECD	Organisation for Economic Cooperation and Development
OEL	occupational exposure limit
PBT	persistent, bioaccumulative and toxic
REACH Auth. No.:	REACH Authorisation Number

Further information

- Key literature references and sources for data : Supplier information and data from the "Database of registered substances" of the European Chemicals Agency (ECHA) were used to create this safety data sheet.
- Methods used for product classification : The classification for human health, physical and chemical hazards and environmental hazards were derived from a combination of calculation methods and if available test data.
- Hints for trainings : The workers have to be trained regularly on the safe handling of the products based on the information provided in the Safety Data Sheet and the local conditions of the workplace. National regulations for the training of workers in the handling of hazardous materials must be adhered to.
- Other information : The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship.
The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

|| Indicates updated section.

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environmental Release Category (ERC)	Article Category (AC)	Specified
1	Use of aqueous solutions	3	0, 1, 2a, 4, 5, 6b, 8, 9, 10, 11, 12, 13, 14, 15, 19, 20	NA	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13, 14, 15	1, 2, 4, 6a	NA	ES1652
2	Use of aqueous solutions	22	0, 1, 2a, 4, 5, 6b, 8, 9, 10, 11, 12, 13, 14, 15, 19, 20	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 11, 13, 14, 15	8a, 8d	NA	ES1654

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

1. Short title of Exposure Scenario 1: Use of aqueous solutions

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	<p>SU0: Other</p> <p>SU1: Agriculture, forestry, fishery</p> <p>SU2a: Mining, (without offshore industries)</p> <p>SU4: Manufacture of food products</p> <p>SU5: Manufacture of textiles, leather, fur</p> <p>SU6b: Manufacture of pulp, paper and paper products</p> <p>SU8: Manufacture of bulk, large scale chemicals (including petroleum products)</p> <p>SU9: Manufacture of fine chemicals</p> <p>SU 10: Formulation</p> <p>SU11: Manufacture of rubber products</p> <p>SU12: Manufacture of plastics products, including compounding and conversion</p> <p>SU13: Manufacture of other non-metallic mineral products, e.g. plasters, cement</p> <p>SU14: Manufacture of basic metals, including alloys</p> <p>SU15: Manufacture of fabricated metal products, except machinery and equipment</p> <p>SU19: Building and construction work</p> <p>SU20: Health services</p>
Process categories	<p>PROC1: Use in closed process, no likelihood of exposure</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Use in closed batch process (synthesis or formulation)</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)</p> <p>PROC6: Calendering operations</p> <p>PROC7: Industrial spraying</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC10: Roller application or brushing</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation</p> <p>PROC15: Use as laboratory reagent</p>
Environmental Release Categories	<p>ERC1: Manufacture of substances</p> <p>ERC2: Formulation of preparations</p> <p>ERC4: Industrial use of processing aids in processes and products, not becoming part of articles</p> <p>ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)</p>
Activity	Note: this Exposure Scenario is only relevant for an appropriated use according to the quality grade of the substance delivered

2.1 Contributing scenario controlling environmental exposure for: ERC1, ERC2, ERC4, ERC6a

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
-------------------------	---	---

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

	Physical Form (at time of use)	liquid
	Vapour pressure	< 0,1 hPa
Frequency and duration of use	Covers daily exposures up to 8 hours	
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature.	
Technical conditions and measures to control dispersion from source towards the worker	General measures applicable to all activities	Clean up contamination/spills as soon as they occur.
Organisational measures to prevent /limit releases, dispersion and exposure	General measures applicable to all activities	Provide basic employee training to prevent /minimise exposures and to report any skin problems that may develop.
Conditions and measures related to personal protection, hygiene and health evaluation	General measures applicable to all activities	Avoid direct skin contact with product. Wear suitable gloves tested to EN374 during the activities where the skin contact is possible. Wash off any skin contamination immediately. Use suitable eye protection.

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15	worst-case	Worker - inhalative, long-term - systemic	1,00mg/m ³	0,20
PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15	worst-case	Worker - inhalative, long-term - local	2,00mg/m ³	0,20

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

For further information on the assessment method, see: <http://www.ecetoc.org/tra>
Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

1. Short title of Exposure Scenario 2: Use of aqueous solutions

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sectors of end-use	<p>SU0: Other 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 SU 10: Formulation 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: Building and construction work SU20: Health services</p>
Process categories	<p>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 (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC6: Calendaring operations 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 PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent</p>
Environmental Release Categories	<p>ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems</p>
Activity	Note: this Exposure Scenario is only relevant for an appropriated use according to the quality grade of the substance delivered

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC14, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	< 0,1 hPa

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

Frequency and duration of use	Covers daily exposures up to 8 hours	
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature.	
Technical conditions and measures to control dispersion from source towards the worker	General measures applicable to all activities	Clean up contamination/spills as soon as they occur.
Organisational measures to prevent /limit releases, dispersion and exposure	General measures applicable to all activities	Provide basic employee training to prevent /minimise exposures and to report any skin problems that may develop.
Conditions and measures related to personal protection, hygiene and health evaluation	General measures applicable to all activities	Avoid direct skin contact with product. Wear suitable gloves tested to EN374 during the activities where the skin contact is possible. Wash off any skin contamination immediately. Use suitable eye protection.

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC14, PROC15: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC14, PROC15	worst-case	Worker - inhalative, long-term - local	1,00mg/m ³	0,20
PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC14, PROC15	worst-case	Worker - inhalative, long-term - local	2,00mg/m ³	0,20

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: <http://www.ecetoc.org/tra>

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

CALCIUM CHLORIDE 36% / CAN 33 KG FD/R

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.