

Safety Data Sheet

In accordance with Commission Regulation (EU) No 2020/878



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Revision: 1

Calcium nitrate - crystal

SECTION 1		Identification of the substance/mixture and of the company/undertaking
1.1	Product identifier	
	Trade name	Calcium nitrate - Crystal
	Synonyms	Soluteck-Nitrato de calcio rega; Nitrogal; Técnica Calcium Nitrate; Nitrato de calcio técnico; Fertibersol Nica Cristal; Impact Zero Fertibersol Nica Cristal; NITRATO CÁLCICO 15,5 (27) CRISTALINO.
	Code	QSD-005
	Chemical name	Nitric acid, ammonium and calcium salt (Nitric acid, ammonium calcium salt)
	Chemical formula	$5\text{Ca}(\text{NO}_3)_2 \cdot \text{NH}_4\text{NO}_3 \cdot 10\text{H}_2\text{O}$
	Index Number	Not applicable
	EINECS Number	239-289-5
	CAS Number	15245-12-2
	Registration Number	01-2119493947-16-0025
	UFI	TP50-90U8-A00E-GCUD
1.2	Relevant identified uses of the substance or mixture and uses advised against	
	Application of the substance / the mixture	Fertiliser. Generic industrial use.
	Uses advised against	Others than those indicated.
1.3	Details of the supplier of the safety data sheet	Groupe Horticole Ledoux Inc. 785 rue Paul Lussier, Ste-Helene de Bagot, QC, J0H1M0 (Canada) 1-888-791-2223; informations@ghlinc.com
1.4	Emergency telephone number	CANUTEC: 1-613-996-6666

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SECTION 2 Hazards identification		
2.1	Classification of the substance or mixture according Regulation (EC) n° 1272/2008 (CLP)	GHS05 Acute Tox. 4 H302 Harmful if swallowed GHS07 Eye Dam. 1 H318 Causes serious eye damage.
2.2	Label elements	
	Hazard pictograms	
	Signal word	Danger
	Hazard-determining components of labelling	Nitric acid, ammonium and calcium salt
	Hazard statements	H302 Harmful if swallowed H318 Causes serious eye damage.
	Precautionary statements	P270 Do not eat, drink or smoke when using this product. P264 Wash thoroughly after handling. P301+P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. P330 Rinse mouth. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if pre sent and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER/doctor.
	Additional information	The product contains: Explosives precursors. Report suspicious transactions, disappearances or theft according to Regulation (EU) 2019/1148, Article 9.
	Supplemental information on the label	Not applicable.
	Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	Not applicable.
	Special packaging requirements	Not applicable.
	Containers to be fitted with child-resistant fastenings	Not applicable.

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	Tactile hazard warning	Not applicable.	
2.3	Other hazards		
	Other hazards which do not result in classification	None known.	
	Results of the PBT and vPvB assessment	Not applicable. Not applicable.	
SECTION 3	Composition/information on ingredients		
3.1	Substances		
	Name	EC Number	CAS Number
	Nitric acid, ammonium and calcium salt	239-289-5	15245-12-2
3.2	Mixtures		
	Not applicable.		
	Additional indications	For the wording of the listed hazard phrases refer to section 16.	
SECTION 4	First aid measures		
4.1	Description of first aid measures		
	General information	Do not perform any action that involves personal risk or without proper training. Avoid direct mouth-to-mouth resuscitation, as this can be dangerous for the person providing assistance. Use other methods for resuscitation, preferably oxygen or compressed air equipment. Treat according to the following indications:	
	Inhalation	Fresh air and rest.	
	Ingestion	If large amounts of this material are swallowed, call a physician immediately. Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person.	
	Skin contact	Rinse immediately with plenty of water.	
	Eye contact	Immediately remove contact lenses and flush eyes with plenty of lewarm water for at least 15 minutes. If irritation, pain, swelling, excessive tearing or sensitivity to light persists, the patient should be seen at a health center and referral to an ophthalmologist should be considered.	

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4.2	Most important symptoms and effects, both acute and delayed	
	Eye contact	Redness. Pain. Severe and deep burns.
	Inhalation	There are no known significant effects or critical hazards.
	Skin contact	Redness, itching, stinging.
	Ingestion	Nausea, vomiting, coughing,
4.3	Indication of any immediate medical attention and special treatment needed	
	No action involving personal risk or without adequate training should be taken. Avoid direct mouth-to-mouth resuscitation, as it can be dangerous for the person providing the help. Use other methods for resuscitation, preferably oxygen or compressed air equipment. Treat according to the following indications:	
	Notes to physician	Treat symptomatically.
	Specific treatments	There is no specific treatment. It depends on specialized medical observation.
SECTION 5	Firefighting measures	
5.1	Extinguishing media	
	The product is not flammable.	
	Suitable extinguishing agents	Water spray, foam, dry powder or carbon dioxide.
	Unsuitable extinguishing agents for safety reasons	High volume water jet.
5.2	Special hazards arising from the substance or mixture	
	The solution is not flammable. Ammonia may be released from the solution but it is unlikely that in free air the ammonia-air mixture will be within flammable limits. In confined spaces the flammable limits may be reached. A closed container containing ammonia solution may explode if exposed to fire or heated.	
	Hazardous thermal decomposition products	Sulfur oxides (SOx) Carbon monoxide may be formed in case of incomplete combustion.

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5.3	Advice for firefighters	
	Open warehouse doors and windows for maximum ventilation. Fire-fighting personnel should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face mask operating in positive pressure mode. Clothing for fire-fighting personnel (including helmets, protective boots) should conform to European standard EN 469 and gloves to EN 659. It should provide a basic level of protection for chemical incidents and should be fire resistant. The facility shall have sufficient protective equipment available to deal with fires.	
SECTION 6	Accidental release measures	
6.1	Personal precautions, protective equipment and emergency procedures	
	For non-emergency personnel	
	Avoid contact with skin, eyes and respiratory tract. Avoid generation and spread of dust.	
	For emergency responders	
	With proper training, self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing used in conjunction with water spray will provide limited protection in outdoor emissions for short-term exposure.	
6.2	Environmental precautions	
	In case of accidental spills and leaks avoid dispersal of spilled material, runoff and contact with soil, watercourses (surface and groundwater), drains and sewers. Inform the competent authorities if the product has caused adverse impacts (sewers, watercourses, soil or air).	
6.3	Methods and material for containment and cleaning up	
	Remove spillage mechanically or with a suction device equipped with a high efficiency filter. Collect in a container for recovery or incineration. Containers with collected spill should be properly labeled with correct contents and hazard symbol.	
6.4	Reference to other sections	
	See Section 1 for information on contact in case of emergency. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.	
SECTION 7	Handling and storage	
7.1	Precautions for safe handling	
	Technical precautionary measures	Wear appropriate personal protective equipment. Avoid contact with eyes, skin or clothing. Do not breathe vapours or mist. Do not ingest. Avoid release to the environment. Keep in original container or approved alternative made of compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residues and may be hazardous. Do not reuse container. Avoid handling incompatible substances, see section 7.2. and 10.

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	Advice on general occupational hygiene	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.			
7.2	Conditions for safe storage, including any incompatibilities				
	Spills may be stored as chemical waste in an approved area. Keep in a cool, dry and ventilated place and in closed containers. Keep separate from food, feed, fertilizers and other sensitive materials.				
7.3	Specific end use(s)				
	Use only as described in section 1.2.				
SECTION 8	Exposure controls/personal protection				
8.1	Control parameters				
	Occupational exposure limits	There is no limit of occupational exposure value.			
	Recommended monitoring procedures	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of ventilation or other control measures and/or the need to use respiratory protective equipment. Monitoring standards such as the following may be used as reference: European Standard EN 689 (Atmospheres in the workplace. Guidelines for the evaluation of inhalation exposure of chemical agents for comparison with limit values and measurement strategy), European Standard EN 14042 (atmospheres in the workplace. Guidelines for the application and use of procedures to assess exposure to chemical and biological agents) European Standard EN 482 (atmospheres in the workplace. General requirements for the performance of procedures for measuring chemical agents). National guidance documents on methods for the determination of hazardous substances should also be used as a reference.			
	Derived effect levels	No DELs available.			
	Predicted effect concentrations	No PECs available.			
	Ingredients with limit values that require monitoring at the workplace	The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.			
	DNEL				
	Substance			15245-12-2	
				Nitric acid, ammonium and calcium salt	
				Systemic	No hazard has been identified but no further information is needed as no exposure is expected to occur.
			Long-		

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	Industrial/Professional worker	Inhalation (mg/m3)	term	Local	No hazard has been identified but no further information is needed as no exposure is expected to occur.
			Short-term	Systemic	No hazard has been identified but no further information is needed as no exposure is expected to occur.
				Local	No hazard has been identified but no further information is needed as no exposure is expected to occur.
		Dermal (mg/kg pc/dia)	Long-term	Systemic	No hazard has been identified
				Local	No hazard has been identified
			Short-term	Systemic	No hazard has been identified
				Local	No hazard has been identified
		Ocular (mg/kg pc/dia)	Long-term	Systemic	Not available
				Local	Not available
			Short-term	Systemic	Medium risk (no threshold was derived)
				Local	Medium risk (no threshold was derived)
			Long-	Systemic	No hazard has been identified but no further information is needed as no exposure is expected to occur.

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Consumer	Inhalation (mg/m3)	term	Local	No hazard has been identified but no further information is needed as no exposure is expected to occur.	
		Short-term	Systemic	No hazard has been identified but no further information is needed as no exposure is expected to occur.	
			Local	No hazard has been identified but no further information is needed as no exposure is expected to occur.	
	Dermal (mg/kg pc/day)	Long-term	Systemic	No hazard has been identified	
			Local	No hazard has been identified	
		Short-term	Systemic	No hazard has been identified	
			Local	No hazard has been identified	
	Oral (mg/kg pc/day)	Long-term	Systemic	No hazard has been identified	
			Local	10 mg/kg bw/d	
		Short-term	Systemic	Not available	
			Local	Not available	
	Ocular (mg/kg pc/day)	Long-term	Systemic	Not available	
			Local	Not available	
		Short-term	Systemic	Medium risk (no threshold was derived)	
			Local	Medium risk (no threshold was derived)	
	PNEC				
	Substance				15245-12-2
					Nitric acid, ammonium and calcium salt
	Fresh water (mg/L)				19.6mg/L
	Salt water (mg/L)				19.5mg/L
	STP (mg/L)				20.8mg/L

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	Fresh water sediment (mg/L)		95.4mg/kg sediment
	Salt water sediment (mg/L)		94.7mg/kg sediment
	Air (mg/L)		No hazard has been identified
	Soil (mg/L)		No hazard has been identified
	Predators (secondary poisoning) (mg/L)		No bioaccumulation potential
	Components with biological limit values	Non-existent.	
	Additional indications	The Occupational exposure limits lists valid during the making were used as basis.	
8.2	Exposure controls		
	Appropriate engineering controls		As a general rule, access to unauthorized personnel will be prohibited. The prohibition will be announced by means of a clearly visible and legible sign. Ventilation. Storage and loading and unloading or transfer facilities will necessarily be designed with natural or forced ventilation, so that the risk of worker exposure is adequately controlled. To this end, in said design, the characteristics of the vapors to which they may be exposed and the source of emission, their capture at their origin and their possible transmission to the environment of the storage or installation will be taken into account.
	Personal protective measures, such as personal protective equipment	General protection and hygiene measures	Wash completely the hands, forearms and face after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Use the appropriate techniques to remove the contaminated clothes. Wash the contaminated clothes before reusing. Verify that the eyes washing stations and safety showers were near to working stations.
		Eye/face protection	Use personal protective equipment during use and handling of the product.
		Skin protection	
		Hand protection	Chemical protective gloves According to standards: EN 374-1:2003 - EN 374-3:2003/AC:2006 - EN 420: 2003+A1:2009. Replace gloves at any sign of deterioration.
		Glove material	PVC gloves

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		Other	Use personal protective equipment during use and handling of the product.
		Respiratory protection	If exposure levels exceed or may exceed the recommended exposure limits, use suitable breathing apparatus e.g. mouth-face masks equipped with type K filters, self-contained breathing apparatus according to EN 136, 140 or 405.
		Thermal hazards	Not applicable due to the physical-chemical characteristics of the product.
	Environmental exposure controls		Under EU environmental protection legislation it is recommended to avoid release of the product and its packaging into the environment. For further information see section 6.2.
SECTION 9	Physical and chemical properties		
9.1	Information on basic physical and chemical properties		
	Appearance	Solid	
	Colour	White	
	Odour	Inodorous	
	Melting point/freezing point	> 400 °C a 1013 hPa	
	Initial boiling point and boiling range	Not applicable. Melting point higher than 300°C.	
	Flammability	Non-flammable	
	Upper/lower flammability or explosive limits		
	Lower	Not applicable due to physico-chemical properties	
	Upper	Not applicable due to physico-chemical properties	
	Flash point	Not applicable due to physico-chemical properties	
	Auto-ignition temperature	Not applicable due to physico-chemical properties	
	Decomposition temperature	Not applicable due to physico-chemical properties	
	pH	5-7	
	Viscosity		
	Kinematic	Not applicable due to physico-chemical properties	
	Solubility		
	In water	100g/100 mL at 20°C	
	Partition coefficient: n-octanol/water	Not applicable due to physico-chemical properties	
	Vapour pressure	Not applicable due to physico-chemical properties	

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	Relative density	2,05 at 20 °C
	Relative vapour density	Not applicable due to physico-chemical properties
	Particle characteristics	80% < 1 mm
9.2	Other information	
	Appearance	Solid.
	Explosives properties	Not explosive
	Oxidizing properties	Not oxidizing
	Information with regard to physical hazard classes	
	Explosives	Not applicable due to physico-chemical properties
	Flammable gases	Not applicable due to physico-chemical properties
	Aerosols	Not applicable due to physico-chemical properties
	Oxidising gases	Not applicable due to physico-chemical properties
	Gases under pressure	Not applicable due to physico-chemical properties
	Flammable liquids	Not applicable due to physico-chemical properties
	Flammable solids	Not applicable due to physico-chemical properties
	Self-reactive substances and mixtures	Not applicable due to physico-chemical properties
	Substances and mixtures, which emit flammable gases in contact with water	Not applicable due to physico-chemical properties
	Oxidising liquids	Not applicable due to physico-chemical properties
	Oxidizing solids	Not applicable due to physico-chemical properties
	Organic peroxides	Not applicable due to physico-chemical properties
	Corrosive to metals	Not applicable due to physico-chemical properties
	Desensitised explosives	Not applicable due to physico-chemical properties
	Other safety characteristics	
	Mechanical sensitivity	Not applicable due to physico-chemical properties
	Self-accelerating polymerisation temperature	Not applicable due to physico-chemical properties

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	Formation of explosible dust/air mixtures	Not applicable due to physico-chemical properties				
	Acid/alkaline reserve	Not applicable due to physico-chemical properties				
	Evaporation rate	Not applicable due to physico-chemical properties				
	Miscibility	Not applicable due to physico-chemical properties				
	Conductivity	Not applicable due to physico-chemical properties				
	Corrosiveness	Not applicable due to physico-chemical properties				
	Gas group	Not applicable due to physico-chemical properties				
	Redox potential	Not applicable due to physico-chemical properties				
	Radical formation potential	Not applicable due to physico-chemical properties				
	Photocatalytic properties	Not applicable due to physico-chemical properties				
SECTION 10	Stability and reactivity					
10.1	Reactivity	Stable under recommended storage and handling conditions.				
10.2	Chemical stability	Chemically stable under the indicated storage, handling and use conditions.				
10.3	Possibility of hazardous reactions	Moisture exposure. Do not overheat to avoid thermal decomposition.				
10.4	Conditions to avoid	Proximity to sources of heat or fire. The substance decomposes when heated.				
10.5	Incompatible materials	Combustible materials, acids, alkalis, metals and reducing agents.				
10.6	Hazardous decomposition products	Nitrogen oxides (NOx) (in case of fire).				
SECTION 11	Toxicological information					
11.1	Information on toxicological effects					
	Acute toxicity					
	Component	CAS number	Method	Species	Route	Result
	Nitric acid, ammonium and calcium salt	15245-12-2	OECD 423 OECD 402	Rat Rat	Oral Cutaneous	LD50: 300 mg/kg bw. LD50 > 2000 mg/kg bw.
	Harmful if swallowed.					
	Skin corrosion/irritation					
	Component	CAS number	Method	Species	Route	Result
	Nitric acid, ammonium and calcium salt	15245-12-2	OECD 404	Rabbit	Cutaneous	Non irritant
	Based on available data, the classification criteria are not met.					

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Serious eye damage/irritation

Component	CAS number	Method	Species	Route	Result
Nitric acid, ammonium and calcium salt	15245-12-2	OECD 405	Rabbit	Ocular	Non irritant

Causes serious eye damage.

Respiratory or skin sensitisation

Component	CAS number	Method	Species	Route	Result
Nitric acid, ammonium and calcium salt	15245-12-2	OECD 429	Mouse	Cutaneous	Non sensitising

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Component	CAS number	Method	Species	Result
Nitric acid, ammonium and calcium salt	15245-12-2	OECD 471 OECD 473 OECD 476	Bacteria Cromosomic aberration Mutation of mammal cells	Non mutagenic

Based on available data, the classification criteria are not met.

Carcinogenicity

Component	CAS number	Method	Species	Route	Result
Nitric acid, ammonium and calcium salt	15245-12-2	-	-	-	Study scientifically not necessary

Based on available data, the classification criteria are not met.

Reproductive toxicity

Component	CAS number	Method	Species	Route	Result
Nitric acid, ammonium and calcium salt	15245-12-2	OECD 422	Rat	Oral	Effects on fertility: NOAEL: 1500 mg/kg bw/d. Toxicity for the development: NOAEL: 1500 mg/kg bw/d NOAEC: 25 mg/m3

Based on available data, the classification criteria are not met.

STOT- single exposure

Component	CAS number	Method	Species	Route	Result
Nitric acid, ammonium and calcium salt	15245-12-2	Not available	Not available	Not available	Not available

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Based on available data, the classification criteria are not met.

STOT-repeated exposure

Component	CAS number	Method	Species	Route	Result
Nitric acid, ammonium and calcium salt	15245-12-2	OECD 407	Rat	Oral	NOAEL: 1000 mg/kg bw/d

Based on available data, the classification criteria are not met.

Aspiration hazard

Component	CAS number	Result
Nitric acid, ammonium and calcium salt	15245-12-2	No significant effects or critical hazards are known.

Based on available data, the classification criteria are not met.

11.2

Information on other hazards

Endocrine disruptive properties

None of the components are listed

Other information

Not available

SECTION 12

Ecological information

12.1

Toxicity

Aquatic toxicity

Component	N° CAS		Fish	Crustacea	Algae
Nitric acid, ammonium and calcium salt	15245-12-2	Short term	LC50(48h): 447 mg/l	Scientifically not necessary	EC50(48h) > 100 mg/l
		Long term	Not available	EC50(72h) > 100 mg/l	Not available

Terrestrial toxicity

Component	N° CAS	Macro-organism	Micro-organism	Terrestrial plants	Other organisms
Nitric acid, ammonium and calcium salt	15245-12-2	Not available	Not available	Not available	-

Microbiological activity in wastewater treatment plants

Component	N° CAS	Toxicity to aquatic micro-organisms
Nitric acid, ammonium and calcium salt	15245-12-2	EC50(3h) > 1000 mg/l EC10/NOEC: 180 mg/l

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12.2	Persistence and degradability				
	Component	N° CAS	Degradation		
	Nitric acid, ammonium and calcium salt	15245-12-2	Hydrolysis	It is an inorganic substance, soluble in water. It is a neutral salt; ions have little tendency to react with water. Hydrolysis is not relevant.	
			Photolysis	Not necessary	
			Biodegradation	Not necessary since the substance is inorganic	
12.3	Bioaccumulative potential				
	Component	N° CAS	Octanol-water partition coefficient (Kow)	Bioaccumulation factor (BFC)	Observations
	Nitric acid, ammonium and calcium salt	15245-12-2	Not applicable	-	-
12.4	Mobility in soil				
	Component	N° CAS	Result		
	Nitric acid, ammonium and calcium salt	15245-12-2	Simple inorganic salts have a high solubility in water and exist dissociated in aqueous solution. This type of substance has a low adsorption potential.		
12.5	Results of PBT and vPvB assessment				
	Not applicable.				
12.6	Endocrine disrupting properties				
	The product doesn't contain any endocrine disrupting substance.				
12.7	Other adverse effects				
	Significative effects or critcs risks are not known.				
SECTION 13	Disposal considerations				
13.1	Waste treatment methods				
	Methods of disposal	Waste management (disposal and recovery) : Consult the authorised waste manager for recovery and disposal operations, in accordance with Annex 1 and Annex 2 (Directive 2018/851/EC). Packaging: According to codes 15 01 (Commission Decision 2014/955/EU), if the packaging has been in direct contact with the product, it should be treated in the same way as the product itself, otherwise it should be treated as non-hazardous waste. Discharge into waste water is not recommended. See section 6.2. Waste management provisions : In accordance with Annex II of Regulation (EC) No 1907/2006 (REACH), the Community or national provisions on waste management are presented. Community legislation: Directive 2018/851/EC, Commission Decision 2014/955/EU, Regulation (EU) no. 1357/2014 and the national legislation.			
	Hazardous waste code	HP4: Irritant - skin irritation and eye damage HP6: Acute toxicity			

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SECTION 14		Transport information			
	Regulatory information	ADR/RID	ADNR	IMDG	IATA
	The 1990 meetings of the United Nations RID/ADR subcommittee of experts on the transport of dangerous goods and the Dangerous Goods Code (CDG/IMO) meetings resulted in special provision No. commercial grade calcium, when composed primarily of a double salt (calcium nitrate and ammonium nitrate) containing not more than 10% ammonium nitrate and at least 12% water of crystallization, is considered non-hazardous".				
14.1	UN number	-			
14.2	UN proper shipping name	-		-	
14.3	Transport hazard class(es)				
	Class	-		-	
	Label	-		-	
14.4	Packing group	-			
14.5	Environmental hazards	Product not classified as hazardous to the aquatic environment.			
14.6	Special precautions for user	Not defined. See the relevant information, such as handling, in other sections of this document.			
14.7	Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.			
SECTION 15		Regulatory information			
15.1	Safety, health and environmental regulations/legislation specific for the substance or mixture				
	Regulation (EC) No 1907/2006 (REACH)	This product complies with the REACH Regulation.			
	Named dangerous substances - ANNEX VI (CLP)	Not applicable.			
	SEVESO Category	Not applicable.			
	Qualifying quantity (tonnes) for the application of lower-tier requirements	Not applicable.			
	Qualifying quantity (tonnes) for the application of upper-tier requirements	Not applicable.			
	Regulation (EC) No 1907/2006 - ANNEX XVII	Not applicable.			
	REGULATION (EU) 2019/1148				
	Annex I - Restricted Explosives Precursors (Upper limit value for licensing purposes under Article 5(3))	None substance listed.			

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	Annex II - Reportable Explosives Precursors	Contains Calcium ammonium nitrate double salt 15245-12-2
	Regulation (EC) No 273/2004 on Drug Precursors	None substance listed.
	Regulation (EU) No. 1009/2019	This product complies with the Fertilizer's Regulation.
	Regulation (EC) No. 1272/2008 (CLP)	This product complies with the CLP Regulation.
	Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.	Not applicable.
	Regulation (EC) No 649/2012 concerning the export and import of dangerous chemicals.	Not applicable.
	Regulation (EC) No 111/2005 laying down rules for the monitoring of and trade in drug precursors between the Community and third countries.	None substance listed.
	Evaluation PBT/mPmB	Not applicable.
15.2	Chemical safety assessment	
	A chemical safety assessment has been carried out and exposure scenarios are annexed to this sheet.	
SECTION 16 Other information		
	Relevant phrases	H302 Harmful if swallowed H318 Causes serious eye damage.
	Abbreviations and acronyms	ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road). STP: Sewage treatment plant. OECD: Organisation for Economic Co-operation and Development. IMDG: International Maritime Code for Dangerous Goods. IATA: International Air Transport Association. GHS: Globally Harmonised System of Classification and Labelling of Chemicals. CAS: Chemical Abstracts Service (division of the American Chemical Society). DNEL: Derived No-Effect Level (REACH). PNEC: Predicted No-Effect Concentration (REACH).
	Data compared to the previous version altered	Inclusion of UFI.

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	References	This safety data sheet has been prepared in accordance with: - ANNEX II: Guidance for the preparation of Safety Data Sheets of Regulation (EC) No 1907/2006 (Regulation (EU) 2020/878) based on the data included in the chemical safety report of registered substances. - Guidance available on the European Chemicals Agency (ECHA) website: (http://echa.europa.eu/). - Guidance for the compilation of safety data sheets for fertilizer materials (www.fertilizerseurope.com).
	Methods used for the classification of the mixture (Article 9 of Regulation (EC) No 1272/2008)	Classification and Labeling in accordance with the principle of extrapolation of Regulation No. 1272/2008 (CLP).
	Advice on any training appropriate for workers to ensure protection of human health and the environment	Minimum training in the prevention of occupational hazards is recommended for personnel who will handle this product, in order to facilitate the understanding and interpretation of this safety data sheet, as well as the product label.

The information contained in this safety data sheet is provided in good faith and its accuracy is based on knowledge of the product at the time of publication. The information presented is only intended to describe the product from the point of view of human and environmental protection and safety, and therefore cannot be regarded as product specifications. It does not imply acceptance of any commitment or legal responsibility on the part of the Company, for the consequences of its use or misuse in any circumstances. The information provided is considered accurate and current at the time of this edition, referring only to the product and may not be valid in compositions or formulations with other products. The responsibility for its use belongs to the users.

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Exposure Scenarios

Nitric acid, ammonium calcium salt

ES 1: **Manufacture - Industrial manufacture**

1. Title section

ES name: *Manufacture - Industrial manufacture*

Environment

Manufacturing of the substance	ERC 1
Manufacture of the substance - no STP	

Worker

Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.	PROC 1
Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions	PROC 2
Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition	PROC 3
Chemical production where opportunity for exposure arises	PROC 4
Transfer of substance or mixture (charging and discharging) at dedicated facilities	PROC 8b
Use as laboratory reagent	PROC 15
Manual maintenance (cleaning and repair) of machinery	PROC 28

2. Conditions of use affecting exposure

2.1. Control of environmental exposure

Operational conditions	ERC1	ERC1 - no STP
Amount used, frequency and duration of use (or from service life)		
Daily use amount at site	≤ 15 tonnes/day	≤ 2E3 tonnes/day
Annual use amount at site	≤ 4.5E3 tonnes/year	≤ 6E5 tonnes/year
Number of emission days per year	300 days/year	300 days/year
Conditions and measures related to biological sewage treatment plant		
Biological STP	Standard [Effectiveness Water: 0%]	None [Effectiveness Water: 0%]

Calcium nitrate - crystal

Discharge rate of STP	≥ 2E3 m3/day	-
Application of the STP sludge on agricultural soil	Yes	-
Conditions and measures related to external treatment of waste (including article waste)		
Particular considerations on the waste treatment operations	No (other reason) Waste disposal according to national/local legislation is sufficient	No (other reason) Waste disposal according to national/local legislation is sufficient
Other conditions affecting environmental exposure		
Receiving surface water flow rate	≥ 1.8E4 m3/day	≥ 1E6 m3/day
Discharge rate of effluent	-	≥ 1E5 m3/day

2.2. Control of worker exposure

PROCs	1	2	3	4	8b	15	28
Product (Article) characteristics							
Percentage (w/w) of substance in mixture/article	≤ 100%						
Physical form of the used product:	Solid (material with low dustiness)						
Amount used (or contained in articles), frequency and duration of use/exposure							
Duration of activity:	≤ 8 h/day						
Technical and organisational conditions and measures							
Local exhaust ventilation:	Basic general ventilation (at least 1 to 3 air changes/hour)	No					
Occupational Health and Safety Management System:	Advanced						
Room ventilation:	Basic (up to 3 ACH)						
Conditions and measures related to personal protection, hygiene and health evaluation							
Dermal Protection:	No						

Calcium nitrate - crystal

Respiratory Protection:	No
Face/eye Protection:	Eye protection (chemical goggles or visors need to be worn)
Other conditions affecting workers exposure	
Place of use:	Indoor
Operating temperature:	≤ 40 °C

3. Exposure estimation and reference to its source

3.1. Environmental release and exposure

Protection target	Exposure concentration		RCR	
	ERC1	ERC1- no STP	ERC1	ERC1- no STP
Fresh water	3.053 mg/L	5.723 mg/L	0.156	0.292
Sediment (freshwater)	14.83 mg/kg dw	27.80 mg/kg dw	0.155	0.291
Marine water	0.303 mg/kg dw	0.616 mg/L	0.016	0.032
Sediment (marine water)	1.473 mg/kg dw	2.992 mg/kg dw	0.016	0.032
Sewage Treatment Plant	18.75 mg/kg dw	0 mg/L	0.901	<0.01

Release route	Release estimation method		Explanation/Justification	
	ERC1	ERC1- no STP	ERC1	ERC1- no STP
Water	Estimated release factor		Release factor before on site RMM: 0.25% Release factor after on site RMM: 0.25% Local release rate: 37.5 kg/day	Release factor before on site RMM: 0.25% Release factor after on site RMM: 0.25% Local release rate: 5E3 kg/day
Air	Measured release rate		Release factor after on site RMM: 1.792% Local release rate: 268.8 kg/day	Release factor after on site RMM: 0.013% Local release rate: 268.8 kg/day
Non agricultural soil	ERC		Release factor after on site RMM: 0.01%	Release factor after on site RMM: 0.01%

Calcium nitrate - crystal

3.2. Worker exposure

PROCs	1	2	3	4	8b	15	28
Route of exposure and type of effects							
Dermal, local, long-term	-						
Dermal, local, acute	-						
Eye, local	-						
RCR							
Dermal, local, acute							
Dermal, local, long-term							
Eye, local	Qualitative (see below)						

Conclusion on risk characterisation (qualitative)

Eye, local

In case exposure can not be avoided by the type of work, chemical goggles or visors need to be worn.

4. Guidance to DU to evaluate whether they work inside the boundaries set by the ES

In any of the exposure scenarios (ES) described above, the downstream user (DU) works within the limits established by ES if the operational conditions (OC) and risk management measures (RMM) described in the same are complied. When the conditions for the DU are not explicitly described in the general conditions of the ES, the DU must ensure that its specific CO and RMM comply with what is established in them. If the concentration of the substance in the mixture is not explicitly indicated in the ES, no restriction should be applied, that is, up to 100% of the substance may be used. Depending on the basis of the exposure assessment conducted for the ES, this can be done in different ways, as described in each of the environmental and occupational EEs.

Any deviation from the described conditions of use implies:

- (i) inform the SDS provider about deviations and request their inclusion in the ES, or
- (ii) develop an CSR (Chemical Safety Report) for DU (in accordance with article 37, paragraph 4), submit it to ECHA and keep it as its own documentation.

Calcium nitrate - crystal

ES 2:

Formulation or re-packing - Industrial use to formulate fertilisers product mixtures

1. Title section

ES name: *Formulation or re-packing - Industrial use to formulate fertilisers product mixtures*

Environment

Formulation into mixture

ERC 2

Worker

Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

PROC 1

Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC 2

Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC 3

Use in batch and other process (synthesis) where opportunity for exposure arises

PROC 4

Mixing or blending in batch processes

PROC 5

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC 8a

Transfer of substance or mixture (charging and discharging) at dedicated facilities

PROC 8b

Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC 9

Tabletting, compression, extrusion, pelletisation, granulation

PROC 14

Use as laboratory reagent

PROC 15

Manual maintenance (cleaning and repair) of machinery

PROC 28

2. Conditions of use affecting exposure

2.1. Control of environmental exposure

Operational conditions

Amount used, frequency and duration of use (or from service life)

Daily use amount at site

≤ 15 tonnes/day

Annual use amount at site

≤ 4.5E3 tonnes/year

Number of emission days per year

300 days/year

Conditions and measures related to biological sewage treatment plant

Biological STP

Standard [Effectiveness Water: 0%]

Discharge rate of STP

≥ 2E3 m3/day

Calcium nitrate - crystal

Application of the STP sludge on agricultural soil	Yes
Conditions and measures related to external treatment of waste (including article waste)	
Particular considerations on the waste treatment operations	No (other reason) Waste disposal according to national/local legislation is sufficient
Other conditions affecting environmental exposure	
Receiving surface water flow rate	$\geq 1.8E4$ m ³ /day
Discharge rate of effluent	-
2.2. Control of worker exposure	
PROCs	1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15, 28
Product (Article) characteristics	
Percentage (w/w) of substance in mixture/article	$\leq 100\%$
Physical form of the used product:	Solid (material with low dustiness) Solid or liquid
Amount used (or contained in articles), frequency and duration of use/exposure	
Duration of activity:	≤ 8 h/day
Technical and organisational conditions and measures	
Local exhaust ventilation:	No
Occupational Health and Safety Management System:	Advanced
Room ventilation:	Basic (up to 3 ACH)
Conditions and measures related to personal protection, hygiene and health evaluation	
Dermal Protection:	No
Respiratory Protection:	No
Face/eye Protection:	Eye protection (chemical goggles or visors need to be worn)
Other conditions affecting workers exposure	

Calcium nitrate - crystal

Place of use:	Indoor
Operating temperature:	≤ 40 °C

3. Exposure estimation and reference to its source

3.1. Environmental release and exposure

Protection target	Exposure concentration	RCR
Fresh water	3.053 mg/L	0.156
Sediment (freshwater)	14.83 mg/kg dw	0.155
Marine water	0.303 mg/kg dw	0.016
Sediment (marine water)	1.473 mg/kg dw	0.016
Sewage Treatment Plant	18.75 mg/kg dw	0.901

Release route	Release estimation method	Explanation/Justification
Water	Estimated release factor	Release factor before on site RMM: 0.25% Release factor after on site RMM: 0.25% Local release rate: 37.5 kg/day
Air	ERC	Release factor before on site RMM: 2.5% Release factor after on site RMM: 2.5% Local release rate: 375 kg/day
Non agricultural soil	ERC	Release factor after on site RMM: 0.01%

3.2. Worker exposure

Route of exposure and type of effects	
Dermal, local, long-term	-
Dermal, local, acute	-
Eye, local	-
RCR	
Dermal, local, long-term	-
Dermal, local, acute	-
Eye, local	Qualitative (see below)

Calcium nitrate - crystal

Conclusion on risk characterisation (qualitative)

Eye, local

In case exposure can not be avoided by the type of work, chemical goggles or visors need to be worn.

4. Guidance to DU to evaluate whether they work inside the boundaries set by the ES

In any of the exposure scenarios (ES) described above, the downstream user (DU) works within the limits established by ES if the operational conditions (OC) and risk management measures (RMM) described in the same are complied. When the conditions for the DU are not explicitly described in the general conditions of the ES, the DU must ensure that its specific CO and RMM comply with what is established in them. If the concentration of the substance in the mixture is not explicitly indicated in the ES, no restriction should be applied, that is, up to 100% of the substance may be used. Depending on the basis of the exposure assessment conducted for the ES, this can be done in different ways, as described in each of the environmental and occupational EEs.

Any deviation from the described conditions of use implies:

- (i) inform the SDS provider about deviations and request their inclusion in the ES, or
- (ii) develop an CSR (Chemical Safety Report) for DU (in accordance with article 37, paragraph 4), submit it to ECHA and keep it as its own documentation.

Calcium nitrate - crystal

ES 3:

Widespread use by professional workers - Outdoor use – direct application of solid fertilizers to soil; surface spreading

1. Title section

ES name: *Widespread use by professional workers - Outdoor use – direct application of solid fertilizers to soil; surface spreading*

Environment

Outdoor use – direct application of solid fertilizers to soil; surface spreading	ERC 8e
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Worker

Mixing or blending in batch processes	PROC 5
Transfer of substance or mixture (charging/discharging) at non dedicated-facilities	PROC 8a
Transfer of substance or mixture (charging/discharging) at dedicated facilities	PROC 8b
Transfer of substance or mixture into small containers (dedicated filling line, including weighing)	PROC 9
Non industrial spraying	PROC 11
Use as laboratory reagent	PROC 15

2. Conditions of use affecting exposure

2.1. Control of environmental exposure

Operational conditions

Product (article) characteristics

- Solid fertilizers intended for outdoor use (in a.o. agriculture, forestry, horticulture, gardens, golf courses) by consumers and professionals. Farmers are considered professional users.

Amount used, frequency and duration of use (or from service life)

- Number of release days per year: $\geq$ days/year
1-3 applications per year; depending on crop type and agricultural soil characteristics
- Daily local widespread use amount: $\leq$ 0 tonnes/day
not relevant

Substance use amount expressed as maximum yearly fertilizer application rate (kg/ha/year):
Single application per year:

- High runoff scenario: 170 kg CaH₃NHNO₃/ha/year (=107 kg nitrate/ha/year)
- Intermediate runoff scenario: 425 kg CaH₃NHNO₃/ha/year (=268 kg nitrate/ha/year)
- Low runoff scenario: 849 kg CaH₃NHNO₃/ha/year (=536 kg nitrate/ha/year)

Split applications: 3 applications with 30 days interval between applications:

- High runoff scenario: 333 kg CaH₃NHNO₃/ha/year (=210 kg nitrate/ha/year)
- Intermediate runoff scenario: 832 kg CaH₃NHNO₃/ha/year (=525 kg nitrate/ha/year)
- Low runoff scenario: 1664 kg CaH₃NHNO₃/ha/year (=1050 kg nitrate/ha/year)

Technical and organisational conditions and measures

- Direct application of solid fertilizers to soil; surface spreading

Calcium nitrate - crystal

- Controlled application to agricultural soil

Conditions and measures related to biological sewage treatment plant

- Biological STP: None [Effectiveness Water: 0%]

Conditions and measures related to external treatment of waste (including article waste)

- Particular considerations on the waste treatment operations: Other

- Service life: not applicable to fertilizers

Other conditions affecting environmental exposure

- Place of use: Outdoor

2.2. Control of worker exposure

PROCs	5	8a	8b	9	11	15
Product (Article) characteristics						
Percentage (w/w) of substance in mixture/article	≤ 100%					
Physical form of the used product:	Solid (material with low dustiness) Solid or liquid					
Amount used (or contained in articles), frequency and duration of use/exposure						
Duration of activity:	≤ 8 h/day					
Technical and organisational conditions and measures						
Local exhaust ventilation:	No					
Occupational Health and Safety Management System:	Basic					
Room ventilation:	Basic (up to 3 ACH)					
Conditions and measures related to personal protection, hygiene and health evaluation						
Dermal Protection:	No					
Respiratory Protection:	No					
Face/eye Protection:	Eye protection (chemical goggles or visors need to be worn)					

Calcium nitrate - crystal

Other conditions affecting workers exposure

Place of use:	Outdoor
Operating temperature:	≤ 40 °C

3. Exposure estimation and reference to its source

3.1. Environmental release and exposure

Protection target	Exposure concentration	RCR
Fresh water	16.41 mg/L	0.897
Sediment (freshwater)	79.30 mg/kg dw	0.9
Marine water	-	-
Sediment (marine water)	-	-
Sewage Treatment Plant	-	-

Release route	Release estimation method	Explanation/Justification
Water	Estimated release factor (based on SPERC Fertilizers Europe SPERC 8e.1.v2)	Release factor before on site RMM: 0% Release factor after on site RMM: 0% Local release rate: 0 kg/day
Air	Estimated release factor (based on SPERC Fertilizers Europe SPERC 8e.1.v2)	Release factor before on site RMM: 0% Release factor after on site RMM: 0%
Non agricultural soil	Estimated release factor (based on SPERC Fertilizers Europe SPERC 8e.1.v2)	Release factor after on site RMM: 100%

3.2. Worker exposure

Route of exposure and type of effects	
Dermal, local, long-term	-
Dermal, local, acute	-
Eye, local	-
RCR	
Dermal, local, long-term	-
Dermal, local, acute	-

Calcium nitrate - crystal

Eye, local

Qualitative (see below)

Conclusion on risk characterisation (qualitative)

Eye, local

In case exposure can not be avoided by the type of work, chemical goggles or visors need to be worn.

4. Guidance to DU to evaluate whether they work inside the boundaries set by the ES

In any of the exposure scenarios (ES) described above, the downstream user (DU) works within the limits established by ES if the operational conditions (OC) and risk management measures (RMM) described in the same are complied. When the conditions for the DU are not explicitly described in the general conditions of the ES, the DU must ensure that its specific CO and RMM comply with what is established in them. If the concentration of the substance in the mixture is not explicitly indicated in the ES, no restriction should be applied, that is, up to 100% of the substance may be used. Depending on the basis of the exposure assessment conducted for the ES, this can be done in different ways, as described in each of the environmental and occupational EEs.

Any deviation from the described conditions of use implies:

- (i) inform the SDS provider about deviations and request their inclusion in the ES, or
- (ii) develop an CSR (Chemical Safety Report) for DU (in accordance with article 37, paragraph 4), submit it to ECHA and keep it as its own documentation.

Calcium nitrate - crystal

ES 4:

Widespread use by professional workers - Indoor use of solid and liquid fertilizers

1. Title section

ES name: *Widespread use by professional workers - Indoor use of solid and liquid fertilizers*

Environment

Indoor use of solid and liquid fertilizers

ERC 8b

Worker

Mixing or blending in batch processes

PROC 5

Transfer of substance or mixture (charging/discharging) at non dedicated-facilities

PROC 8a

Transfer of substance or mixture (charging/discharging) at dedicated facilities

PROC 8b

Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC 9

Non industrial spraying

PROC 11

Use as laboratory reagent

PROC 15

2. Conditions of use affecting exposure

2.1. Control of environmental exposure

Operational conditions

Product (article) characteristics

- Indoor use of solid and liquid fertilizers

Amount used, frequency and duration of use (or from service life)

- Number of release days per year: $\geq$ days/year
1-3 applications per year; depending on crop type and agricultural soil characteristics
- Daily local widespread use amount: $\leq$ 0 tonnes/day
not relevant
Substance use amount expressed as maximum yearly fertilizer application rate (kg/ha/year):
 - Single application per year: 425 kg CaH₃NHNO₃/ha/year (=268 kg nitrate/ha/year)
 - Split applications: 3 applications with 30 days interval between applications: 832 kg CaH₃NHNO₃/ha/year (=525 kg nitrate/ha/year)

Technical and organisational conditions and measures

- Controlled application to agricultural soil
- ERC 8b fertilizer releases

Calcium nitrate - crystal

Conditions and measures related to biological sewage treatment plant

- Biological STP: None [Effectiveness Water: 0%]

Conditions and measures related to external treatment of waste (including article waste)

- Particular considerations on the waste treatment operations: Other
- Service life: not applicable for fertilizers

Other conditions affecting environmental exposure

- Place of use: Indoor

2.2. Control of worker exposure

PROCs	5	8a	8b	9	11	15
Product (Article) characteristics						
Percentage (w/w) of substance in mixture/article	≤ 100%					
Physical form of the used product:	Solid (material with low dustiness) Solid or liquid					
Amount used (or contained in articles), frequency and duration of use/exposure						
Duration of activity:	≤ 8 h/day					
Technical and organisational conditions and measures						
Local exhaust ventilation:	No					
Occupational Health and Safety Management System:	Basic					
Room ventilation:	Basic (up to 3 ACH)					
Conditions and measures related to personal protection, hygiene and health evaluation						
Dermal Protection:	No					
Respiratory Protection:	No					
Face/eye Protection:	Eye protection (chemical goggles or visors need to be worn)					
Other conditions affecting workers exposure						

Calcium nitrate - crystal

Place of use:	Indoor
Operating temperature:	≤ 40 °C

3. Exposure estimation and reference to its source

3.1. Environmental release and exposure

Protection target	Exposure concentration	RCR
Fresh water	16.41 mg/L	0.897
Sediment (freshwater)	79.30 mg/kg dw	0.9
Marine water	-	-
Sediment (marine water)	-	-
Sewage Treatment Plant	-	-

Release route	Release estimation method	Explanation/Justification
Water	ERC	Release factor before on site RMM: 2% Release factor after on site RMM: 2% Local release rate: 0 kg/day
Air	Estimated release factor	Release factor before on site RMM: 0% Release factor after on site RMM: 0%
Agricultural soil	ERC	Release factor after on site RMM: 0%

3.2. Worker exposure

Route of exposure and type of effects	
Dermal, local, long-term	-
Dermal, local, acute	-
Eye, local	-
RCR	
Dermal, local, long-term	-
Dermal, local, acute	-
Eye, local	Qualitative (see below)

Calcium nitrate - crystal

Conclusion on risk characterisation (qualitative)

Eye, local

In case exposure can not be avoided by the type of work, chemical goggles or visors need to be worn.

4. Guidance to DU to evaluate whether they work inside the boundaries set by the ES

In any of the exposure scenarios (ES) described above, the downstream user (DU) works within the limits established by ES if the operational conditions (OC) and risk management measures (RMM) described in the same are complied. When the conditions for the DU are not explicitly described in the general conditions of the ES, the DU must ensure that its specific CO and RMM comply with what is established in them. If the concentration of the substance in the mixture is not explicitly indicated in the ES, no restriction should be applied, that is, up to 100% of the substance may be used. Depending on the basis of the exposure assessment conducted for the ES, this can be done in different ways, as described in each of the environmental and occupational EEs.

Any deviation from the described conditions of use implies:

- (i) inform the SDS provider about deviations and request their inclusion in the ES, or
- (ii) develop an CSR (Chemical Safety Report) for DU (in accordance with article 37, paragraph 4), submit it to ECHA and keep it as its own documentation.

Calcium nitrate - crystal

ES 5:

Consumer Use - Outdoor use - direct application of solid fertilizers to soil, surface spreading

1. Title section

ES name: *Consumer Use - Consumer use of Nitric acid, ammonium calcium salt*

Environment

Outdoor use - direct application of solid fertilizers to soil, surface spreading

ERC 8e

Consumer

Fertilizers

PC 12

2. Conditions of use affecting exposure

2.1. Control of environmental exposure

Product (article) characteristics

• Solid fertilizers intended for outdoor use (in a.o. agriculture, forestry, horticulture, gardens, golf courses) by consumers and professionals. Farmers are considered professional users.

Amount used, frequency and duration of use (or from service life)

• Number of release days per year: days/year
1-3 applications per year; depending on crop type and agricultural soil characteristics

• Daily local widespread use amount: ≤ 0 tonnes/day
not relevant

Substance use amount expressed as maximum yearly fertilizer application rate (kg/ha/year):

Single application per year:

- High runoff scenario: 170 kg CaH₃NHNO₃/ha/year (=107 kg nitrate/ha/year)
- Intermediate runoff scenario: 425 kg CaH₃NHNO₃/ha/year (=268 kg nitrate/ha/year)
- Low runoff scenario: 849 kg CaH₃NHNO₃/ha/year (=536 kg nitrate/ha/year)

Split applications: 3 applications with 30 days interval between applications:

- High runoff scenario: 333 kg aH₃NHNO₃/ha/year (=210 kg nitrate/ha/year)
- Intermediate runoff scenario: 832 kg CaH₃NHNO₃/ha/year (=525 kg nitrate/ha/year)
- Low runoff scenario: 1664 kg CaH₃NHNO₃/ha/year (=1050 kg nitrate/ha/year)

The default worst-case scenario is based on a 1 ha agricultural field, surrounded by a shallow water body (width of 2.5 m and depth of 0.3 m), with a surface of one tenth of the agricultural field (field:water ratio of 10). A default maximum runoff percentage of 5% is applied for such scenarios, where 36% of the fertilized crop area is within 10 m of nearby surface water.

An intermediate runoff scenario (2% runoff) can be applied when 60% runoff reduction is anticipated. This corresponds to

Conditions and measures related to external treatment of waste (including article waste)

• Particular considerations on the waste treatment operations: Other

• Controlled application to agricultural soil

Other conditions affecting environmental exposure

• Place of use: Outdoor

• Biological STP: None [Effectiveness Water: 0%]

2.2. Control of consumer exposure

Product (Article) characteristics

Calcium nitrate - crystal

Percentage (w/w) of substance in mixture/article:	≤ 100 %
Physical form of the used product:	Solid (non or low dusty form)

Information and behavioral advice for consumers

• Product labelling

Product labelling should contain instructions to minimise the exposure (e.g. wash hands after use, ...) Only required when the mixture is classified as eye irritating or damaging.

3. Exposure estimation and reference to its source

3.1. Environmental release and exposure

Protection target	Exposure concentration	RCR
Fresh water	16.41 mg/L	0.897
Sediment (freshwater)	79.30 mg/kg dw	0.9
Marine water	-	-
Sediment (marine water)	-	-
Sewage Treatment Plant	-	-

Release route	Release estimation method	Explanation/Justification
Water	Estimated release factor	Release factor before on site RMM: 0% Release factor after on site RMM: 0% Local release rate: 0 kg/day
Air	Estimated release factor	Release factor before on site RMM: 0% Release factor after on site RMM: 0%
Agricultural soil	Estimated release factor	Release factor after on site RMM: 100%

3.2. Consumer exposure

Route of exposure and type of effects	
Dermal, local, long-term	-
Dermal, local, acute	-
Eye, local	-

Calcium nitrate - crystal

RCR	
Dermal, local, long-term	-
Dermal, local, acute	-
Eye, local	-

Conclusion on risk characterisation (qualitative)

Eye, local

Product labelling should contain instructions to minimise the exposure (e.g. wash hands after use, ...) Only required when the mixture is classified as eye irritating or damaging.

4. Guidance to DU to evaluate whether they work inside the boundaries set by the ES

In any of the exposure scenarios (ES) described above, the downstream user (DU) works within the limits established by ES if the operational conditions (OC) and risk management measures (RMM) described in the same are complied. When the conditions for the DU are not explicitly described in the general conditions of the ES, the DU must ensure that its specific CO and RMM comply with what is established in them. If the concentration of the substance in the mixture is not explicitly indicated in the ES, no restriction should be applied, that is, up to 100% of the substance may be used. Depending on the basis of the exposure assessment conducted for the ES, this can be done in different ways, as described in each of the environmental and occupational EEs.

Any deviation from the described conditions of use implies:

- (i) inform the SDS provider about deviations and request their inclusion in the ES, or
- (ii) develop an CSR (Chemical Safety Report) for DU (in accordance with article 37, paragraph 4), submit it to ECHA and keep it as its own documentation.

Calcium nitrate - crystal

ES 6:

Consumer use - Indoor use of solid and liquid fertilizers

1. Title section

ES name: *Consumer use - Indoor use of solid and liquid fertilizers*

Environment

Indoor use of solid and liquid fertilizers

ERC 8b

Consumer

Fertilizers

PC 12

2. Conditions of use affecting exposure

2.1. Control of environmental exposure

Product (article) characteristics

- Indoor use of solid and liquid fertilizers
Solid and liquid fertilizers intended for indoor use by consumers and professionals. Farmers are considered professional users.

Amount used, frequency and duration of use (or from service life)

- Number of release days per year: days/year
1-3 applications per year; depending on crop type and agricultural soil characteristics
- Daily local widespread use amount: ≤ 0 tonnes/day
not relevant
Substance use amount expressed as maximum yearly fertilizer application rate (kg/ha/year):
 - Single application per year: 425 kg $\text{CaH}_3\text{NHNO}_3$ /ha/year (=268 kg nitrate/ha/year)
 - Split applications: 3 applications with 30 days interval between applications: 832 kg $\text{CaH}_3\text{NHNO}_3$ /ha/year (=525 kg nitrate/ha/year)

Conditions and measures related to external treatment of waste (including article waste)

- Particular considerations on the waste treatment operations: Other
- Controlled application to agricultural soil
- ERC 8b fertilizer releases

Other conditions affecting environmental exposure

- Place of use: Indoor
- Biological STP: None [Effectiveness Water: 0%]

2.2. Control of consumer exposure

Product (Article) characteristics

Percentage (w/w) of substance in mixture/article:

≤ 100 %

Physical form of the used product:

Solid (non or low dusty form)
Solid or liquid.

Information and behavioral advice for consumers

Calcium nitrate - crystal

- Product labelling

Product labelling should contain instructions to minimise the exposure (e.g. wash hands after use, ...) Only required when the mixture is classified as eye irritating or damaging.

3. Exposure estimation and reference to its source

3.1. Environmental release and exposure

Protection target	Exposure concentration	RCR
Fresh water	16.41 mg/L	0.897
Sediment (freshwater)	79.30 mg/kg dw	0.9
Marine water	-	-
Sediment (marine water)	-	-
Sewage Treatment Plant	-	-

Release route	Release estimation method	Explanation/Justification
Water	Estimated release factor	Release factor before on site RMM: 2% Release factor after on site RMM: 2% Local release rate: 0 kg/day
Air	Estimated release factor	Release factor before on site RMM: 0% Release factor after on site RMM: 0%
Agricultural soil	Estimated release factor	Release factor after on site RMM: 0%

3.2. Consumer exposure

Route of exposure and type of effects	
Dermal, local, long-term	-
Dermal, local, acute	-
Eye, local	-
RCR	
Dermal, local, long-term	-

Calcium nitrate - crystal

Dermal, local, acute	-
Eye, local	-

Conclusion on risk characterisation (qualitative)

Eye, local

Product labelling should contain instructions to minimise the exposure (e.g. wash hands after use, ...) Only required when the mixture is classified as eye irritating or damaging.

4. Guidance to DU to evaluate whether they work inside the boundaries set by the ES

In any of the exposure scenarios (ES) described above, the downstream user (DU) works within the limits established by ES if the operational conditions (OC) and risk management measures (RMM) described in the same are complied. When the conditions for the DU are not explicitly described in the general conditions of the ES, the DU must ensure that its specific CO and RMM comply with what is established in them. If the concentration of the substance in the mixture is not explicitly indicated in the ES, no restriction should be applied, that is, up to 100% of the substance may be used. Depending on the basis of the exposure assessment conducted for the ES, this can be done in different ways, as described in each of the environmental and occupational EEs.

Any deviation from the described conditions of use implies:

- (i) inform the SDS provider about deviations and request their inclusion in the ES, or
- (ii) develop an CSR (Chemical Safety Report) for DU (in accordance with article 37, paragraph 4), submit it to ECHA and keep it as its own documentation.