


Safety Data Sheet

According to Commission Regulation (EU) N° 2015/830

Issue date 11/07/2013
 Issue 3
 Review date 31/05/2016
 Review 4

Calcium Nitrate Solution

SECTION 1 Identification of the substance/mixture and of the company/undertaking								
1.1	Product identifier							
	Product commercial name	Calcium Nitrate Solution						
	Chemical name	Not applicable						
	Other names	Not applicable						
	Chemical formula	Not applicable						
	EU index number (Appendix 1)	Not applicable						
	CE No	Not applicable						
	CAS No.	Not applicable						
	REACH or National product registration number	Not applicable						
1.2	Relevant identified uses of the substance or mixture and uses advised against							
	Identified uses	Fertiliser, waste water treatment, laboratory chemical product, building materials						
	Uses advised against							
1.3	Details of the supplier of the safety data sheet							
	Company name	FERTIBERIA. S.A.						
	Company address	Paseo de la Castellana, 259 D. Plantas 47 y 48 - 28046 Madrid						
	Company telephone number	Central: 91.586.62.00; Sagunto Factory: 962.69.90.04						
	Company email for SDS	reachfertiberia@fertiberia.es						
1.4	Emergency telephone number	Sagunto Factory: 962.69.90.04						
SECTION 2 Hazards identification								
2.1	Classification of the substance or mixture*	According to Regulation EC 1272/2008 [CLP] Acute tox. cat 4; H302 Eye Dam. 1; H318						
2.2	Label elements	Pictograms	Signal word	Hazard statements	Precautionary Statements			
			Danger	H302 H318	P264 P280 P301+P312 P305+P351+P338 P310			
2.3	Other hazards							
* To understand the full meaning of hazard statements (H): see section 16								
SECTION 3 Composition/information on ingredients								
3.2	Name	% (w/w)	CAS No.	IUPAC	Index No R.1272/2008	REACH Registration Number	Classification Regulation 1272/2008	Specific concentration limits
	Calcium nitrate	≥ 25 and < 69	10124-37-5	calcium dinitrate	-	01-2119495093-35-0011	Oxidising Solid. Cat3; H272 Acute Toxicity. Cat4; H302 Eye Dam. Cat1; H318	

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SECTION 4		First aid measures						
4.1	Description of first aid measures							
	Ingestion	Do not induce vomiting. If victim is conscious, rinse mouth and give water or milk to drink. If ill-feeling persists or victim is unconscious, call a doctor.						
	Contact with skin	Wash affected zone with soap and water						
	Contact with eyes	Get medical attention immediately. Remove contact lenses if present and easy to do. Rinse eyes with running water for at least 15 minutes.						
4.2	Most important symptoms and effects, both acute and delayed							
	eyes	Causes serious eye damage.						
	ingestion	Can produce disorders in intestinal tract as well as burns in the mouth, throat and digestive system. Depending on the amount ingested, it may cause poisoning						
4.3	Indication of any immediate medical attention and special treatment needed							
SECTION 5		Firefighting measures						
5.1	Extinguishing media							
	Suitable extinguishing media	Water						
	Unsuitable extinguishing media	Chemical extinguishers, foam and sand						
5.2	Special hazards arising from the substance or mixture							
	Special hazards	The solution is not inflammable or oxidising.						
	Thermal decomposition or product combustion hazards	Can produce nitrogen oxide.						
5.3	Advice for firefighters							
	Specific firefighting methods	Call fire service. Avoid inhaling smoke. Stay "upwind" of the fire.						
	Special protective equipment for firefighting	Self-contained breathing apparatus and adequate protective clothing.						
SECTION 6		Accidental release measures						
6.1	Personal precautions, protective equipment and emergency procedures							
		Avoid contact with eyes, skin and clothing. Keep unnecessary personnel away. Wear safety glasses, chemical resistant gloves (PVC) and rubber boots						
6.2	Environmental precautions							
		Prevent it from reaching drainage networks and surface and deep waters, as large quantities can produce eutrophication. Any spill of the liquid must be cleaned immediately. In case of accidental contamination of drainage networks or water courses, inform the local authorities immediately.						
6.3	Methods and material for containment and cleaning up							
		Any spill must be immediately cleaned and deposited in a clean, labelled container for recovery or suitable disposal. Clean residual waste with plenty of water.						
6.4	Reference to other sections							
		See section 8 for personal protective equipment and section 13 for the disposal of waste						
SECTION 7		Handling and storage						
7.1	Precautions for safe handling							
		Avoid contact with eyes and skin using the protection equipment indicated in section 8. Ensure adequate ventilation. Do not eat, drink or smoke in work areas. Wash hands after use.						
7.2	Conditions for safe storage, including any incompatibilities							
		Keep away from heat sources. Avoid contamination with inflammable materials, reducing agents, alkalis and metals.						
	Recommended packaging materials	Reinforced plastic recipients, for their pH value.						
7.3	Specific end uses							
		See section 1.2 and appendices for exposure scenarios.						
<i>Note: stability and reactivity, see section 10</i>								
SECTION 8		Exposure controls/personal protection						
8.1	Control parameters							
	Exposure limit values	Component	CAS					
		Calcium nitrate	10124-37-5					
			Not established					
	Derived from the CSR	DNEL	worker		consumer			
			oral	Not applicable		8.33 mg/Kg bw/day		
			inhalation	24.5 mg/m ³		6.3 mg/Kg bw/day		
			dermal	13.9 mg/Kg bw/day		8.33 mg/Kg bw/day		
	PNEC	water		air	soil	microbiological	sediment	oral
		fresh water: 0.45mg / L sea water: 0.045 mg / L intermittent emission: 4.5 mg / L		Not available	Not available	18 mg / L	Not available	Not relevant

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8.2	Exposure controls				
	Hygiene controls		Do not eat, drink or smoke in storage and handling areas. Wash hands after handling. Install showers and wash basins in storage and handling areas. Install systems that avoid projections at storage and handling locations.		
	Personal protection measures				
		Eyes	Use homologated security glasses or face shield		
		Skin and body	Chemical resistant gloves (PVC, Neoprene, ...)		
		Respiratory	Not relevant		
		Thermal	Not relevant		
	Environmental exposure controls		See section 6.		
<i>Advice relating to personal protection is valid for high exposure levels.</i>					
<i>Choose personal protection equipment suitable to exposure risks.</i>					
SECTION 9 Physical and chemical properties					
9.1	Information on basic physical and chemical properties				
	Aspect	Liquid			
	Colour	colourless or pale yellow			
	Odour	odourless			
	Molecular weight	Not applicable			
	pH	>2 (in water solution at 10%)			
	Boiling point	Not available			
	Melting point	-10 °C			
	Flash-point	Not applicable			
	Flammability	Non flammable			
	Explosive properties	Non-explosive			
	Auto-ignition temperature	Not applicable			
	Decomposition temperature	Not available			
	Lower explosive limit	Not applicable			
	Upper explosive limit	Not applicable			
	Oxidising properties	Non-oxidising			
	Density	1.4 gr/cm ³			
	Vapour pressure at 20 °C	Not available			
	Vapour density	Not available			
	Partition coefficient n-octanol/water	Not applicable			
	Viscosity	Not available			
	Water solubility	Soluble			
9.2	Other information				
	Not available				
SECTION 10 Stability and reactivity					
10.1	Reactivity				
	Not available				
10.2	Chemical stability				
	Stable under normal conditions of storage, handling and use				
10.3	Possibility of hazardous reactions				
	Not available				
10.4	Conditions to avoid				
	Avoid contamination with incompatible materials. Keep away from heat sources or naked flames for long periods.				
10.5	Incompatible materials				
	Inflammable materials, reducing agents, acids, alkalis, chlorates, chlorides, chromates, nitrites, permanganate, metal powders and metal-containing substances such as copper, nickel, cobalt, zinc and associated alloys.				
10.6	Hazardous decomposition products				
	Nitrogen oxide can be produced during decomposition				
SECTION 11 Toxicological information					
11.1	Information on toxicological effects				
	Acute toxicity				
	Component	CAS No.	Method	Species	Via
	Calcium nitrate	10124-37-5	OECD 423 OECD 402	rat rat	oral skin respiratory
	DL50 >300 - < 2000 mg / Kg pc. Toxic. (ETA)=500 mg / Kg pc. DL50 > 2000 mg / Kg pc. Based on available data, calcium nitrate does not have to be classified. Not relevant. Low-volatility substance				
	Skin corrosion/irritation				
	Component	CAS No.	Method	Species	Via
	Calcium nitrate	10124-37-5	OECD 404	mouse	skin
	Non-irritant. In the light of available data the classification criteria are not fulfilled.				
	Serious eye damage/irritation				
	Component	CAS No.	Method	Species	Via
	Calcium nitrate	10124-37-5	OECD 405	mouse	eyes
	Causes serious eye damage.				
	Respiratory or skin sensitisation				
	Component	CAS No.	Method	Species	Via
	Calcium nitrate	10124-37-5	OECD 429	mouse	skin respiratory
	Non-sensitising. In the light of available data the classification criteria are not fulfilled. Not available.				
	Germ cell mutagenicity				
	Component	CAS No.	Method	Species	Result
	Calcium nitrate	10124-37-5	OECD 471 OECD 476 OECD 473	bacteria mammal cells mammal cells	Non-mutagenic. Non-mutagenic. Non-mutagenic.

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Carcinogenicity					
Component	CAS No.	Method	Species	Via	Result
Calcium nitrate	10124-37-5			oral respiratory skin	Not applicable. Non-genotoxic substance. Not applicable. Non-genotoxic substance. Not applicable. Non-genotoxic substance.
Reproductive toxicity					
Component	CAS No.	Method	Species	Via	Result
Calcium nitrate	10124-37-5	OECD 422	rat	oral	NOAEL \geq 1,500 mg /kg pc / day. Not Classified
STOT-single exposure and STOT-repeated exposure					
Component	CAS No.	Method	Species	Via	Result
Calcium nitrate	10124-37-5	OECD 407	rat	oral respiratory skin	NOAEL \geq 1000 mg /kg pc / day. Non-toxic. In the light of available data the classification criteria are not fulfilled. Not available. Low-volatility substance Not available. Not applicable.
Aspiration hazard	No known significant effects or critical hazards				
SECTION 12 Ecological information					
12.1	Toxicity				
Water toxicity					
Component	CAS No.		Fish	Crustaceans	Algae
Calcium nitrate	10124-37-5	Short term	CL50(96h) = 1378 mg / L	EC50 (48h) = 490 mg / L	EC50 (10days) = 1700 mg / L
		Long term	Not necessary	Not necessary	Not available
Land Toxicity					
Component	CAS No.	Macroorganisms	Microorganisms	Other organisms	
Calcium nitrate	10124-37-5	Not necessary	Not necessary	Not available	
Microbiological activity in waste water treatment plants					
Component	CAS No.	Toxicity for aquatic microorganisms			
Calcium nitrate	10124-37-5	EC50 (180 min) = 180 mg / L			
		EC50 (180min) = 1000 mg / L			
12.2	Persistence and degradability				
Component	CAS No.	Period		Degradation half life	
Calcium nitrate	10124-37-5	Hydrolysis	Non-hydrolysis	Not required. Inorganic substance	
		Photolysis	Not required		
		Biodegradation	Not required		
12.3	Bioaccumulative potential				
Component	CAS No.	Octanol-water partition coefficient (Kow)	Bioconcentration factor (BCF)	Comments	
Calcium nitrate	10124-37-5	Not applicable. Inorganic substance.	-	Low bioaccumulative potential	
12.4	Mobility in soil				
Component	CAS No.	Result			
Calcium nitrate	10124-37-5	Absorption	Low absorption potential. Substance totally dissociated into its ions		
		Sublimation	Not applicable. Inorganic substance		
12.5	Results of PBT and vPvB assessment				
Assessment has not been carried out given the inorganic nature of calcium					
12.6	Other adverse effects				
Harmless substance for the environment					
SECTION 13 Disposal considerations					
13.1	Waste treatment methods				
Depending on the level of contamination, eliminate as fertiliser or at an authorised waste facility. Containers: Empty and wash. Manage as harmless waste.					

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SECTION 14 Transport Information								
14.1 - 14.6	Regulatory Information	UN Number	Proper shipping name	Class	Packing group	Label	Environmental hazards	Special precautions for users
	Harmless waste for transport	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.7 <i>Transport in bulk according to Annex II of Marpol and the IBC Code: Not applicable</i>								
SECTION 15 Regulatory information								
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture								
	R.D. 261/96 on protection of water from nitrates (Directive 91/676/EC) Regulation 2003/2003 for fertilisers Regulation 1907/2006 (REACH) Regulation 1272/2008 (CLP) R.D. 506/2013 (fertilizers)							
15.2 Chemical Safety Assessment								
	Assessment of Chemical Safety carried out for calcium nitrate							
SECTION 16 Other information								
	Hazard statements	H302: Harmful if swallowed H318: Causes serious eye damage						
	Precautionary statements	P102: Keep out of reach of children. P264: Wash hands thoroughly after handling P270: Do not eat, drink or smoke when using this product P280: Wear protective gloves and eye protection P301+P312: IF SWALLOWED: Immediately call a POISON CENTRE or doctor P330: Rinse mouth P305+P351+P338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER or a doctor.						
	Bibliographical references and data sources	Assessment of chemical safety of calcium nitrate						
	Abbreviations and acronyms	ELV-DE: Environmental limit value (daily exposure) ELV-ST Environmental limit value (short term) NOAEL: No observable adverse effect level LD50: Lethal dose 50% LC50: Lethal concentration 50% DNEL: Derived no effect level PNEC: Predicted no effect concentration LOEC: Lowest observed effect concentration NOEC: No observed effect concentration NOAEC: No observed adverse effect concentration						
	Adequate training for workers	Obligatory training in occupational risk prevention						
	Date of prior SDS	Version 3 dated 11.07.13						
	Modifications made to present revision	Section 2: Hazard modification including indication H318. Adapt to Regulation 830/2015						
Exposure scenarios 1,2,3 and 4 are attached								

The information contained in this Safety Data Sheet is given in good faith. It is accurate to the best of our knowledge and belief and represents the most up to date information about the product at the time of publication. The information given in this data sheet does not constitute or replace the user's own assessment of workplace risks as required by other health and safety legislation.

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Safety Data Sheet Appendices Exposure Scenario 1

1	Title of Exposure Scenario (ES)																		
	Manufacture of calcium nitrate																		
2	Description of activities or processes covered by the exposure scenario																		
	<p>List of all the use descriptors related to ES 1</p> <p>SU 3/8/9 * PROC 1/2/3/8b/14/15 ERC 1</p> <p>Name/s of contributing scenario/s related to the environment and their corresponding Environmental Release Class (ERC)</p> <p>1. Manufacture of substances (ERC 1)</p> <p>Name/s of contributing scenario/s for the worker and their corresponding Process Category (PROC)</p> <p>1. Use in enclosed processes, no likelihood of exposure (PROC 1) 2. Use in closed, continuous processes with occasional controlled exposure (PROC 2) 3. Use in closed batch processes (synthesis or formulation) (PROC 3) 4. Transfer of substances or preparations (charging/discharging) from/to vessels/large containers at dedicated facilities (PROC 8b) 6. Production of mixtures or articles by tableting, compression, extrusion, pelletisation (PROC 14) 7. Use as laboratory reagent (PROC 15)</p> <p>* Agency Guidance Document, Chapter R.12: Use descriptor systems: SU 3 (Industrial manufacturing: Use of substances as such or in preparations in industrial facilities) / SU 8 (Manufacture of bulk, large scale chemicals) / SU 9 (Manufacture of fine chemicals)</p>																		
2.1	Contributing scenario (1) controlling environmental exposure for manufacture of calcium nitrate (ES1)																		
	<p>Environmental exposure due to manufacture of calcium nitrate</p> <p>Section 2.1 describes emissions into the environment that might take place while calcium nitrate is being manufactured (ERC 1).</p> <p>As this substance does fulfil criteria for classification as hazardous to the environment, the environmental risk assessment has not been carried out for this substance and therefore the conditions that affect the environment are not included during this use.</p>																		
2.2	Contributing scenario (2) controlling exposure of workers for manufacture of the substance, including handling, storage and quality controls																		
	<p>Section 2.2 describes potential exposure of workers from manufacture of the substance, including handling, storage and quality controls.</p> <p>All the relevant processes for the contributory scenarios identified by the PROC codes in point 1 of this scenario (PROC 1/2/3/8b/14/15) have the same operating conditions and risk management measures for personnel. Consequently they are all covered by just one contributing scenario (2).</p>																		
	<table border="1"> <tr> <td>Product characteristics</td> <td>Solid with low dust formation index Liquid</td> </tr> <tr> <td>Quantities used</td> <td>Not relevant</td> </tr> <tr> <td>Frequency and duration of use or exposure</td> <td>> 4 hours a day</td> </tr> <tr> <td>Human factors not influenced by risk management</td> <td>Not relevant</td> </tr> <tr> <td>Other operational conditions that have an impact on worker exposure</td> <td>Calcium nitrate is manufactured in enclosed environments</td> </tr> <tr> <td>Technical conditions and measures at process level (source) to prevent release</td> <td>Not relevant</td> </tr> <tr> <td>Technical conditions and measures for controlling dispersion of the source to workers</td> <td>1.- Adequate containment of the substance 2.- Good ventilation conditions</td> </tr> <tr> <td>Organisational measures to prevent or limit releases, dispersion and exposure</td> <td>Not relevant</td> </tr> <tr> <td>Conditions and measures for personal protection, hygiene and health evaluation</td> <td>Use safety glasses</td> </tr> </table>	Product characteristics	Solid with low dust formation index Liquid	Quantities used	Not relevant	Frequency and duration of use or exposure	> 4 hours a day	Human factors not influenced by risk management	Not relevant	Other operational conditions that have an impact on worker exposure	Calcium nitrate is manufactured in enclosed environments	Technical conditions and measures at process level (source) to prevent release	Not relevant	Technical conditions and measures for controlling dispersion of the source to workers	1.- Adequate containment of the substance 2.- Good ventilation conditions	Organisational measures to prevent or limit releases, dispersion and exposure	Not relevant	Conditions and measures for personal protection, hygiene and health evaluation	Use safety glasses
Product characteristics	Solid with low dust formation index Liquid																		
Quantities used	Not relevant																		
Frequency and duration of use or exposure	> 4 hours a day																		
Human factors not influenced by risk management	Not relevant																		
Other operational conditions that have an impact on worker exposure	Calcium nitrate is manufactured in enclosed environments																		
Technical conditions and measures at process level (source) to prevent release	Not relevant																		
Technical conditions and measures for controlling dispersion of the source to workers	1.- Adequate containment of the substance 2.- Good ventilation conditions																		
Organisational measures to prevent or limit releases, dispersion and exposure	Not relevant																		
Conditions and measures for personal protection, hygiene and health evaluation	Use safety glasses																		
3	Estimation of exposure and reference to its source																		
	<p>Information for contributing scenario 1 (environmental exposure):</p> <p>No environmental assessment was completed because the substance does not fulfil criteria for classification as hazardous for the environment and therefore there is no additional assessment of environmental exposure.</p> <p>Information for contributing scenario 2 (exposure for personnel):</p> <p>A qualitative assessment has been included that concludes that this use is safe for workers.</p> <p>The main toxicological effect of this substance is eye irritation (local parameter), for which a DNEL value cannot be estimated, because there is no dose-response information available. Although this substance is toxic orally, this route of exposure is not relevant for this scenario, it is not considered probable and therefore a value for oral exposure was not estimated. The substance did not show systemic effects in studies on repeated doses (chronic), made with doses that are so high that that the workers are not going to be exposed to them (see relevant DNEL: section 8 FDS), it was also considered unnecessary to carry out an assessment of quantitative risks.</p>																		
4	Guidance for intermediate users to assess if they working within the limits set by the ES																		
	Additional risk management measures apart from the ones mentioned above in the contributing scenarios (2.1, 2.2) are not required to guarantee safety during this use and thus work within the limits of the ES 1 exposure scenario.																		
5	Good practice advice in addition to that included in the Chemical Safety Assessment (CSA) required by REACH. Measures not subject to art. 37 (4) REACH																		
	<ul style="list-style-type: none"> - Adequate containment of the substance - Minimise the number of exposed personnel - Segregate the releasing processes - Utilise effective contamination extraction systems - Good ventilation conditions - Minimise manual handling - Avoid contact with contaminated objects and instruments - Regularly clean the work area and equipment - Supervise the area to check that risk management measures are being applied - Train personnel for good practices - Keep standard personal hygiene conditions 																		

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Safety Data Sheet Appendices Exposure Scenario 2

1	Title of Exposure Scenario (ES)	Industrial use of calcium nitrate for formulating mixtures, as intermediate substance and for end use by industry																		
2	Description of activities or processes covered by the exposure scenario	<p>List of all the use descriptors related to ES 2 SU 3/10 * PC0 (K35000)/4/9a/11/12/14/16/20/21/34/35/37/39 * PROC 1/2/3/4/5/7/8a/8b/9/10/13/14/15 ERC 2/4/5/6a/6b/6d/7</p> <p>Names of contributing scenario/s related to the environment and their corresponding Environmental Release Class (ERC)</p> <ol style="list-style-type: none"> 1. Formulation of preparations (ERC 2) 2. Industrial use of processing aids in processes and products, not becoming part of articles (ERC 4) 3. Industrial use resulting in inclusion into or onto a matrix (ERC 5) 4. Industrial use resulting in manufacture of another substance (use of intermediates) (ERC 6a) 5. Industrial use of reactive processing aids (ERC 6b) 6. Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers (ERC 6d) 7. Industrial use of substances in closed systems (ERC 7) <p>Names of contributing scenario/s for the worker and their corresponding Process Category (PROC)</p> <ol style="list-style-type: none"> 1. Use in enclosed processes, no likelihood of exposure (PROC 1) 2. Use in closed, continuous processes with occasional controlled exposure (PROC 2) 3. Use in closed batch processes (synthesis or formulation) (PROC 3) 4. Use in batch and other processes (synthesis) where opportunity for exposure arises (PROC 4) 5. Mixing or blending in batch processes (multistage and/or significant contact) (PROC 5) 6. Industrial spraying (PROC 7) 7. Transfer of substances or preparations (charging/discharging) from/to vessels/large containers at non-dedicated facilities (PROC 8a) 8. Transfer of substances or preparations (charging/discharging) from/to vessels/large containers at dedicated facilities (PROC 8b) 9. Transfer of substances or preparations into small containers (dedicated filling line, including weighing) (PROC 9) 10. Roller application or brushing (PROC 10) 11. Treatment of articles by dipping and pouring (PROC 13) 12. Production of mixtures or articles by tableting, compression, extrusion, pelletisation (PROC 14) 13. Use as laboratory reagent (PROC 15) <p>* Agency Guidance Document, Chapter R.12: Use descriptor systems: SU 3 (Industrial manufacturing: Use of substances as such or in preparations in industrial facilities) / SU 10 (Formulation [mixing] of preparations and/or repackaging (without including alloys)). PC 0 (K3500: construction materials) / PC 4 (Anti-freeze and de-icing products) / PC 9a (Coatings and paints, fillers, putties, thinners) / PC 11 (Explosives) / PC 12 (Fertilizers) / PC 14 (Metal surface treatment products, including galvanic and electroplating products) / PC 16 (Heat transfer fluids) / PC 20 (Products such as ph-regulators, flocculants, precipitants, neutralisation agents, other unspecified) / PC 21 (Laboratory chemicals) / PC 34 (Textile dyes, finishing and impregnating products) / PC 35 (Washing and cleaning products (including solvent based products)) / PC 37 (Water treatment chemicals) / PC 39 (Cosmetics, personal care).</p>																		
2.1	Contributing scenario (1) controlling environmental exposure for formulating preparations and industrial use as intermediate substance (ES 2)	<p>Environmental exposure due to formulation of preparations and industrial use of calcium nitrate as intermediate substance</p> <p>Section 2.1 describes emissions into the environment that might take place during the formulation of preparations (ERC 2), industrial use of processing aids in processes and products, not becoming part of articles (ERC 4), industrial use resulting in inclusion into or onto a matrix (ERC 5), industrial use resulting in manufacture of another substance (use of intermediates) (ERC 6a), industrial use of reactive processing aids (ERC 6b), industrial use of process regulators for polymerisation process in production of resins, rubbers, polymers (ERC 6d) and the industrial use of substances in closed systems (ERC 7)</p> <p>As this substance does fulfil criteria for classification as hazardous to the environment, the environmental risk assessment has not been carried out for this substance and therefore the conditions that affect the environment are not included during this use.</p>																		
2.2	Contributing scenario (2) controlling exposure of workers that corresponds to the industrial use of calcium nitrate for formulating preparations, as intermediate substance and end use by workers in industrial facilities	<p>All the relevant processes for this scenario identified by the PROC codes in point 1 of this scenario (PROC 1/2/3/4/5/7/8a/8b/9/10/13/14/15) have the same operating conditions and risk management measures for personnel. Consequently they are all covered by just one contributing scenario (2).</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Product characteristics</td> <td>Solid with low dust formation index Liquid Substance concentration > 25%</td> </tr> <tr> <td>Quantities used</td> <td>Not relevant</td> </tr> <tr> <td>Frequency and duration of use or exposure</td> <td>> 4 hours a day</td> </tr> <tr> <td>Human factors not influenced by risk management</td> <td>Not relevant</td> </tr> <tr> <td>Other operational conditions that have an impact on worker exposure</td> <td>Used in enclosed spaces</td> </tr> <tr> <td>Technical conditions and measures at process level (source) to prevent release</td> <td>Not relevant</td> </tr> <tr> <td>Technical conditions and measures for controlling dispersion of the source to workers</td> <td>1.- Adequate containment of the substance 2.- Good ventilation conditions</td> </tr> <tr> <td>Organisational measures to prevent or limit releases, dispersion and exposure</td> <td>Not relevant</td> </tr> <tr> <td>Conditions and measures for personal protection, hygiene and health evaluation</td> <td>Use safety glasses</td> </tr> </table>	Product characteristics	Solid with low dust formation index Liquid Substance concentration > 25%	Quantities used	Not relevant	Frequency and duration of use or exposure	> 4 hours a day	Human factors not influenced by risk management	Not relevant	Other operational conditions that have an impact on worker exposure	Used in enclosed spaces	Technical conditions and measures at process level (source) to prevent release	Not relevant	Technical conditions and measures for controlling dispersion of the source to workers	1.- Adequate containment of the substance 2.- Good ventilation conditions	Organisational measures to prevent or limit releases, dispersion and exposure	Not relevant	Conditions and measures for personal protection, hygiene and health evaluation	Use safety glasses
Product characteristics	Solid with low dust formation index Liquid Substance concentration > 25%																			
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Other operational conditions that have an impact on worker exposure	Used in enclosed spaces																			
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Technical conditions and measures for controlling dispersion of the source to workers	1.- Adequate containment of the substance 2.- Good ventilation conditions																			
Organisational measures to prevent or limit releases, dispersion and exposure	Not relevant																			
Conditions and measures for personal protection, hygiene and health evaluation	Use safety glasses																			
3	Estimation of exposure and reference to its source	<p>Information for contributing scenario 1 (environmental exposure):</p> <p>No environmental assessment was completed because the substance does not fulfil criteria for classification as hazardous for the environment and therefore there is no additional assessment of environmental exposure.</p> <p>Information for contributing scenario 2 (exposure for personnel):</p> <p>A qualitative assessment has been included that concludes that this use is safe for workers. The main toxicological effect of this substance is eye irritation (local parameter), for which a DNEL value cannot be estimated, because there is no dose-response information available. Although this substance is toxic orally, this route of exposure is not relevant for this scenario, it is not considered probable and therefore a value for oral exposure was not estimated. The substance did not show systemic effects in studies on repeated doses (chronic), made with doses that are so high that the workers are not going to be exposed to them (see relevant DNEL: section 8 FDS), it was also considered unnecessary to carry out an assessment of quantitative risks.</p>																		
4	Guidance for intermediate users to assess if they working within the limits set by the ES	Additional risk management measures apart from the ones mentioned above in the contributing scenarios (2.1, 2.2) are not required to guarantee safety during this use and thus work within the limits of the ES 2 exposure scenario.																		
5	Good practice advice in addition to that included in the Chemical Safety Assessment (CSA) required by REACH. Measures not subject to art. 37 (4) REACH	<ul style="list-style-type: none"> - Adequate containment of the substance - Minimise the number of exposed personnel - Segregate the releasing processes - Utilise effective contamination extraction systems - Good ventilation conditions 																		

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- Minimise manual handling

- Avoid contact with contaminated objects and instruments
- Regularly clean the work area and equipment
- Supervise the area to check that risk management measures are being applied
- Train personnel for good practices
- Keep standard personal hygiene conditions

Calcium Nitrate Solution

Safety Data Sheet Appendices Exposure Scenario 3

1	Title of Exposure Scenario (ES)	Professional use of calcium nitrate for formulation of preparations and end use by professionals
2	Description of activities or processes covered by the exposure scenario	<p>List of all the use descriptors related to ES 3</p> <p>SU 22 * PC4/12/14/16/20/21/35/37 * PROC1/2/5/8a/8b/9/10/13/15/20 ERC8a/8b/8c/8d/8e/9a/9b</p> <p>Names of contributing scenario/s related to the environment and their corresponding Environmental Release Class (ERC)</p> <p>1. Wide dispersive indoor use of processing aids in open systems (ERC 8a) 2. Wide dispersive indoor use of reactive substances in open systems (ERC 8b) 3. Wide dispersive indoor use resulting in inclusion into or onto a matrix (ERC 8c) 4. Wide dispersive outdoor use of processing aids in open systems (ERC 8d) 5. Wide dispersive outdoor use of reactive substances in open systems (ERC 8e) 6. Wide dispersive indoor use of substances in closed systems (ERC 9a) 7. Wide dispersive outdoor use of substances in closed systems (ERC 9b)</p> <p>Names of contributing scenario/s for the worker and their corresponding Process Category (PROC)</p> <p>1. Use in enclosed processes, no likelihood of exposure (PROC 1) 2. Use in closed, continuous processes with occasional controlled exposure (PROC 2) 3. Mixing or blending in batch processes (multistage and/or significant contact) (PROC 5) 4. Transfer of substances or preparations (charging/discharging) from/to vessels/large containers at non-dedicated facilities (PROC 8a) 5. Transfer of substances or preparations (charging/discharging) from/to vessels/large containers at dedicated facilities (PROC 8b) 6. Transfer of substances or preparations into small containers (dedicated filling line, including weighing) (PROC 9) 7. Roller application or brushing (PROC 10) 8. Treatment of articles by dipping and pouring (PROC 13) 9. Use as laboratory reagent (PROC 15) 10. Heat and pressure transfer fluids (closed systems) in dispersive use (PROC 20)</p> <p>* Agency Guidance Document, Chapter R.12: Use descriptor systems: SU 22 (Professional uses: Public domain (administration, education, entertainment, services, craftsmen)) PC 4 (Anti-freeze and de-icing products) / PC 12 (Fertilizers) / PC 14 (Metal surface treatment products, including galvanic and electroplating products) / PC 16 (Heat transfer fluids) / PC 20 (Products such as ph-regulators, flocculants, precipitants, neutralisation agents, other unspecified) / PC 21 (Laboratory chemicals) / PC 35 (Washing and cleaning products (including solvent based products) / PC 37 (Water treatment chemicals) / PC 39 (Cosmetics, personal care).</p>
2.1	Contributing scenario (1) controlling environmental exposure for use of calcium nitrate by professionals (ES3)	<p>Environmental exposure due to use of calcium nitrate by professionals</p> <p>Section 2.1 describes emissions into the environment that might take place during the wide dispersive use of reactive substances in open systems (ERC 8a), wide dispersive indoor use of reactive systems in open systems (ERC 8b), wide dispersive indoor use resulting in inclusion into or onto a matrix (ERC 8c), wide dispersive outdoor use of processing aids in open systems (ERC 8d), wide dispersive use of reactive substances in open systems (ERC 8e), wide dispersive indoor use of substances in closed systems (ERC 9a) and wide dispersive outdoor use of substances in closed systems (ERC 9b).</p> <p>As this substance does fulfil criteria for classification as hazardous to the environment, the environmental risk assessment has not been carried out for this substance and therefore the conditions that affect the environment are not included during this use.</p>
2.2	Contributing scenario (2) controlling worker exposure for professional use of calcium nitrate for formulating preparations and end use.	<p>All the relevant processes for this scenario identified by the PROC codes in point 1 of this scenario (PROC 1/2/5/8a/8b/9/10/13/15/20) have the same operating conditions and risk management measures for personnel. Consequently they are all covered by just one contributing scenario (2).</p>
	Product characteristics	Solid with low dust formation index Liquid Substance concentration > 25%
	Quantities used	Not relevant
	Frequency and duration of use or exposure	> 4 hours a day
	Human factors not influenced by risk management	Not relevant
	Other operational conditions that have an impact on worker exposure	Used indoors and outdoors
	Technical conditions and measures at process level (source) to prevent release	Not relevant
	Technical conditions and measures for controlling dispersion of the source to workers	1.- Adequate containment of the substance 2.- Good ventilation conditions 3- Avoid splashing. Use specific dispensers and pumps designed especially to prevent splashes/leaks/exposure
	Organisational measures to prevent or limit releases, dispersion and exposure	Not relevant
	Conditions and measures for personal protection, hygiene and health evaluation	Use safety glasses
3	Estimation of exposure and reference to its source	<p>Information for contributing scenario 1 (environmental exposure):</p> <p>No environmental assessment was completed because the substance does not fulfil criteria for classification as hazardous for the environment and therefore there is no additional assessment of environmental exposure.</p> <p>Information for contributing scenario 2 (exposure for personnel):</p> <p>A qualitative assessment has been included that concludes that this use is safe for workers.</p> <p>The main toxicological effect of this substance is eye irritation (local parameter), for which a DNEL value cannot be estimated, because there is no dose-response information available. Although this substance is toxic orally, this route of exposure is not relevant for this scenario, it is not considered probable and therefore a value for oral exposure was not estimated. The substance did not show systemic effects in studies on repeated doses (chronic), made with doses that are so high that that the workers are not going to be exposed to them (see relevant DNEL: section 8 FDS), it was also considered unnecessary to carry out an assessment of quantitative risks.</p>
4	Guidance for intermediate users to assess if they working within the limits set by the ES	<p>Additional risk management measures apart from the ones mentioned above in the contributing scenarios (2.1, 2.2) are not required to guarantee safety during this use and thus work within the limits of the ES 3 exposure scenario.</p>
5	Good practice advice in addition to that included in the Chemical Safety Assessment (CSA) required by REACH. Measures not subject to art. 37 (4) REACH	<ul style="list-style-type: none"> - Adequate containment of the substance - Minimise the number of exposed personnel - Segregate the releasing processes - Utilise effective contamination extraction systems - Good ventilation conditions - Minimise manual handling - Avoid contact with contaminated objects and instruments - Regularly clean the work area and equipment - Supervise the area to check that risk management measures are being applied - Train personnel for good practices - Keep standard personal hygiene conditions

Calcium Nitrate Solution

Safety Data Sheet Appendices Exposure Scenario 4

1	Title of Exposure Scenario (ES)														
	End use by consumers of fertilisers and other products														
2	Description of activities or processes covered by the exposure scenario														
	<p>List of all the use descriptors related to ES 4</p> <p>SU 21 * PC4/12/35/39 ERC8a/8b/8d/8e/10a</p> <p>Name/s of contributing scenario/s related to the environment and their corresponding Environmental Release Class (ERC)</p> <p>1. Wide dispersive indoor use of processing aids in open systems (ERC 8a) 2. Wide dispersive indoor use of reactive substances in open systems (ERC 8b) 3. Wide dispersive outdoor use of processing aids in open systems (ERC 8d) 4. Wide dispersive outdoor use of reactive substances in open systems (ERC 8e) 5. Wide dispersive use of long-life articles and materials with low release (ERC 10a)</p> <p>Name(s) of contributing scenarios for the worker and their corresponding Chemical Product Category (PC)</p> <p>1. Anti-freeze and de-icing products (PC 4) 2. Fertilizers (PC 12) 3. Washing and cleaning products (PC 35) 4. Cosmetics, personal care (PC 39)</p> <p>* Agency Guidance Document, Chapter R.12: Use descriptor systems: SU 21 (Uses by consumers: Private households (= general public = consumers))</p>														
2.1	Contributing scenario (1) controlling environmental exposure for end use by consumers of fertilisers and other products (ES4)														
	<p>Environmental exposure due to use by consumers of calcium nitrate contained in fertilizers and other products.</p> <p>Section 2.1 describes emissions into the environment that might take place during wide dispersive indoor use of processing aids in open systems (ERC 8a), wide dispersive indoor use of reactive substances in open systems (ERC 8b), wide dispersive outdoor use of processing aids in open systems (ERC 8d), wide dispersive outdoor use of reactive substances in open systems (ERC 8e) and wide dispersive use of long-life articles and materials with low release (ERC 10a).</p> <p>As this substance does fulfil criteria for classification as hazardous to the environment, the environmental risk assessment has not been carried out for this substance and therefore the conditions that affect the environment are not included during this use.</p>														
2.2	Contributing scenario (2) controlling consumer exposure for use of fertilizers, matches and fireworks														
	<p>All the relevant chemical product categories for this scenario identified by the PC codes in point 1 of this scenario (PC 4/12/35/39) have the same operating conditions and risk management measures for personnel. Consequently they are all covered by just one contributing scenario (2).</p> <p>Eye exposure can take place while using solutions of fertilizers, anti-freeze and de-icing products, and washing and cleaning products. Consumer exposure to calcium nitrate in cosmetic products is covered by the Directive concerning cosmetics: 76/768/EC.</p>														
	<table border="1"> <tr> <td>Product characteristics</td> <td>Solid with low dust formation index Liquid Products containing calcium nitrate in concentrations of ≥ 10 and < 25 % Products containing calcium nitrate in concentrations of < 10 %</td> </tr> <tr> <td>Quantities used</td> <td>Not relevant</td> </tr> <tr> <td>Frequency and duration of use or exposure</td> <td>Not relevant</td> </tr> <tr> <td>Human factors not influenced by risk management</td> <td>Not relevant</td> </tr> <tr> <td>Other operational conditions that have an impact on worker exposure</td> <td>Used indoors and outdoors</td> </tr> <tr> <td>Conditions and measures with information and recommendations for consumer conduct</td> <td>Avoid splashes</td> </tr> <tr> <td>Conditions and measures for personal protection and hygiene</td> <td>1.- If concentration is ≥ 10%, use safety glasses 2.- If concentration is < 10%, no personal protection is necessary 3.- Indicate safe recommendations of use for consumers on the product labels</td> </tr> </table>	Product characteristics	Solid with low dust formation index Liquid Products containing calcium nitrate in concentrations of ≥ 10 and < 25 % Products containing calcium nitrate in concentrations of < 10 %	Quantities used	Not relevant	Frequency and duration of use or exposure	Not relevant	Human factors not influenced by risk management	Not relevant	Other operational conditions that have an impact on worker exposure	Used indoors and outdoors	Conditions and measures with information and recommendations for consumer conduct	Avoid splashes	Conditions and measures for personal protection and hygiene	1.- If concentration is ≥ 10 %, use safety glasses 2.- If concentration is < 10 %, no personal protection is necessary 3.- Indicate safe recommendations of use for consumers on the product labels
Product characteristics	Solid with low dust formation index Liquid Products containing calcium nitrate in concentrations of ≥ 10 and < 25 % Products containing calcium nitrate in concentrations of < 10 %														
Quantities used	Not relevant														
Frequency and duration of use or exposure	Not relevant														
Human factors not influenced by risk management	Not relevant														
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Conditions and measures with information and recommendations for consumer conduct	Avoid splashes														
Conditions and measures for personal protection and hygiene	1.- If concentration is ≥ 10 %, use safety glasses 2.- If concentration is < 10 %, no personal protection is necessary 3.- Indicate safe recommendations of use for consumers on the product labels														
3	Estimation of exposure and reference to its source														
	<p>Information for contributing scenario 1 (environmental exposure):</p> <p>No environmental assessment was completed because the substance does not fulfil criteria for classification as hazardous for the environment and therefore there is no additional assessment of environmental exposure.</p> <p>Information for contributing scenario 2 (exposure for personnel):</p> <p>A qualitative assessment has been included that concludes that this use is safe for consumers.</p> <p>The main toxicological effect of this substance is eye irritation (local parameter), for which a DNEL value cannot be estimated, because there is no dose-response information available. Although this substance is toxic orally, this route of exposure is not relevant for this scenario, it is not considered probable and therefore a value for oral exposure was not estimated. The substance did not show systemic effects in studies on repeated doses (chronic), made with doses that are so high that that the workers are not going to be exposed to them (see relevant DNEL: section 8 FDS), it was also considered unnecessary to carry out an assessment of quantitative risks.</p>														
4	Guidance for intermediate users to assess if they working within the limits set by the ES														
	<p>Additional risk management measures apart from the ones mentioned above in the contributory scenarios (2.1, 2.2) are not required to guarantee safety during the use of fertilizers, anti-freeze and de-icing products, and washing and cleaning products:</p> <p>If concentration of calcium nitrate is ≥ 10%, use safety glasses If concentration is < 10%, no personal protection is necessary</p>														