

Safety Data Sheet

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



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Edition: 1


Revision date: 25.04.2024

Revision: 2

Double calcium ammonium nitrate salt

SECTION 1		Identification of the substance/mixture and of the company/undertaking
1.1		Product identifier
	Trade name	Nitrato de Calcio, Soluteck-Nitrato de cálcio Rega; Nitrato de cálcio Técnico; Nitrogal; Fertibersol; Technical Calcium Nitrate; Horticultural/Agricultural Grade
	Synonyms	Nitric acid, ammonium and calcium salt (Nitric acid, ammonium calcium salt)
	Code	DS-007
	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	01-2119493947-16-0003
	UFI	JF60-90JH-U00K-FN2A
1.2		Relevant identified uses of the substance or mixture and uses advised against
	Application of the substance / the mixture	Use by professionals: - Professional use of the substance as a fertilizer. - Professional use: mixing of the substance on site for the production of cement and concrete curing agent in the manufacture of refractory bricks and as a hardener in asphalt coatings for construction. - Professional use: handling and use of the chemical in wastewater flow. - Professional use of the substance as a heat transfer fluid. - Professional use in soil remediation. Consumer use: - Use of the substance as fertilizer. Use by workers in industrial environments: - Production of the substance, including handling, storage and quality control.

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	Application of the substance / the mixture	<p>Distribution, storage and quality control. Industrial context.</p> <ul style="list-style-type: none"> - Industrial use for the manufacture of cement and concrete curing agent for refractory bricks. Hardener in asphalt layers for construction. - Industrial use: use in wastewater treatment for septicity control, odor elimination, corrosion inhibition. - Industrial use: production of latex-based printing inks. - Use as an intermediate agent or chemical agent for the synthesis of other substances or articles. - Industrial use in the production of antibiotics, in the cultivation of bacteria and as a main source for the synthesis of high purity calcium products. - Industrial use for the recycling of plastic materials. - Industrial use, to rinse coated metals as part of the curing process to improve coating performance. - For industrial use of the substance as a heat transfer fluid.
	Uses advised against	Others than those indicated.
1.3	Details of the supplier of the safety data sheet	<p>ADP Fertilizantes, S.A. Avenida Termo de Lisboa, 24-30, Salgados da Póvoa Apartado 88 2616-907 ALVERCA DO RIBATEJO PORTUGAL (00351) 210 300 400 e-mail: fdsinfo@grupofertiberia.com</p>
1.4	Emergency telephone number	<p>ADP - Fertilizantes, S.A Alverca +351 210 300 400 (Only available during office hours; Monday-Friday; 09:00-18:00) GREECE:Poison control Centre: (0030) 2107793777 ITALY: Istituto Superiore di Sanità (ISS) +390649906140val</p>
SECTION 2 Hazards identification		
2.1	Classification of the substance or mixture according Regulation (EC) n° 1272/2008 (CLP)	<p>Acute Tox. 4 H302 Harmful if swallowed Eye Dam. 1 H318 Causes serious eye damage.</p>
2.2	Label elements	
	Hazard pictograms	
	Signal word	Danger
	Hazard-determining components of labelling	Nitric acid, ammonium and calcium salt
	Hazard statements	<p>H302 Harmful if swallowed H318 Causes serious eye damage.</p>

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	Precautionary statements	<p>P102 Keep out of reach of children. P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves/protective clothing/eye keep comfortable for breathing. 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 present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER/doctor. P501 Dispose of contents/container in accordance with local/regional/national/international regulations..</p>
	Additional information	Acquisition, possession or use by private individuals is subject to notification.
	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.
	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.
	Determination of endocrine disrupting properties	None substance listed.

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SECTION 3 Composition/information on ingredients		
3.1	Substances	
	Name	EC Number
	Nitric acid, ammonium and calcium salt	239-289-5
		CAS Number
		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 lukewarm 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.
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,

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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.
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.	

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SECTION 6	Accidental release measures
6.1	Personal precautions, protective equipment and emergency procedures
	<p>To avoid projections of toxic liquid by overflowing from both containers and tanks during loading or unloading operations, the following spill prevention measures shall be adopted:</p> <p>(a) In receptacles: The protection system on receptacles shall depend on the type of installation; so as to ensure that there is no overfilling of receptacles by means of two independent safety features; e.g. level indicators and independent high level alarm. The shut-off valve may be either automatic or manually operated.</p> <p>In port installations, constant observation of the container level by an operator connected by radiotelephone or other effective means of communication with the operator of the shut-off valve is permitted.</p> <p>(b) In tanks: The provisions laid down in the Royal Decree on the loading/unloading of dangerous goods shall be taken into account. When open-mouth loading is carried out, a diving tube shall be used to the bottom of the tank.</p> <p>(c) In hoses and loading arms: Dripping at the ends of the hoses and loading arms shall be avoided. If it does occur, it shall be adequately collected.</p>
	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.

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SECTION 7 Handling and storage									
7.1	Precautions for safe handling								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Technical precautionary measures</td> <td>Wear appropriate personal protective equipment. 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 food areas. 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.</td> </tr> <tr> <td>Advice on general occupational hygiene</td> <td>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.</td> </tr> </table>	Technical precautionary measures	Wear appropriate personal protective equipment. 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 food areas. 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.	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.				
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7.2	Conditions for safe storage, including any incompatibilities								
	Keep only in the original container. Keep container tightly closed. Store in a cool, well-ventilated place, away from heat, direct sunlight and incompatible substances.								
7.3	Specific end use(s)								
	Use only as described in section 1.2.								
SECTION 8 Exposure controls/personal protection									
8.1	Control parameters								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Occupational exposure limits</td> <td>There is no limit of occupational exposure value.</td> </tr> <tr> <td>Recommended monitoring procedures</td> <td>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.</td> </tr> <tr> <td>Derived effect levels</td> <td>No DELs available.</td> </tr> <tr> <td>Predicted effect concentrations</td> <td>No PECs available.</td> </tr> </table>	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.
Occupational exposure limits	There is no limit of occupational exposure value.								
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Derived effect levels	No DELs available.								
Predicted effect concentrations	No PECs available.								

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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
Industrial/Professional worker	Inhalation (mg/m³)	Long-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.
		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

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Consumer	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)
	Inhalation (mg/m3)	Long-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.
		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	

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			Long-term	Systemic	Not available	
				Local	Not available	
		Ocular (mg/kg pc/day)	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	
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		<p>As a general rule, access shall be prohibited to unauthorised personnel. The prohibition shall be posted on a clearly visible and legible sign.</p> <p>Ventilation. Storerooms and loading and unloading or transfer facilities shall be designed with natural or forced ventilation so that the risk of exposure of workers is adequately controlled. For this purpose, the design shall take special account of the characteristics of the vapours to which they may be exposed and of the source of the emissions, their collection at source and their possible transmission to the environment of the storage or installation.</p> <p>Where they are located inside buildings, ventilation shall be channelled to a safe place outside through dedicated ducts, taking into account the permissible emission levels to the atmosphere. Where forced ventilation is used, it shall be provided with an alarm system in case of failure.</p> <p>Premises with pits or basements where vapours may accumulate shall have adequate forced ventilation in such pits or basements to prevent the accumulation of vapours.</p>			

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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.
	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.
	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
	Other	Use personal protective equipment during use and handling of the product.
	Eye/face protection	Use personal protective equipment during use and handling of the product.
	Thermal hazards	Not available.
	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

Physical state	Solid
Colour	White
Odour	Inodore
Melting point/freezing point	> 400°C
Initial boiling point and boiling range	Indeterminated
Flammability	Non-flammable
Upper/lower flammability or explosive limits	
Lower	Not applicable due to physico-chemical characteristics.
Upper	Not applicable due to physico-chemical characteristics.

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	Flash point	Not applicable due to physico-chemical characteristics.
	Auto-ignition temperature	Not available.
	Decomposition temperature	Not determined.
	pH	5-7 (10%)
	Viscosity	
	Kinematic	Not available.
	Dynamic	Not available.
	Solubility	
	In water	100g/100 mL a 20°C
	Partition coefficient: n-octanol/water	Not applicable due to physico-chemical characteristics
	Vapour pressure	Not available.
	Density and/or relative density	2.05 kg/m ³
	Relative vapour density	Not applicable due to physico-chemical characteristics.
	Particle characteristics	Not applicable due to physico-chemical characteristics.
9.2	Other information	
	Appearance	Solid
	Explosives properties	The product is not explosive.
	Oxidizing properties	Not applicable due to physico-chemical characteristics.
	Information with regard to physical hazard	
	Explosives	Not applicable due to physico-chemical characteristics.
	Flammable gases	Not applicable due to physico-chemical characteristics.
	Aerosols	Not applicable due to physico-chemical characteristics.
	Oxidising gases	Not applicable due to physico-chemical characteristics.
	Gases under pressure	Not applicable due to physico-chemical characteristics.
	Flammable liquids	Not applicable due to physico-chemical characteristics.
	Flammable solids	Not applicable due to physico-chemical characteristics.

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	Pyrophobic liquids	Not applicable due to physico-chemical characteristics.
	Pyrophobic solids	Not applicable due to physico-chemical characteristics.
	Self-reactive substances and mixtures	Not applicable due to physico-chemical characteristics.
	Substances and mixtures, which emit	Not applicable due to physico-chemical characteristics.
	Oxidising liquids	Not applicable due to physico-chemical characteristics.
	Oxidizing solids	Not applicable due to physico-chemical characteristics.
	Organic peroxides	Not applicable due to physico-chemical characteristics.
	Corrosive to metals	Not applicable due to physico-chemical characteristics.
	Desensitised explosives	Not applicable due to physico-chemical characteristics.
	Other safety characteristics	
	Mechanical sensitivity	Not applicable due to physico-chemical characteristics.
	Self-accelerating polymerisation	Not applicable due to physico-chemical characteristics.
	Formation of explosible dust/air mixtures	Not applicable due to physico-chemical characteristics.
	Acid/alkaline reserve	Not applicable due to physico-chemical characteristics.
	Evaporation rate	Not applicable due to physico-chemical characteristics.
	Miscibility	Not applicable due to physico-chemical characteristics.
	Conductivity	Not applicable due to physico-chemical characteristics.
	Corrosiveness	Not applicable due to physico-chemical characteristics.
	Gas group	Not applicable due to physico-chemical characteristics.
	Redox potential	Not applicable due to physico-chemical characteristics.
	Radical formation potential	Not applicable due to physico-chemical characteristics.
	Photocatalytic properties	Not applicable due to physico-chemical characteristics.
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	When strongly heated, it decomposes releasing toxic vapors.
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.

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10.6	Hazardous decomposition products	Nitrogen oxides (NO _x) (in case of fire).
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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	DL50: 300 mg/kg bw. DL50 > 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.					
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.					

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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 Chromosomal 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/m ³
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
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.					

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11.2	Information on other hazards					
	Endocrine disruptive properties					
	None substance 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	CL50(48h): 447 mg/l	Scientifically not necessary	CE50(48h) > 100 mg/l
			Long term	Not available	CE50(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	CE50(3h) > 1000 mg/l CE10/NOEC: 180 mg/l			
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		

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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				
	Not applicable.				
12.7	Other adverse effects				
	Significative effects or critical risks are not known.				
SECTION 13 Disposal considerations					
13.1	Waste treatment methods				
	Methods of disposal	<p>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.</p>			
	Hazardous waste code	<p>HP4: Irritant - skin irritation and eye damage HP6: Acute toxicity</p>			

Double calcium ammonium nitrate salt

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	Maritime transport in bulk according to IMO instruments	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.			
	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.			
	Named dangerous substances - ANNEX VI (CLP)	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	None substance listed.			

Double calcium ammonium nitrate salt

	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 (EC) No 111/2005 laying down rules for the monitoring and trade in drug	None substance listed.
	Regulation (UE) 2019/1009	This product complies with the Fertilizer 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.	None substance listed.
	Regulation (EC) No 649/2012 concerning the export and import of dangerous chemicals.	None substance listed.
	PBT/mPmB Evaluation	None substance listed.
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 (UK REACH). PNEC: Predicted No-Effect Concentration (UK REACH).
	Data compared to the previous version altered	Correction of errors in the sections 13, 14 and 15. New data on the SDS supplier. Modification of exposure scenarios and PNEC.
	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).

Double calcium ammonium nitrate salt

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.

Double calcium ammonium nitrate salt

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%]

Double calcium ammonium nitrate salt

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						

Double calcium ammonium nitrate salt

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%

Double calcium ammonium nitrate salt

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.

Double calcium ammonium nitrate salt

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
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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

Double calcium ammonium nitrate salt

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	

Double calcium ammonium nitrate salt

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)

Double calcium ammonium nitrate salt

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.

Double calcium ammonium nitrate salt

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

Double calcium ammonium nitrate salt

- 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
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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
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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)

Double calcium ammonium nitrate salt

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	-

Double calcium ammonium nitrate salt

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.

Double calcium ammonium nitrate salt

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
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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

- 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

Double calcium ammonium nitrate salt

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
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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
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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

Double calcium ammonium nitrate salt

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)

Double calcium ammonium nitrate salt

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.

Double calcium ammonium nitrate salt

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

Double calcium ammonium nitrate salt

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	-

Double calcium ammonium nitrate salt

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.

Double calcium ammonium nitrate salt

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 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)

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

Double calcium ammonium nitrate salt

- 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	-

Double calcium ammonium nitrate salt

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.

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