

# Safety Data Sheet

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



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Revision: 1

## Ammonium nitrate-urea solution (32% N)

SECTION 1		Identification of the substance/mixture and of the company/undertaking
1.1		<b>Product identifier</b>
	Trade name	Ammonium Nitrate Solution - Urea
	Synonym	Nitrogen solution 32% N
	Code	FDS-012
	Chemical name	-
	Chemical formula	-
	Index Number	Not applicable.
	EINECS Number	Not applicable
	CAS Number	Not applicable.
	Registration Number	It is a mixture and therefore has no registration number.
	UFI	TQ00-X0T7-J00Q-3K1N
1.2		<b>Relevant identified uses of the substance or mixture and uses advised against</b>
	Application of the substance / the mixture	Fertilizer Manufacture of mixtures
	Uses advised against	Others than those indicated.
1.3	<b>Details of the supplier of the safety data sheet</b>	Fertiberia, S.A. 27, Agustín de Foxa Street pta. 11 28036 Madrid Madrid (Spain) +34 91.586.62.00; fdsinfo@grupofertiberia.com
1.4	<b>Emergency telephone number</b>	Aviles Factory: +34 985.57.78.50 (Only available during office hours; Monday-Friday; 09:00-18:00)
SECTION 2		Hazards identification
2.1	<b>Classification of the substance or mixture according Regulation (EC) n° 1272/2008 (CLP)</b>	GHS07 Eye Irrit. 2 H319 Causes serious eye irritation.

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2.2	Label elements	
	<b>Hazard pictograms</b>	
	<b>Signal word</b>	Warning
	<b>Hazard-determining components of labelling</b>	Not applicable.
	<b>Hazard statements</b>	H319 Causes serious eye irritation.
	<b>Precautionary statements</b>	P102 Keep out of reach of children. P270 Do not eat, drink or smoke when using this product. P264 Wash thoroughly after handling. P280 Wear eye protection / face protection. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 If eye irritation persists: Get medical advice/attention. P501 Dispose of contents/container to ...
	<b>Additional information</b>	Acquisition, possession or use by private individuals is subject to restrictions.
	<b>Supplemental information on the label</b>	Not applicable.
	<b>Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures</b>	Not applicable.
	<b>Special packaging requirements</b>	Not applicable.
	<b>Containers to be fitted with child-resistant fastenings</b>	Not applicable.
	<b>Tactile hazard warning</b>	Not applicable.

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<b>2.3</b>	<b>Other hazards</b>					
	<b>Other hazards which do not result in classification</b>	None known.				
	<b>Results of the PBT and vPvB assessment</b>	Not applicable. Not applicable.				
<b>SECTION 3</b>		<b>Composition/information on ingredients</b>				
<b>3.1</b>	<b>Substances</b>					
		Not applicable.				
<b>3.2</b>	<b>Mixtures</b>					
	<b>Name</b>	<b>CE number</b>	<b>CAS number</b>	<b>Registration number</b>	<b>%(P/P)</b>	<b>Classification Regulation CE N° 1272/2008</b>
	Ammonium nitrate	229-347-8	6484-52-2	01-2119490981-27-XXXX	45,60%	Ox. Sol. 3 H272; Eye Irrit. 2 H319
	<b>Additional indications</b>	For the wording of the listed hazard phrases refer to section 16.				
<b>SECTION 4</b>		<b>First aid measures</b>				
<b>4.1</b>	<b>Description of first aid measures</b>					
	<b>General information</b>	Provide medical assistance to those affected. People who dispense first aid are advised to wear personal protective equipment. There may be delayed effects on exposure.				
	<b>Inhalation</b>	Remove from exposure. In severe cases, or if recovery is not rapid or complete, seek medical attention.				
	<b>Ingestion</b>	Wash out mouth with water. Move exposed person to fresh air. Keep person warm and at rest. If material has been ingested and the exposed person is conscious, give small amounts of water to drink. Stop if the exposed person feels unwell, as vomiting may be dangerous. Do not induce vomiting unless instructed to do so by medical personnel. If vomiting occurs, keep the head down so that vomit does not enter the lungs. Get medical attention if symptoms occur. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Keep airway open. Loosen tight clothing, such as collar, tie, belt or waistband.				
	<b>Skin contact</b>	Rinse with plenty of water. Remove contaminated clothing and wash before reuse. If irritation persists, seek medical attention.				

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	<b>Eye contact</b>	Flush eyes with water for at least 15 minutes. Avoid the affected rub or close the eyes. In the case of the injured person uses contact lenses, they should be removed when they are not stuck in the eyes, otherwise further damage may occur. In all cases, after washing, seek medical advise as quickly as possible with the SDS of the product.
<b>4.2</b>	<b>Most important symptoms and effects, both acute and delayed</b>	
	<b>Eye contact</b>	Causes eye irritation. This irritation may cause redness and swelling of the eyes.
	<b>Inhalation</b>	No known significant effects or critical hazards.
	<b>Skin contact</b>	Skin irritation and skin sensitisation.
	<b>Ingestion</b>	For ammonium salts in general: symptoms of local irritation, nausea, vomiting, diarrhoea. Systemic effect: after ingestion of very large quantities: drop in blood pressure, collapse, CNS disorders, spasms, narcotic states, respiratory paralysis, haemolysis. Gastrointestinal disturbances, blood disorders, methaemoglobinaemia with headache, cardiac arrhythmia, drop in blood pressure, dyspnoea and spasms, key symptom: cyanosis (blue colour of blood).
<b>4.3</b>	<b>Indication of any immediate medical attention and special treatment needed</b>	
	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:	
	<b>Notes to physician</b>	Treat symptomatically.
	<b>Specific treatments</b>	There is no specific treatment. It depends on specialized medical observation.
<b>SECTION 5</b>	<b>Firefighting measures</b>	
<b>5.1</b>	<b>Extinguishing media</b>	
	The product is not flammable.	
	<b>Suitable extinguishing agents</b>	Fire-extinguishing powder Dry sand
	<b>Unsuitable extinguishing agents for safety reasons</b>	None.
<b>5.2</b>	<b>Special hazards arising from the substance or mixture</b>	
	Formation of toxic gases is possible during heating or in case of fire.	
	<b>Hazardous thermal decomposition products</b>	Nitrogen oxides, nitrous gases, ammonia.

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<b>5.3</b>	<b>Advice for firefighters</b>
	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.
<b>SECTION 6</b>	<b>Accidental release measures</b>
<b>6.1</b>	<b>Personal precautions, protective equipment and emergency procedures</b>
	Wear protective clothing.
	<b>For non-emergency personnel</b>
	Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing. In case of non-flammable spills and leaks, wear vapor protective clothing. Stop leak if you can do so without risk. Keep unnecessary persons away, isolate the danger area and prevent entry. Eliminate sources of combustion. Keep upwind, out of low areas and ventilate confined spaces before entering. Assess the affected area to determine if evacuation is necessary. If it is necessary to evacuate the danger zone, you should follow the advice of an expert. If sheltering in place, tape windows and doors, close outside air intakes (attic fans, etc.) and place a damp towel or cloth over your face (if necessary).
	<b>For emergency responders</b>
	Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
<b>6.2</b>	<b>Environmental precautions</b>
	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).
<b>6.3</b>	<b>Methods and material for containment and cleaning up</b>
	In case of accidental spills and leaks, avoid dispersal of spilled material. Use water spray or foam to control vapors. Make a protective barrier and ensure closure of drains with suitable containment material. Absorb with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep and shovel into suitable containers for disposal.
<b>6.4</b>	<b>Reference to other sections</b>
	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							
<b>7.1</b>	<b>Precautions for safe handling</b>						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"><b>Technical precautionary measures</b></td> <td>Wear appropriate personal protective equipment. Avoid contact with eyes, skin or clothing. Do not breathe vapors or mist. Do not ingest. Avoid release to the environment. Keep in original container or approved alternative made of a compatible material, kept tightly closed when not in use. Empty containers retain product residues and may be hazardous. Do not reuse container. Avoid handling incompatible substances, see section 7.2. and 10.</td> </tr> <tr> <td><b>Advice on general occupational hygiene</b></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>	<b>Technical precautionary measures</b>	Wear appropriate personal protective equipment. Avoid contact with eyes, skin or clothing. Do not breathe vapors or mist. Do not ingest. Avoid release to the environment. Keep in original container or approved alternative made of a compatible material, kept tightly closed when not in use. Empty containers retain product residues and may be hazardous. Do not reuse container. Avoid handling incompatible substances, see section 7.2. and 10.	<b>Advice on general occupational hygiene</b>	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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<b>7.2</b>	<b>Conditions for safe storage, including any incompatibilities</b>						
	<p>In the storage area, ensure that strict standards of order and cleanliness are observed.</p> <p>Locate tanks or containers away from incompatible substances. Keep tanks or containers at room temperature. Locate tanks and containers in well-ventilated areas.</p> <p>Recommended and not recommended packaging materials: Suitable materials for tanks and containers are stainless steel, reinforced polyester or carbon steel internally protected with an anti-corrosion resin or similar. Protect tanks and containers from corrosion and physical damage. A corrosion inhibitor is incorporated in the product.</p>						
<b>7.3</b>	<b>Specific end use(s)</b>						
	Use only as described in section 1.2.						
SECTION 8 Exposure controls/personal protection							
<b>8.1</b>	<b>Control parameters</b>						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"><b>Occupational exposure limits</b></td> <td>There is no limit of occupational exposure value.</td> </tr> <tr> <td><b>Recommended monitoring procedures</b></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><b>Derived effect levels</b></td> <td>No DELs available.</td> </tr> </table>	<b>Occupational exposure limits</b>	There is no limit of occupational exposure value.	<b>Recommended monitoring procedures</b>	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.	<b>Derived effect levels</b>	No DELs available.
<b>Occupational exposure limits</b>	There is no limit of occupational exposure value.						
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<b>Derived effect levels</b>	No DELs available.						

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<b>Predicted effect concentrations</b>		No PECs available.		
<b>Ingredients with limit values that require monitoring at the workplace</b>		The product does not contain relevant quantities of substances with limit values that require monitoring at the workplace.		
<b>DNEL</b>				
<b>Substance</b>				6484-52-2
				Ammonium nitrate
<b>Industrial/Professional worker</b>	<b>Inhalation (mg/m3)</b>	<b>Long-term</b>	<b>Systemic</b>	36 mg/m3
			<b>Local</b>	No hazard has been identified
		<b>Short-term</b>	<b>Systemic</b>	Hazards are unknown but no further information is needed as no exposure to the substance is expected to occur
			<b>Local</b>	Hazards are unknown but no further information is needed as no exposure to the substance is expected to occur
	<b>Dermal (mg/kg pc/día)</b>	<b>Long-term</b>	<b>Systemic</b>	5,12 mg/kg bw/d
			<b>Local</b>	No hazard has been identified
		<b>Short-term</b>	<b>Systemic</b>	No hazard has been identified
			<b>Local</b>	No hazard has been identified
	<b>Ocular (mg/kg pc/día)</b>	<b>Long-term</b>	<b>Systemic</b>	Low risk (no threshold was derived)
			<b>Local</b>	Low risk (no threshold was derived)
		<b>Short-term</b>	<b>Systemic</b>	Low risk (no threshold was derived)
			<b>Local</b>	Low risk (no threshold was derived)
	<b>Inhalation (mg/m3)</b>	<b>Long-term</b>	<b>Systemic</b>	8,9 mg/m3
			<b>Local</b>	No hazard has been identified
		<b>Short-term</b>	<b>Systemic</b>	No hazard has been identified
			<b>Local</b>	No hazard has been identified

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<b>Consumer</b>	<b>Dermal (mg/kg pc/day)</b>	<b>Long-term</b>	<b>Systemic</b>	2,56 mg/kg bw/d
			<b>Local</b>	No hazard has been identified
		<b>Short-term</b>	<b>Systemic</b>	No hazard has been identified
			<b>Local</b>	No hazard has been identified
	<b>Oral (mg/kg pc/day)</b>	<b>Long-term</b>	<b>Systemic</b>	2,56 mg/kg bw/d
			<b>Local</b>	No hazard has been identified
		<b>Short-term</b>	<b>Systemic</b>	No hazard has been identified
			<b>Local</b>	No hazard has been identified
	<b>Ocular (mg/kg pc/day)</b>	<b>Long-term</b>	<b>Systemic</b>	Not available
			<b>Local</b>	Not available
		<b>Short-term</b>	<b>Systemic</b>	Low risk (no threshold was derived)
			<b>Local</b>	Low risk (no threshold was derived)
<b>PNEC</b>				
<b>Substance</b>				6484-52-2
				Ammonium nitrate
<b>Fresh water (mg/L)</b>				No hazard has been identified
<b>Salt water (mg/L)</b>				No hazard has been identified
<b>STP (mg/L)</b>				18 mg/L
<b>Fresh water sediment (mg/L)</b>				No hazard has been identified
<b>Salt water sediment (mg/L)</b>				No hazard has been identified
<b>Air (mg/L)</b>				No hazard has been identified
<b>Soil (mg/L)</b>				No hazard has been identified
<b>Predators (secondary poisoning) (mg/L)</b>				The substance has no bioaccumulation potential
<b>Components with biological limit values</b>		Non-existent.		
<b>Additional indications</b>		The Occupational exposure limits lists valid during the making were used as basis.		
<b>8.2</b>	<b>Exposure controls</b>			
	<b>Appropriate engineering controls</b>	<ul style="list-style-type: none"> <li>- Ensure adequate ventilation.</li> <li>- Apply technical measures to comply with professional exposure limits.</li> <li>- Consult the protective measures listed in sections 7 and 8.</li> </ul>		



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	<b>Personal protective measures, such as personal protective equipment</b>	<b>General protection and hygiene measures</b>	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.
		<b>Respiratory protection</b>	Required when dusts are generated. Recommended Filter type: Filter P2 for solid and liquid particles of harmful substances.
		<b>Hand protection</b>	Wear suitable gloves (e.g. rubber or PVC) when handling the product for long periods of time.
		<b>Glove material</b>	Rubber gloves PVC gloves
		<b>Other</b>	Use personal protective equipment during use and handling of the product.
		<b>Eye/face protection</b>	Safety eyewear complying with an approved standard EN 166:2002 should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, use the following protection, unless the assessment indicates a higher degree of protection: safety glasses with side shields. Recommended: Eyewear, mask or other protection that covers the entire face must be used if there is a possibility of being exposed to aerosols or splashes, or if hot material is handled.
		<b>Thermal hazards</b>	Not applicable due to physico-chemical characteristics.
	<b>Environmental exposure controls</b>	General ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.	
<b>SECTION 9</b>	<b>Physical and chemical properties</b>		
<b>9.1</b>	<b>Information on basic physical and chemical properties</b>		
	<b>Appearance</b>	Liquid	
	<b>Colour</b>	Green	
	<b>Odour</b>	Odourless	
	<b>Odour threshold</b>	Not available.	
	<b>pH</b>	7-8	
	<b>Melting point/freezing</b>	Not available.	
	<b>Initial boiling point and boiling range</b>	Not available.	
	<b>Flash point</b>	Not applicable due to physico-chemical characteristics.	
	<b>Evaporation rate</b>	Not available	
	<b>Flammability</b>	Non-flammable	
	<b>Upper/lower flammability or explosive limits</b>		
	<b>Lower</b>	Not available.	
	<b>Upper</b>	Not available.	
	<b>Vapour pressure</b>	Not applicable due to physico-chemical characteristics.	

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	<b>Vapour density</b>	Not available.
	<b>Relative density</b>	at 20 ° C 1.32
	<b>Solubility</b>	
	<b>In water</b>	Fully miscible.
	<b>Partition coefficient: n-octanol/water</b>	Not applicable due to physico-chemical characteristics.
	<b>Auto-ignition</b>	Not available.
	<b>Decomposition</b>	Not determined.
	<b>Viscosity</b>	
	<b>Kinematic</b>	Not available
	<b>Dynamic</b>	Not available
	<b>Explosive properties</b>	The product is not explosive
	<b>Oxidising properties</b>	Not available
<b>9.2</b>	<b>Other information</b>	
	<b>Appearance</b>	Liquid.
	<b>Explosives properties</b>	Not explosive.
	<b>Oxidizing properties</b>	Not available
	<b>Information with regard to physical hazard classes</b>	
	<b>Explosives</b>	Not applicable due to physico-chemical properties
	<b>Flammable gases</b>	Not applicable due to physico-chemical properties
	<b>Aerosols</b>	Not applicable due to physico-chemical properties
	<b>Oxidising gases</b>	Not applicable due to physico-chemical properties
	<b>Gases under pressure</b>	Not applicable due to physico-chemical properties
	<b>Flammable liquids</b>	Not applicable due to physico-chemical properties
	<b>Flammable solids</b>	Not applicable due to physico-chemical properties
	<b>Self-reactive substances and mixtures</b>	Not applicable due to physico-chemical properties
	<b>Substances and mixtures, which emit flammable gases in contact with water</b>	Not applicable due to physico-chemical properties
	<b>Oxidising liquids</b>	Not applicable due to physico-chemical properties
	<b>Oxidizing solids</b>	Not applicable due to physico-chemical properties
	<b>Organic peroxides</b>	Not applicable due to physico-chemical properties
	<b>Corrosive to metals</b>	Not applicable due to physico-chemical properties
	<b>Desensitized explosives</b>	Not applicable due to physico-chemical properties

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	<b>Other safety characteristics</b>					
	<b>Mechanical sensitivity</b>	Not applicable due to physico-chemical properties				
	<b>Self-accelerating polymerisation temperature</b>	Not applicable due to physico-chemical properties				
	<b>Formation of explosible dust/air mixtures</b>	Not applicable due to physico-chemical properties				
	<b>Acid/alkaline reserve</b>	Not applicable due to physico-chemical properties				
	<b>Evaporation rate</b>	Not available				
	<b>Miscibility</b>	Not available				
	<b>Conductivity</b>	Not applicable due to physico-chemical properties				
	<b>Corrosiveness</b>	Not applicable due to physico-chemical properties				
	<b>Gas group</b>	Not applicable due to physico-chemical properties				
	<b>Redox potential</b>	Not applicable due to physico-chemical properties				
	<b>Radical formation potential</b>	Not applicable due to physico-chemical properties				
	<b>Photocatalytic properties</b>	Not applicable due to physico-chemical properties				
<b>SECTION 10 Stability and reactivity</b>						
<b>10.1</b>	<b>Reactivity</b>	Stable under recommended storage conditions.				
<b>10.2</b>	<b>Chemical stability</b>	Chemically stable under the indicated storage, handling and use conditions.				
<b>10.3</b>	<b>Possibility of hazardous reactions</b>	When heated above 170°C it decomposes giving off Nox, Ammonia and SO <sub>2</sub> . Contamination with incompatible materials.				
<b>10.4</b>	<b>Conditions to avoid</b>	Strong heating (decomposition).				
<b>10.5</b>	<b>Incompatible materials</b>	Metals, Mild steel. Reducing agents, powdered metals, strong acids, strong oxidizing agents.				
<b>10.6</b>	<b>Hazardous decomposition products</b>	Hazardous decomposition products formed under fire conditions. - Nitrogen oxides (NO <sub>x</sub> ), ammonia and SO <sub>2</sub> .				
<b>SECTION 11 Toxicological information</b>						
<b>11.1</b>	<b>Information on toxicological effects</b>					
	<b>Acute toxicity</b>					
	<b>Component</b>	<b>CAS number</b>	<b>Method</b>	<b>Species</b>	<b>Route</b>	<b>Result</b>
	Ammonium nitrate	6484-52-2	Not specified	Rat Mouse	Oral Subcutaneous Intravenous	DL50 = 14,3-15 g/kg bw (Rat) 11,5-13 g/kg bw (Mouse) DL50 = 8,2-9,4 g/kg bw (Rat) 9,2-10,7 g/kg bw (Mouse) DL50 = 5,3-5,4 g/kg bw (Rat) 4,6-5,2 g/kg bw (Mouse)
	Based on available data, the classification criteria are not met.					
	<b>Skin corrosion/irritation</b>					
	<b>Component</b>	<b>CAS number</b>	<b>Method</b>	<b>Species</b>	<b>Route</b>	<b>Result</b>
	Ammonium nitrate	6484-52-2	OECD 404	Rabbit	Cutaneous	Non irritant
	Based on available data, the classification criteria are not met.					

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### Serious eye damage/irritation

Component	CAS number	Method	Species	Route	Result
Ammonium nitrate	6484-52-2	OECD 405	Rabbit	Ocular	Slightly irritant

Causes serious eye irritation.

### Respiratory or skin sensitisation

Component	CAS number	Method	Species	Route	Result
Ammonium nitrate	6484-52-2	-	-	-	There are no available studies

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

### Germ cell mutagenicity

Component	CAS number	Method	Species	Result
Ammonium nitrate	6484-52-2	OECD 473 OECD 476	Bacteria Cromosomal 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
Ammonium nitrate	6484-52-2	NCI - screening tests	Rat Mouse	Oral	There is no evidence that the substance is carcinogenic.

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

### Reproductive toxicity

Component	CAS number	Method	Species	Route	Result
Ammonium nitrate	6484-52-2	Not specified	Rat	Oral	Data conclusive but not sufficient for classification. -Effects on fertility : There are no effects on fertility . -Toxicity for the development: NOAEL > 1000 mg urea/kg bw/d. Exposure to urea is highly unlikely to have negative developmental effects.

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

### STOT- single exposure

Component	CAS number	Method	Species	Route	Result
Ammonium nitrate	6484-52-2	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
Ammonium nitrate	6484-52-2	Not specified	Rat Mouse	Oral	NOAEL: 2250 mg/kg bw/d (Rat) NOAEL: 6750 mg/kg bw/d (Mouse) It is concluded that urea has a very low chronic toxicity.

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

## Ammonium nitrate-urea solution (32% N)

Aspiration hazard					
Component	CAS number	Result			
Ammonium nitrate	6484-52-2	No significant effects or critical hazards are known..			
Based on available data, the classification criteria are not met.					
<b>11.2</b>	<b>Information on other hazards</b>				
<b>Endocrine disruptive properties</b>					
None of the components are listed.					
<b>Other information</b>					
Not available					
<b>SECTION 12</b>	<b>Ecological information</b>				
<b>12.1</b>	<b>Toxicity</b>				
<b>Aquatic toxicity</b>					
Component	N° CAS		Fish	Crustacea	Algae
	6484-52-2	Short term	CL50 (48h): 447 mg/L (Cyrpinus	Not necessary	CE50 (48h): 490 mg/L
		Long term	CE50 (7d): 555 mg/L	CE50: 1700 mg/l	NOEC/CE10: 1700 mg/L
<b>Terrestrial toxicity</b>					
Component	N° CAS	Macro-organism	Micro-organism	Terrestrial plants	Other organisms
Ammonium nitrate	6484-52-2	Not available	Not available	Not available	-
<b>Microbiological activity in wastewater treatment plants</b>					
Component	N° CAS	Toxicity to aquatic micro-organisms			
Ammonium nitrate	6484-52-2	CE50: 1000 mg/l CE10/NOEC: 180 mg/l			
<b>12.2</b>	<b>Persistence and degradability</b>				
Component	N° CAS	Degradation			
Ammonium nitrate	6484-52-2	<b>Hydrolysis</b>		Hydrolysis is not seen. It is not necessary.	
		<b>Photolysis</b>		Not necessary	
		<b>Biodegradation</b>		Not necessary	
<b>12.3</b>	<b>Bioaccumulative potential</b>				
Component	N° CAS	Octanol-water partition coefficient (K <sub>ow</sub> )	Bioaccumulation factor (BEC)	Observations	
Ammonium nitrate	6484-52-2	Not applicable. Inorganic substance.	-	-	
<b>12.4</b>	<b>Mobility in soil</b>				
Component	N° CAS	Result			
Ammonium nitrate	6484-52-2	Being an inorganic substance it has a low adsorption potential.			
<b>12.5</b>	<b>Results of PBT and vPvB assessment</b>				
Not applicable.					

## Ammonium nitrate-urea solution (32% N)

<b>12.6</b>	<b>Endocrine disrupting properties</b>				
	The product doesn't contain any endocrine disrupting substance.				
<b>12.7</b>	<b>Other adverse effects</b>				
	Significative effects or critcs risks are not known.				
<b>SECTION 13</b>	<b>Disposal considerations</b>				
<b>13.1</b>	<b>Waste treatment methods</b>				
	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	HP4: Irritant - skin irritation and eye damage			
<b>SECTION 14</b>	<b>Transport information</b>				
	Regulatory information	ADR/RID	ADNR	IMDG	IATA
<b>14.1</b>	UN number	-			
<b>14.2</b>	UN proper shipping name	-			-
<b>14.3</b>	Transport hazard class(es)				
	Class	-		-	
	Label	Not applicable		Not applicable	
<b>14.4</b>	Packing group	-			
<b>14.5</b>	Environmental hazards	Product not classified as hazardous to the aquatic environment.			
<b>14.6</b>	Special precautions for user	Not defined. See the relevant information, such as handling, in other sections of this document.			
<b>14.7</b>	Maritime transport in bulk according to IMO instruments	Not applicable.			

## Ammonium nitrate-urea solution (32% N)

SECTION 15	Regulatory information	
15.1	<b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	
	<b>Regulation (EC) No 1907/2006 (REACH)</b>	This product complies with the REACH Regulation.
	<b>Named dangerous substances - ANNEX VI (CLP)</b>	None substance listed.
	<b>SEVESO Category</b>	Not applicable.
	<del>Quantifying quantity (tonnes) for the application of lower-tier requirements</del>	Not applicable.
	<del>Quantifying quantity (tonnes) for the application of upper-tier requirements</del>	Not applicable.
	<b>Regulation (EC) No 1907/2006 - ANNEX XVII</b>	Not applicable.
	<b>REGULATION (EU) 2019/1148</b>	
	<b>Annex I - Restricted Explosives Precursors (Upper limit value for licensing purposes under Article 5(3))</b>	CAS: 6484-52-2 ammonium nitrate: Limit Value: >45,7 %, Licensing isn't allowed (25-50%)
	<b>Annex II - Reportable Explosives Precursors</b>	None substance listed.
	<b>Regulation (EC) No 273/2004 on Drug Precursors</b>	None substance listed.
	<b>Regulation (EU) No. 2009/1009</b>	This product complies with the Fertilizer's Regulation.
	<b>Regulation (EC) No. 1272/2008 (CLP)</b>	This product complies with the CLP Regulation.
	<b>Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.</b>	Not applicable.
	<b>Regulation (EC) No 649/2012 concerning the export and import of dangerous chemicals.</b>	Not applicable.
	<b>Regulation (EC) No 111/2005 laying down rules for the monitoring of and trade in drug precursors between the Community and third countries.</b>	None substance listed.
	<b>PBT/mPmB Evaluation</b>	Not applicable.
15.2	<b>Chemical safety assessment</b>	
	A chemical safety assessment has not been carried out since this is a mixture (exempt from registration).	

## Ammonium nitrate-urea solution (32% N)

SECTION 16	Other information	
	<b>Relevant phrases</b>	H272 May intensify fire; oxidiser. H319 Causes serious eye irritation.
	<b>Abbreviations and acronyms</b>	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. NOAEL: No observed adverse effect level.. IMDG: International Maritime Code for Dangerous Goods. IATA: International Air Transport Association. GHS: Globally Harmonised System of Classification and Labelling of Chemicals. CAS: Chemical Abstracts Service (division of the American Chemical Society). DNEL: Derived No-Effect Level (REACH). PNEC: Predicted No-Effect Concentration (REACH).
	<b>Data compared to the previous version altered</b>	Correction of errors in sections 13 and 15. Changes in concentration ranges in section 3.
	<b>References</b>	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: ( <a href="http://echa.europa.eu/">http://echa.europa.eu/</a> ). - Guidance for the compilation of safety data sheets for fertilizer materials ( <a href="http://www.fertilizerseurope.com">www.fertilizerseurope.com</a> ).
	<b>Methods used for the classification of the mixture (Article 9 of Regulation (EC) No 1272/2008)</b>	Classification and Labeling in accordance with the principle of extrapolation of Regulation No. 1272/2008 (CLP).
	<b>Advice on any training appropriate for workers to ensure protection of human health and the environment</b>	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.



## Ammonium nitrate-urea solution (32% N)

### Exposure Scenarios



### Ammonium Nitrate

**ES 1:** Formulation - Formulation of chemicals and fertilizers

#### 1. Title section

ES name: *Formulation - Formulation of chemicals and fertilizers*

#### Environment

Formulation of chemicals and fertilizers	ERC 2; ERC 3
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#### Worker

Use in closed, continuous process with occasional controlled exposure	PROC 2
Use in closed batch process (synthesis or formulation)	PROC 3
Use in batch and other process (synthesis) where opportunity for exposure arises	PROC 4
Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)	PROC 5
Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities	PROC 8a
Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	PROC 8b
Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	PROC 9
Treatment of articles by dipping and pouring	PROC 13
Production of preparations or articles by tableting, compression, extrusion, palletisation	PROC 14
Use as laboratory reagent	PROC 15

#### 2. Conditions of use affecting exposure

##### 2.1. Control of environmental exposure

Exposure assessment and risk characterization are not required for environment, in accordance with the ECHA Guidance on information requirements and chemical safety assessment, Part B: Hazard assessment, Version 2.1, December 2011

##### 2.2. Control of worker exposure

## Ammonium nitrate-urea solution (32% N)

PROCs	2	3	4	5	8a/8b	9	13	14	15
<b>Product (Article) characteristics</b>									
Concentration of substance in mixture:	≤ 100% (solid)								
Concentration of substance (used for exposure estimates):	Substance as such								
Dustiness of material:	Low								
<b>Amount used (or contained in articles), frequency and duration of use/exposure</b>									
Duration of activity:	< 8 hours								
<b>Technical and organisational conditions and measures</b>									
General ventilation:	Basic general ventilation (1-3 air changes per hour)								
Local exhaust ventilation:	no [Effectiveness Inhal: 0%]								
Containment:	Closed continuous process with occasional controlled exposure	Closed batch process with occasional controlled exposure	Semi-closed process with occasional controlled exposure	No					
Occupational Health and Safety Management System:	Advanced								
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>									
General:	Work under a high standard of personal hygiene. Wash hands and face before breaks. When using the product, do not eat, drink or smoke.								
Dermal Protection:	Yes (long sleeved overall; chemically resistant gloves conforming to EN374 with basic employee training) [Effectiveness Dermal: 90%]								

## Ammonium nitrate-urea solution (32% N)

Respiratory Protection:	No [Effectiveness Inhal: 0%]					
Eye Protection:	Yes (chemical goggles)					
<b>Other conditions affecting workers exposure</b>						
Place of use:	Indoor					
Skin surface potentially exposed:	Two hands face (480 cm <sup>2</sup> )	One hand face only (240 cm <sup>2</sup> )	Two hands face (480 cm <sup>2</sup> )	Two hands (960 cm <sup>2</sup> )	Two hands face (480 cm <sup>2</sup> )	One hand face only (240 cm <sup>2</sup> )
Method	TRA Worker 3.0					

### 3. Exposure estimation and reference to its source

#### 3.1. Environmental release and exposure

Exposure assessment and risk characterization are not required for environment, in accordance with the ECHA Guidance on information requirements and chemical safety assessment, Part B: Hazard assessment, Version 2.1, December 2011

#### 3.2. Worker exposure

PROCs	2	3	4	5	8a/8b	9	13	14	15
<b>Route of exposure and type of effects</b>									
Inhalation, systemic, long term (mg/m <sup>3</sup> )	0,010	0,100	0,500	0,500	0,100	0,100	0,100	0,100	0,100
Dermal, systemic, long term (mg/kg bw/day)	0,137	0,069	0,686	1,371	1,371	0,686	1,371	0,343	0,034
Dermal, local, long-term	-	-	-	-	-	-	-	-	-
Eye, local	-	-	-	-	-	-	-	-	-
Combined routes, systemic, long-term	-	-	-	-	-	-	-	-	-
<b>RCR</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>8a/8b</b>	<b>9</b>	<b>13</b>	<b>14</b>	<b>15</b>
Inhalation, systemic, long term	< 0,01	<0,01	0,014	0,01	<0,01	<0,01	<0,01	<0,01	<0,01

## Ammonium nitrate-urea solution (32% N)

Dermal, systemic, long term	0,027	0,013	0,134	0,27	0,268	0,134	0,268	0,067	<0,01
Dermal, local, long-term	Qualitative (see below)								
Eye, local	Qualitative (see below)								
Combined routes, systemic, long-term	0,027	0,016	0,148	0,282	0,271	0,137	0,271	0,070	<0,01

### Conclusion on risk characterisation (qualitative)

#### Dermal, local, long-term

As a long sleeved overall and chemically resistant gloves are worn, the risk of causing local effects via long-term dermal exposure is considered to be controlled.

#### Eye, local

As eye protection is worn, the risk of causing ocular effects is considered to be controlled.

### 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.

## Ammonium nitrate-urea solution (32% N)

**ES 2:**

**Use at industrial site - Industrial use as intermediate incl. sampling, loading, filling, transfer, bagging, storage, quality control**

### 1. Title section

ES name: *Use at industrial site - Industrial use as intermediate incl. sampling, loading, filling, transfer, bagging, storage, quality control*

#### Environment

Industrial use as intermediate incl. sampling, loading, filling, transfer, bagging, storage, quality control	ERC 6a
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#### Worker

Use in closed process, no likelihood of exposure	PROC 1
Use in closed, continuous process with occasional controlled exposure	PROC 2
Use in closed batch process (synthesis or formulation)	PROC 3
Use in batch and other process (synthesis) where opportunity for exposure arises	PROC 4
Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)	PROC 5
Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities	PROC 8a
Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	PROC 8b
Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	PROC 9
Treatment of articles by dipping and pouring	PROC 13
Production of preparations or articles by tableting, compression, extrusion, palletisation	PROC 14
Use as laboratory reagent	PROC 15

### 2. Conditions of use affecting exposure

#### 2.1. Control of environmental exposure

Exposure assessment and risk characterization are not required for environment, in accordance with the ECHA Guidance on information requirements and chemical safety assessment, Part B: Hazard assessment, Version 2.1, December 2011

#### 2.2. Control of worker exposure

PROCs	1	2	3	4/9	5	8a	8b	13/14	15
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#### Product (Article) characteristics

Concentration of substance in mixture:	≤ 100% (solid)
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## Ammonium nitrate-urea solution (32% N)

Concentration of substance (used for exposure estimates):	Substance as such						
Dustiness of material:	Low						
<b>Amount used (or contained in articles), frequency and duration of use/exposure</b>							
Duration of activity:	< 8 hours						
<b>Technical and organisational conditions and measures</b>							
General ventilation:	Basic general ventilation (1-3 air changes per hour)						
Local exhaust ventilation:	no [Effectiveness Inhal: 0%]						
Containment:	Closed system (minimal contact during routine operations)	Closed continuous process with occasional controlled exposure	Closed batch process with occasional controlled exposure	Semi-closed process with occasional controlled exposure	No	Semi-closed process with occasional controlled exposure	No
Occupational Health and Safety Management System:	Advanced						
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>							
General:	Work under a high standard of personal hygiene. Wash hands and face before breaks. When using the product, do not eat, drink or smoke.						
Dermal Protection:	Yes (long sleeved overall; chemically resistant gloves conforming to EN374 with basic employee training) [Effectiveness Dermal: 90%]						
Respiratory Protection:	No [Effectiveness Inhal: 0%]						
Eye Protection:	Yes (chemical goggles)						
<b>Other conditions affecting workers exposure</b>							

## Ammonium nitrate-urea solution (32% N)

Place of use:	Indoor						
Skin surface potentially exposed:	One hand face only (240 cm <sup>2</sup> )	Two hands face (480 cm <sup>2</sup> )	One hand face only (240 cm <sup>2</sup> )	Two hands face (480 cm <sup>2</sup> )	Two hands (960 cm <sup>2</sup> )	Two hands face (480 cm <sup>2</sup> )	One hand face only (240 cm <sup>2</sup> )
Method	TRA Worker 3.0						

### 3. Exposure estimation and reference to its source

#### 3.1. Environmental release and exposure

Exposure assessment and risk characterization are not required for environment, in accordance with the ECHA Guidance on information requirements and chemical safety assessment, Part B: Hazard assessment, Version 2.1, December 2011

#### 3.2. Worker exposure

PROCs	1	2	3	4	5/8a	8a	9	13/14	15
<b>Route of exposure and type of effects</b>									
Inhalation, systemic, long term (mg/m <sup>3</sup> )	0,010	0,010	0,100	0,500	0,500	0,100	0,100	0,100	0,100
Dermal, systemic, long term (mg/kg bw/day)	0,003	0,137	0,069	0,686	1,371	1,371	0,686	1,371 0,343	0,034
Dermal, local, long-term	-	-	-	-	-	-	-	-	-
Eye, local	-	-	-	-	-	-	-	-	-
Combined routes, systemic, long-term	-	-	-	-	-	-	-	-	-
<b>RCR</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4/9</b>	<b>5</b>	<b>8b</b>	<b>9</b>	<b>13/14</b>	<b>15</b>
Inhalation, systemic, long term	< 0,01	< 0,01	<0,01	0,01	0,014	<0,01	<0,01	<0,01	<0,01
Dermal, systemic, long term	< 0,01	0,027	0,013	0,13	0,268	0,268	0,134	0,268 0,067	<0,01
Dermal, local, long-term	Qualitative (see below)								
Eye, local	Qualitative (see below)								
Combined routes, systemic, long-term	< 0,01	0,027	0,016	0,148	0,282	0,282	0,137	0,271 0,07	<0,01

## Ammonium nitrate-urea solution (32% N)

### Conclusion on risk characterisation (qualitative)

#### Dermal, local, long-term

As a long sleeved overall and chemically resistant gloves are worn, the risk of causing local effects via long-term dermal exposure is considered to be controlled.

#### Eye, local

As eye protection is worn, the risk of causing ocular effects is considered to be controlled.

### 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.



## Ammonium nitrate-urea solution (32% N)

**ES 3:**

**Use at industrial site - Industrial use as reactive processing aid incl. sampling, loading, filling, transfer, bagging, storage, quality control**

### 1. Title section

ES name: *Use at industrial site - Industrial use as reactive processing aid incl. sampling, loading, filling, transfer, bagging, storage, quality control*

#### Environment

Industrial use as reactive processing aid incl. sampling, loading, filling, transfer, bagging, storage, quality control	ERC 6b
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#### Worker

Use in closed process, no likelihood of exposure	PROC 1
Use in closed, continuous process with occasional controlled exposure	PROC 2
Use in closed batch process (synthesis or formulation)	PROC 3
Use in batch and other process (synthesis) where opportunity for exposure arises	PROC 4
Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)	PROC 5
Industrial spraying	PROC 7
Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities	PROC 8a
Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	PROC 8b
Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	PROC 9
Roller application or brushing	PROC 10
Treatment of articles by dipping and pouring	PROC 13
Use as laboratory reagent	PROC 15

### 2. Conditions of use affecting exposure

#### 2.1. Control of environmental exposure

Exposure assessment and risk characterization are not required for environment, in accordance with the ECHA Guidance on information requirements and chemical safety assessment, Part B: Hazard assessment, Version 2.1, December 2011

#### 2.2. Control of worker exposure

PROCs	1	2	3	4/9	5/13	8a/10	8b	7	15

#### Product (Article) characteristics

## Ammonium nitrate-urea solution (32% N)

Concentration of substance in mixture:	≤ 100% (solid)						
Concentration of substance (used for exposure estimates):	Substance as such						
Dustiness of material:	Low						
<b>Amount used (or contained in articles), frequency and duration of use/exposure</b>							
Duration of activity:	< 8 hours						
<b>Technical and organisational conditions and measures</b>							
General ventilation:	Basic general ventilation (1-3 air changes per hour)						
Local exhaust ventilation:	no [Effectiveness Inhal: 0%]						
Containment:	Closed system (minimal contact during routine operations)	Closed continuous process with occasional controlled exposure	Closed batch process with occasional controlled exposure	Semi-closed process with occasional controlled exposure	No	Semi-closed process with occasional controlled exposure	No
Occupational Health and Safety Management System:	Advanced						
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>							
General:	Work under a high standard of personal hygiene. Wash hands and face before breaks. When using the product, do not eat, drink or smoke.						
Dermal Protection:	Yes (long sleeved overall; chemically resistant gloves conforming to EN374 with basic employee training) [Effectiveness Dermal: 90%]						
Respiratory Protection:	No [Effectiveness Inhal: 0%]						
Eye Protection:	Yes (chemical goggles)						
<b>Other conditions affecting workers exposure</b>							

## Ammonium nitrate-urea solution (32% N)

Place of use:	Indoor						
Skin surface potentially exposed:	One hand face only (240 cm <sup>2</sup> )	Two hands face (480 cm <sup>2</sup> )	One hand face only (240 cm <sup>2</sup> )	Two hands face (480 cm <sup>2</sup> )	Two hands (960 cm <sup>2</sup> )	Two hands and upper wrists (1500 cm <sup>2</sup> )	One hand face only (240 cm <sup>2</sup> )
Method	TRA Worker 3.0						

### 3. Exposure estimation and reference to its source

#### 3.1. Environmental release and exposure

Exposure assessment and risk characterization are not required for environment, in accordance with the ECHA Guidance on information requirements and chemical safety assessment, Part B: Hazard assessment, Version 2.1, December 2011

#### 3.2. Worker exposure

PROCs	1	2	3	4	5/8a/10	7	8b/13	9	15
<b>Route of exposure and type of effects</b>									
Inhalation, systemic, long term (mg/m <sup>3</sup> )	0,010	0,010	0,100	0,500	0,500	1,000	0,100	0,100	0,100
Dermal, systemic, long term (mg/kg bw/day)	0,003	0,137	0,069	0,686	1,371	4,286	1,371	0,686	0,034
Dermal, local, long-term	-	-	-	-	-	-	-	-	-
Eye, local	-	-	-	-	-	-	-	-	-
Combined routes, systemic, long-term	-	-	-	-	-	-	-	-	-
<b>RCR</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5/8a/10</b>	<b>7</b>	<b>8b/13</b>	<b>9</b>	<b>15</b>
Inhalation, systemic, long term	< 0,01	< 0,01	<0,01	0,01	0,014	0,028	<0,01	<0,01	<0,01
Dermal, systemic, long term	< 0,01	0,027	0,013	0,13	0,268	0,837	0,268	0,134	<0,01
Dermal, local, long-term	Qualitative (see below)								
Eye, local	Qualitative (see below)								

## Ammonium nitrate-urea solution (32% N)

Combined routes, systemic, long-term	< 0,01	0,027	0,016	0,148	0,282	0,865	0,271	0,137	<0,01
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### Conclusion on risk characterisation (qualitative)

#### Dermal, local, long-term

As a long sleeved overall and chemically resistant gloves are worn, the risk of causing local effects via long-term dermal exposure is considered to be controlled.

#### Eye, local

As eye protection is worn, the risk of causing ocular effects is considered to be controlled.

### 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.

## Ammonium nitrate-urea solution (32% N)

**ES 4:**

**Use by professional worker - Use by professional worker (outdoor and indoor of reactive substances in open systems)**

### 1. Title section

ES name: *Use by professional worker - Use by professional worker (outdoor and indoor of reactive substances in open systems)*

#### Environment

Use by professional worker (outdoor and indoor of reactive substances in open systems)	ERC 8e; ERC8b
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#### Worker

Use in closed process, no likelihood of exposure	PROC 1
Use in closed, continuous process with occasional controlled exposure	PROC 2
Use in closed batch process (synthesis or formulation)	PROC 3
Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)	PROC 5
Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities	PROC 8a
Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	PROC 8b
Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	PROC 9
Non industrial spraying	PROC 11
Use as laboratory reagent	PROC 15
Hand-mixing with intimate contact and only PPE available	PROC 19

### 2. Conditions of use affecting exposure

#### 2.1. Control of environmental exposure

Exposure assessment and risk characterization are not required for environment, in accordance with the ECHA Guidance on information requirements and chemical safety assessment, Part B: Hazard assessment, Version 2.1, December 2011

#### 2.2. Control of worker exposure

PROCs	1	2	3	5	8a	8b	9	11	15	19

#### Product (Article) characteristics

Concentration of substance in mixture:	≤ 100% (solid)
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## Ammonium nitrate-urea solution (32% N)

Concentration of substance (used for exposure estimates):	Substance as such					
Dustiness of material:	Low					
<b>Amount used (or contained in articles), frequency and duration of use/exposure</b>						
Duration of activity:	< 8 hours					
<b>Technical and organisational conditions and measures</b>						
General ventilation:	Basic general ventilation (1-3 air changes per hour)					
Local exhaust ventilation:	no [Effectiveness Inhal: 0%]					
Containment:	Closed system (minimal contact during routine operations)	Closed continuous process with occasional controlled exposure	Closed batch process with occasional controlled exposure	No	Semi-closed process with occasional controlled exposure	No
Occupational Health and Safety Management System:	Advanced					
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>						
General:	Work under a high standard of personal hygiene. Wash hands and face before breaks. When using the product, do not eat, drink or smoke.					
Dermal Protection:	Yes (long sleeved overall; chemically resistant gloves conforming to EN374 with basic employee training) [Effectiveness Dermal: 90%]					
Respiratory Protection:	No [Effectiveness Inhal: 0%]					

## Ammonium nitrate-urea solution (32% N)

Eye Protection:	Yes (chemical goggles)								
<b>Other conditions affecting workers exposure</b>									
Place of use:	Indoor								
Skin surface potentially exposed:	One hand face only (240 cm <sup>2</sup> )	Two hands face (480 cm <sup>2</sup> )	One hand face only (240 cm <sup>2</sup> )	Two hands face (480 cm <sup>2</sup> )	Two hands (960 cm <sup>2</sup> )	Two hands face (480 cm <sup>2</sup> )	Two hands and upper wrists (1500 cm <sup>2</sup> )	One hand face only (240 cm <sup>2</sup> )	Two hands and forearms (1980 cm <sup>2</sup> )
Method	TRA Worker 3.0								

### 3. Exposure estimation and reference to its source

#### 3.1. Environmental release and exposure

Exposure assessment and risk characterization are not required for environment, in accordance with the ECHA Guidance on information requirements and chemical safety assessment, Part B: Hazard assessment, Version 2.1, December 2011

#### 3.2. Worker exposure

PROCs	1	2	3	5	8a	8b	9	11	15	19
<b>Route of exposure and type of effects</b>										
Inhalation, systemic, long term (mg/m <sup>3</sup> )	0,010	0,010	0,100	1,000	0,500	0,500	0,500	1,000	0,100	0,100
Dermal, systemic, long term (mg/kg bw/day)	0,003	0,137	0,069	1,371	1,371	1,371	0,686	4,284	0,034	2,829
Dermal, local, long-term		-	-	-	-	-	-	-	-	-
Eye, local		-	-	-	-	-	-	-	-	-

## Ammonium nitrate-urea solution (32% N)

Combined routes, systemic, long-term	-	-	-	-	-	-	-	-	-	-
<b>RCR</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>8a</b>	<b>8b</b>	<b>9</b>	<b>11</b>	<b>15</b>	<b>19</b>
Inhalation, systemic, long term	< 0,01	< 0,01	<0,01	0,028	0,01	0,014	0,014	0,03	<0,01	<0,01
Dermal, systemic, long term	< 0,01	0,027	0,013	0,268	0,27	0,268	0,134	0,837	<0,01	0,552
Dermal, local, long-term	Qualitative (see below)									
Eye, local	Qualitative (see below)									
Combined routes, systemic, long-term	< 0,01	0,027	0,016	0,296	0,282	0,282	0,148	0,865	<0,01	0,555

### Conclusion on risk characterisation (qualitative)

#### Dermal, local, long-term

As a long sleeved overall and chemically resistant gloves are worn, the risk of causing local effects via long-term dermal exposure is considered to be controlled.

#### Eye, local

As eye protection is worn, the risk of causing ocular effects is considered to be controlled.



## Ammonium nitrate-urea solution (32% N)

### 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.

## Ammonium nitrate-urea solution (32% N)

**ES 5:**

**Consumer Use - Consumer Use (outdoor and indoor of reactive substances in open systems) as part of specialist products, pyrotechnics and/or matches, fertilizer**

### 1. Title section

ES name: *Consumer Use - Consumer Use (outdoor and indoor of reactive substances in open systems) as part of specialist products, pyrotechnics and/or matches, fertilizer*

#### Environment

Consumer Use (outdoor and indoor of reactive substances in open systems) as part of specialist products, pyrotechnics and/or matches, fertilizer	ERC 8e; ERC 8b
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#### Consumer

Consumer Use (outdoor and indoor of reactive substances in open systems) as part of specialist products, pyrotechnics and/or matches	PC 1
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Consumer Use (outdoor and indoor) as part of fertilizer	PC 12
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### 2. Conditions of use affecting exposure

#### 2.1. Control of environmental exposure

Exposure assessment and risk characterization are not required for environment, in accordance with the ECHA Guidance on information requirements and chemical safety assessment, Part B: Hazard assessment, Version 2.1, December 2011

#### 2.2. Control of consumer exposure

PCs	1	12
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#### Product (Article) characteristics

Concentration of substance in mixture:	0.3 g/g (default)	0.46 g/g (max. allowed)
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#### Measures related to information and behavioural advice to consumers including personal protection and hygiene

Adult/Child assumed:	Adult
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Use frequency:	Infrequent
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Eye Protection:	Chemical goggles or safety glasses with side shields (when the concentration of the substance is $\geq 10\%$ )
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## Ammonium nitrate-urea solution (32% N)

### Other conditions affecting consumers exposure

Instructions:	Product labelling, showing that the product causes serious eye irritation (when the concentration of the substance is $\geq 10\%$ )
Body parts potentially exposed:	Inside hands / one hand / palm of hands (428.8 cm <sup>2</sup> )
Dermal transfer factor:	1
Method	TRA Consumers 3.1

### 3. Exposure estimation and reference to its source

#### 3.1. Environmental release and exposure

Exposure assessment and risk characterization are not required for environment, in accordance with the ECHA Guidance on information requirements and chemical safety assessment, Part B: Hazard assessment, Version 2.1, December 2011

#### 3.2. Consumer exposure

<b>PCs</b>	<b>1</b>	<b>12</b>
<b>Route of exposure and type of effects</b>		
Dermal, systemic, long term (mg/kg bw/day)	0,858	1,315
Eye, local	-	-
Combined routes, systemic, long-term	-	-
<b>RCR</b>	<b>1</b>	<b>12</b>
Dermal, systemic, long term	0,335	0,514
Eye, local	Qualitative (see below)	
Combined routes, systemic, long-term	0,335	0,514

## Ammonium nitrate-urea solution (32% N)

### Conclusion on risk characterisation (qualitative)

#### Eye, local

As chemical goggles or safety glasses with side shields are worn (when the concentration of the substance is 10% or more), the risk of the substance for causing ocular effects is considered to be controlled.

### 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.