



# Safety Data Sheet

Conforms to REGULATION (EU) No. 453/2010

<b>Version:</b>	Revision B
<b>Issue date:</b>	20/06/2016

## GROUP 4

## NPK/NP/NK (< 70% AN)

### 1.0 Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product Identifier

<b>Product/Trade name</b>	Ammonium nitrate based compounds or blended fertilizers, NPK/NP/NK containing <70% ammonium nitrate). As indicated on packaging by PSDS Group 4 marking and nutrient inclusion.
<b>Common chemical name</b>	AN based NPK, compound/blended fertilizer, complex fertilizer, NP fertilizer, NK fertilizer
<b>Synonyms</b>	N/A Mixture
<b>Chemical formula</b>	N/A Mixture
<b>EU index number (Annex 1)</b>	N/A Mixture
<b>EC No</b>	N/A Mixture
<b>CAS No.</b>	N/A Mixture
<b>REACH Registration Number.</b>	N/A Mixture
<b>National Product Registration Number, where applicable</b>	N/A

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

<b>Use of the substance/mixture</b>	Fertilizer
<b>Uses advised against</b>	All non-agricultural fertilizer use.

#### 1.3 Details of the supplier of the safety data sheet

<b>Manufacturer/Importer/Supplier</b>	Manufacturer
	Company name: Origin Fertilisers (UK) Limited.
	Full address: 1-3 Freeman Court, Jarman Way, Royston, Hertfordshire, SG8 5HW.
	Tel: 01763 255500
<b>Email address of the person responsible for SDS</b>	Email address: andy.bell@originfertilisers.co.uk

#### 1.4 Emergency telephone number

	Tel; 01763 255500
	Out of hours; 07715 801875

### 2 Hazards identification

#### 2.1 Classification of the substance or mixture

<b>Classification in accordance with Regulation 1272/2008 (CLP)</b>	Non-hazardous.
<b>Hazard Statement(s)</b>	Not applicable
<b>Classification in accordance with Directive 67/548 (DSD)</b>	Not applicable
<b>Risk phrase(s)</b>	Not applicable

#### 2.2 Label elements

<b>Hazard pictogram(s)</b>	None.
<b>Signal word</b>	Not applicable
<b>Hazard Statement(s)</b>	None.

2.3	<b>Precautionary Statements</b>	<p>P210 Keep away from heat, sparks, open flames &amp; hot surfaces. — No smoking.</p> <p>P220 Keep/Store away from combustible materials &amp; chemicals.</p> <p>P280 Wear eye protection.</p> <p>P370+P378 In case of fire: Use copious quantities of water.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P337+P313 If eye irritation persists: Get medical attention.</p> <p>P221 Take any precautions to avoid mixing with combustibles/.</p> <p>P264 Wash hands thoroughly after handling.</p>
	<b>Other hazards</b>	
	<b>PBT/vPvB criteria</b>	According to Annex XIII of Regulation (EC) No 1907/2006, no PBT and vPvB assessment has been conducted since ammonium nitrate is inorganic.
	<b>Other hazards which do not result in classification</b>	
	<b>Physical and chemical hazards</b>	Fertilizers are basically harmless products when handled correctly. However, the following points should be noted for fire, heating and detonation: The fertilizer is not itself combustible but it can support combustion, even in the absence of air. On heating it melts and further heating can cause decomposition, releasing toxic fumes containing nitrogen oxides, ammonia and sulphur and other gases depending on composition. It has high resistance to detonation. Heating under strong confinement can lead to explosive behaviour.
	<b>Health hazards</b>	The fertilizers are basically harmless products when handled correctly. However, prolonged or repeated contact with skin may cause discomfort, ingestion of large quantities may give rise to gastro-intestinal disorders and inhalation of dust at high concentrations may cause irritation of the nose and upper respiratory tract with symptoms such as sore throat and coughing. There are no known long term effects.
	<b>Environmental hazards</b>	Heavy spillage of nitrate and phosphate may cause adverse environmental impact such as eutrophication in confined surface waters or nitrate contamination. See Section 12.

3 Composition/information on ingredients						
Mixture						
<b>Hazardous ingredients</b>						
Chemical name	CAS no.	EC no.	Generic REACH Reg No.)	Classification Regulation (EC) No. 1272/2008	Classification Directive 67/548/EEC	% (w/w)
Ammonium nitrate	6484-52-2	229-347-8	01-2119490981-27	Ox. Sol 3, H272	O; R8, Xi; R36	<70%
<b>Other ingredients</b>						
Calcium Carbonate and/or (*)	471-34-1	207-439-9				Variable
(*) Dolomite	16389-88-1	240-440-2				Variable
Di-ammonium phosphate	7783-28-0	231-987-8	01-2119490974-22-0014			Variable
Potassium Chloride	7447-40-7	231-211-8				Variable
Ammonium Sulphate	7783-20-2	231-984-1	01-2119455044-46			Variable
Limestone	1317-65-3	215-279-6				Variable
EC no. means EINECS or ELINCS number.						

<b>4.0 First aid measures</b>	
<b>4.1 Description of first aid measures</b>	
	<p><b>General</b> In some cases medical attention necessary (see below).</p> <p><b>Inhalation</b> Remove from source of exposure to dusts to fresh air. Obtain medical attention if ill effects occur.</p> <p><b>Ingestion</b> Do not induce vomiting unless directed to do so by medical personnel. Rinse mouth and then give water or milk to drink. Obtain medical attention if more than a small quantity has been swallowed. NOTE; never give an unconscious person anything to drink.</p> <p><b>Skin contact</b> Wash the affected area with water.</p> <p><b>Eye contact</b> Flush/irrigate eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Remove contact lenses if present and easy to do so. Continue rinsing. Obtain medical attention if symptoms persist.</p>
<b>4.2 Most important symptoms and effects, both acute and delayed</b>	
<b>Acute effects</b>	None known.
<b>Delayed effects</b>	None known.
<b>4.3 Indication of any immediate medical attention and special treatment needed</b>	
<b>Note to physician</b>	Inhalation of fire and thermal decomposition gases, containing oxides of nitrogen, ammonia and sulphur and other toxic gases can cause irritation and corrosive effects on the respiratory system. Some lung effects may be delayed. Give oxygen, especially if there is blueness around the mouth.
<b>5.0 Fire-fighting measures</b>	
<b>5.1 Extinguishing media</b>	
<b>Suitable extinguishing media</b>	<b>If fertilizer is not directly involved in the fire</b> Use the best means available to extinguish the fire. <b>If fertilizer is involved in the fire</b> Use plenty of water.
<b>Unsuitable extinguishing media</b>	Do not use chemical extinguishers or foams or attempt to smother the fire with steam or sand.
<b>5.2 Special hazards arising from the substance or mixture</b>	
<b>Specific hazards</b>	Potential explosion hazard under fire conditions when severely confined and/or contaminated with incompatible materials (e.g. organic materials, halogenated compounds - see Section 10). Do not allow molten fertilizers to run into drains.
<b>Hazardous thermal decomposition and combustion products</b>	Oxides of nitrogen, sulphur, ammonia and depending on composition HCl etc.
<b>5.3 Advice for firefighters</b>	
<b>Special fire fighting procedures</b>	Open doors and windows of the store to give maximum ventilation. Avoid breathing the fumes (toxic); stand up-wind of the fire. Prevent any contamination of fertilizer by oils or other combustible materials.
<b>Special protective equipment for fire-fighters</b>	Use a self-contained breathing apparatus if fumes are being entered.
<b>6.0 Accidental release measures</b>	
<b>6.1 Personal precautions, protective equipment and emergency procedures</b>	Avoid walking through spilled product and exposure to dust.
<b>6.2 Environmental precautions</b>	Take care to avoid the contamination of watercourses and drains and inform the appropriate authority in case of accidental contamination of watercourses.
<b>6.3 Methods and material for containment and cleaning up</b>	Any spillage of fertilizer should be cleaned up promptly, swept up and placed in a clean labelled open container for safe disposal, avoiding dusty conditions. Do not mix with sawdust and other combustible or organic substances. Dilute any contaminated or fine grained fertilizer with inert materials such as limestone/dolomite, mineral phosphate, gypsum, sand or dissolve in water.

6.4	Reference to other sections	See section 1 for emergency contact information, section 8 for personal protective equipment and section 13 for waste disposal.																																								
<b>7.0 Handling and storage</b>																																										
7.1	Precautions for safe handling	<p>Avoid excessive generation of dust.</p> <p>Avoid contamination by combustible (e.g. diesel oil, grease, etc.) and/or other incompatible materials.</p> <p>Avoid unnecessary exposure to the atmosphere to prevent moisture pick-up.</p> <p>When handling the product over long periods use appropriate personal protective equipment, e.g. gloves.</p> <p>Carefully clean all equipment prior to maintenance and repair.</p>																																								
7.2	Conditions for safe storage, including any incompatibilities	<p>Store in compliance with national and local regulations.</p> <p>Locate away from the sources of heat or fire.</p> <p>Keep away from combustible materials and substances mentioned under Section 10.</p> <p>On farm, ensure that the fertilizer is not stored near hay, straw, grain, diesel oil, etc.</p> <p>When stored loose, take particular care to avoid mixing with other fertilizers.</p> <p>Ensure high standard of housekeeping in the storage area.</p> <p>Do not permit smoking and use of naked lights in the storage areas.</p> <p>Restrict stack size (according to local regulations) and keep at least 1m distance around the stacks of bagged products.</p> <p>Any building used for the storage should be dry and well ventilated.</p> <p>Where the nature of the bagged product and climatic conditions so require, store under conditions that will avoid product breakdown by thermal cycling (wide variation in temperature). The product should not be stored in direct sunlight to avoid physical breakdown due to thermal cycling.</p> <p>Packaging materials: Plastic synthetic materials, steel and aluminum are suitable. Avoid use of copper and zinc.</p>																																								
7.3	Specific end use(s)	As a fertilizer.																																								
<b>8.0 Exposure controls/personal protection</b>																																										
8.1	Control parameters																																									
	<p><b>Regulated Exposure limit values</b></p> <p><b>Recommended occupational and consumer exposure limit values (following from the performed CSA):</b></p> <p><b>For Ammonium nitrate</b></p>	<p>No specific EU official limit.</p> <p>UK EH40 Workplace Exposure Limits, (WEL's),</p> <table border="1" data-bbox="496 1317 1535 1480"> <thead> <tr> <th>Components.</th> <th>Type.</th> <th>Value.</th> <th>Form.</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Limestone (CAS 1317-65-3).</td> <td rowspan="4">TWA, (Time Weighted Average).</td> <td>4mg/m<sup>3</sup></td> <td>Respirable</td> </tr> <tr> <td>4mg/m<sup>3</sup></td> <td>Respirable Dust</td> </tr> <tr> <td>10mg/m<sup>3</sup></td> <td>Inhalable</td> </tr> <tr> <td>10mg/m<sup>3</sup></td> <td>Inhalable Dust</td> </tr> </tbody> </table> <p>Exposure pattern Derived No Effect Level (DNEL)</p> <table border="1" data-bbox="496 1518 1535 1653"> <thead> <tr> <th></th> <th>Workers</th> <th>General population</th> </tr> </thead> <tbody> <tr> <td>Oral</td> <td>Not applicable</td> <td>12.8 mg/kg bw/day</td> </tr> <tr> <td>Dermal</td> <td>21.3 mg/kg bw/day</td> <td>12.8 mg/kg bw/day</td> </tr> <tr> <td>Inhalation</td> <td>37.6 mg/m<sup>3</sup></td> <td>11.1 mg/m<sup>3</sup></td> </tr> </tbody> </table> <p>The long-term DNEL is considered sufficient to ensure that effects from acute exposure to the substance do not occur.</p>					Components.	Type.	Value.	Form.	Limestone (CAS 1317-65-3).	TWA, (Time Weighted Average).	4mg/m <sup>3</sup>	Respirable	4mg/m <sup>3</sup>	Respirable Dust	10mg/m <sup>3</sup>	Inhalable	10mg/m <sup>3</sup>	Inhalable Dust		Workers	General population	Oral	Not applicable	12.8 mg/kg bw/day	Dermal	21.3 mg/kg bw/day	12.8 mg/kg bw/day	Inhalation	37.6 mg/m <sup>3</sup>	11.1 mg/m <sup>3</sup>										
Components.	Type.	Value.	Form.																																							
Limestone (CAS 1317-65-3).	TWA, (Time Weighted Average).	4mg/m <sup>3</sup>	Respirable																																							
		4mg/m <sup>3</sup>	Respirable Dust																																							
		10mg/m <sup>3</sup>	Inhalable																																							
		10mg/m <sup>3</sup>	Inhalable Dust																																							
	Workers	General population																																								
Oral	Not applicable	12.8 mg/kg bw/day																																								
Dermal	21.3 mg/kg bw/day	12.8 mg/kg bw/day																																								
Inhalation	37.6 mg/m <sup>3</sup>	11.1 mg/m <sup>3</sup>																																								
	<p><b>PNEC</b></p>	<table border="1" data-bbox="496 1727 1535 2083"> <thead> <tr> <th>fresh water; mg/l</th> <th>marine water; mg/l</th> <th>Intermittent use/release; mg/l</th> <th>Sewage treatment plant; mg/l</th> <th>Freshwater sediment mg/kg/dw</th> <th>Soil mg/kg/dw</th> </tr> </thead> <tbody> <tr> <td>Ammonium nitrate</td> <td>0.45</td> <td>0.045</td> <td>4.5</td> <td>18</td> <td>Not given</td> </tr> <tr> <td>Di-ammonium phosphate</td> <td>1.7</td> <td>0.17</td> <td>17</td> <td>10</td> <td>Not given</td> </tr> <tr> <td>Potassium Chloride</td> <td>Not given</td> <td>Not given</td> <td>Not given</td> <td>Not given</td> <td>Not given</td> </tr> <tr> <td>Ammonium Sulphate</td> <td>0.312</td> <td>0.0312</td> <td>0.53</td> <td>16.18</td> <td>3</td> </tr> <tr> <td>Limestone</td> <td>Not given</td> <td>Not given</td> <td>Not given</td> <td>Not given</td> <td>Not given</td> </tr> </tbody> </table>	fresh water; mg/l	marine water; mg/l	Intermittent use/release; mg/l	Sewage treatment plant; mg/l	Freshwater sediment mg/kg/dw	Soil mg/kg/dw	Ammonium nitrate	0.45	0.045	4.5	18	Not given	Di-ammonium phosphate	1.7	0.17	17	10	Not given	Potassium Chloride	Not given	Not given	Not given	Not given	Not given	Ammonium Sulphate	0.312	0.0312	0.53	16.18	3	Limestone	Not given	Not given	Not given	Not given	Not given				
fresh water; mg/l	marine water; mg/l	Intermittent use/release; mg/l	Sewage treatment plant; mg/l	Freshwater sediment mg/kg/dw	Soil mg/kg/dw																																					
Ammonium nitrate	0.45	0.045	4.5	18	Not given																																					
Di-ammonium phosphate	1.7	0.17	17	10	Not given																																					
Potassium Chloride	Not given	Not given	Not given	Not given	Not given																																					
Ammonium Sulphate	0.312	0.0312	0.53	16.18	3																																					
Limestone	Not given	Not given	Not given	Not given	Not given																																					

<b>8.2</b>	<b>Exposure controls</b>	
	<b>Appropriate engineering measures</b>	Avoid high dust concentration and provide ventilation where necessary. Risk of inhalation must be minimised as much as possible.
	<b>Hygienic measures</b>	When handling the product do not eat, drink or smoke. Wash hands after handling and before eating, smoking and using the lavatory and at the end of the working period.
	<b>Individual protection</b>	
	<b>Respiratory system</b>	If dust concentration is high and/or ventilation is inadequate, use suitable dust mask or respirator with an appropriate filter; EN 136, EN 140, EN143, EN149, Filters P2
	<b>Skin and body</b>	Working clothes.
	<b>Hands</b>	Wear suitable gloves (e.g. plastic, rubber or leather) when handling the product over long periods.
	<b>Eyes</b>	Use appropriate safety eye wear depending on the task being carried out. Wear safety glasses with side protection or safety goggles, (EN166).
	<b>Environmental exposure controls</b>	Avoid the contamination of watercourses and drains and inform the appropriate authority in case of accidental contamination of watercourses. Do not flush into surface water or sanitary sewer system.

## 9.0 Physical and chemical properties

<b>Appearance</b>	Solid, may contain; white, grey or brown, red, cream and straw and light grey coloured granules or prills unless deliberately coloured during manufacture.
<b>Odour</b>	Odourless.
<b>Odour threshold</b>	Not applicable
<b>pH</b>	Usually > 4.5 (water solution 100g/ltr).
<b>Melting point/freezing point</b>	160-170°C depending on moisture content (for ammonium nitrate).
<b>Initial boiling point and boiling range</b>	Decomposes.
<b>Flash point</b>	Not applicable, as the fertilizer is a mixture of inorganic solids.
<b>Flammability (solid, gas)</b>	Not flammable
<b>Upper/lower flammability or explosive limits</b>	Not applicable.
<b>Explosive properties</b>	The fertilizer has a high resistance to detonation. This resistance is decreased by the presence of contaminants and/or high temperatures. Heating under strong confinement (e.g. in tubes or drains) may lead to a violent reaction or explosion especially if there is contamination by some of the substances mentioned under Section 10.
<b>Auto-ignition temperature</b>	Ammonium nitrate based NPK/NP/NK fertilizer is not combustible.
<b>Decomposition temperature</b>	May start to decompose above approx. 170°C.
<b>Minimum ignition energy</b>	Not applicable
<b>Oxidising properties</b>	Not classified as an oxidizer.
<b>Critical temperature</b>	Not applicable
<b>Relative density</b>	Not applicable
<b>Density</b>	(1725 kg/m <sup>3</sup> for main ingredient ammonium nitrate as solid material).
<b>Loose bulk density</b>	950 - 1050kg/m <sup>3</sup>
<b>Vapour pressure at 20°C</b>	Not applicable
<b>Vapour density</b>	Not applicable
<b>Partition coefficient (n-octanol/water)</b>	Not applicable
<b>Viscosity</b>	Not applicable
<b>Mean particle size</b>	2-4mm
<b>Water solubility</b>	Pure ammonium nitrate:1920 g/l at 20 °C Hygroscopic - readily picks up moisture from the air.
<b>Surface tension</b>	Not surface active (based on molecular structure)

<b>Other information</b>	<b>Miscibility</b>	Not applicable
	<b>Fat solubility</b>	Not available
	<b>Gas group</b>	Not applicable
	<b>Remarks</b>	No further relevant information available.

### 10.0 Stability and reactivity

10.1	<b>Reactivity</b>	Stable under recommended storage and handling conditions (see section 7, handling and storage).
10.2	<b>Chemical stability</b>	Stable under recommended storage and handling conditions (see section 7, handling and storage).
10.3	<b>Possibility of hazardous reactions</b>	When heated can decompose.
10.4	<b>Conditions to avoid</b>	Heating above 170°C (decomposes to gases). Contamination by incompatible materials. Unnecessary exposure to the atmosphere. Sources of heat or fire close to the product. Heating under confinement. Welding or hot work on equipment or plant which may have contained fertilizer without first washing thoroughly to remove all fertilizer.
10.5	<b>Incompatible materials</b>	Combustible materials, reducing agents, acids, alkalis, sulphur, chlorates, chromates, nitrites, permanganates, metallic powders and substances containing metals such as copper, nickel, cobalt, zinc and their alloys.
10.6	<b>Hazardous decomposition products</b>	For fire situation: see section 5. When strongly heated, it melts and decomposes releasing toxic fumes (e.g. NO <sub>x</sub> , ammonia and other gases depending on composition) When in contact with alkaline material such as lime, may give off ammonia gas. See also Sections 2 and 9.

### 11.0 Toxicological information

#### 11.1 Information on toxicological effects

<b>Toxicokinetics, metabolism and distribution</b>	Not available			
	<b>Acute toxicity</b>	<b>Ingredients</b>		
		<b>Acute oral toxicity</b>	Ammonium nitrate	LD50: 2950 mg/kg bw (OECD 401)
		<b>Acute dermal toxicity</b>	Ammonium nitrate	LD50: > 5000 mg/kg bw (OECD 402)
		<b>Acute inhalation toxicity</b>	Ammonium nitrate	LC50: > 88.8 mg/l (no guideline followed)
		<b>Acute oral toxicity</b>	Di-ammonium phosphate	LD50: > 2000 mg/kg, rat, (OECD 425)
		<b>Acute dermal toxicity</b>	Di-ammonium phosphate	LD50: > 5000 mg/kg, rat, (OECD 402)
		<b>Acute inhalation toxicity</b>	Di-ammonium phosphate	LC50: > 5 mg/l, rat, 4hr duration of exposure, (OECD 403)
		<b>Acute oral toxicity</b>	Potassium chloride	LD50: 3020 mg/kg, rat.
		<b>Acute oral toxicity</b>	Ammonium sulphate	LD50: 2840 mg/kg, rat.
		<b>Acute oral toxicity</b>	Ammonium sulphate	LD50: 4540 mg/kg, rat.
		<b>Acute oral toxicity</b>	Ammonium sulphate	LD50: 640 mg/kg, mouse.
		<b>Acute oral toxicity</b>	Ammonium sulphate	LDLO: 3500 mg/kg, domestic animals.
		<b>Acute dermal toxicity</b>	Ammonium sulphate	LD50: >2000 mg/kg, rat.
		<b>Acute inhalation toxicity</b>	Ammonium sulphate	>1000 mg/m <sup>3</sup> , (8 hours TWA), rat.
		<b>Local effects</b>	<b>Skin irritation</b>	Product
<b>Eye irritation</b>	Product		Not classified as irritating; see section 16.	
<b>Sensitisation</b>	Not sensitizing (OECD 429, with magnesium nitrate, nitric acid ammonium calcium salt, sodium nitrate). Prolonged contact may cause irritation and dryness from Limestone.			

<b>Other</b>		For main ingredient ammonium nitrate.
	<b>Sub-acute toxicity</b>	Inhalation 2-weeks NOAEL $\geq$ 185 mg/m <sup>3</sup> (OECD 412), Oral 28-day NOAEL $\geq$ 1500 mg/kg bw/day (OECD 422, with potassium nitrate), and; Oral 28-day NOAEL $\geq$ 250 mg/kg bw/day (OECD 422, with di-ammonium phosphate) Oral 52-week NOAEL = 256 mg/kg bw/day (OECD 453, with ammonium sulphate)
	<b>Mutagenicity</b>	Negative (OECD 471, 473, with nitric acid ammonium calcium salt) Negative (OECD 476, with potassium nitrate)
	<b>Reproductive toxicity</b>	Oral 28-day NOAEL $\geq$ 1500 mg/kg bw/day (OECD 422, with potassium nitrate)
	<b>Carcinogenicity</b>	Not carcinogenic (OECD 453, with ammonium sulphate)
	<b>Remarks</b>	Adverse health effects are considered unlikely when the product is handled and used correctly. If large quantities are ingested may give rise to gastro-intestinal disorders.  No new or increased hazards of Sub-acute toxicity, Mutagenicity, Reproductive toxicity and/or Carcinogenicity are introduced from the inclusion of one or more of each of the substances; Di-ammonium Phosphate, Potassium Chloride, Ammonium Sulphate and Limestone in the dry mixture/blend. Limestone dust if inhaled over a prolonged or extended period can, by respirable dust, lead to respiratory system damage and disease. Crystalline silica is present in limestone at around 2% by content, (Ref; HSE INDG 463), respirable crystalline silica has been associated with the lung disease silicosis.

**12.0 Ecological information**

<b>12.1 Toxicity</b>		
Ammonium nitrate	Fish (short-term)	48-h LC50: 447 mg/l (no guideline followed).
	Fish (long-term)	No data
	Daphnia magna (short-term)	48-h EC50: 490 mg/l (no guideline followed, with potassium nitrate).
	Daphnia magna (long-term)	No data
	Algae	10-d EC50: > 1700 mg/l (seawater, no guideline followed, performed with potassium nitrate).
	Inhibition of microbial activity	3-h EC50: >1000 mg/l, NOEC: 180 mg/l (OECD 209, with sodium nitrate).
Di-ammonium phosphate	Acute algae toxicity	EC50: > 100 mg/l, EC10/LC10 or NOEC = 100mg/l for freshwater algae, species; Selanastrum capricornutum, 72 hour period.
	DAP commercial grade.	Acute toxicity on fish. LC50: 1700mg/l for fry at 21deg/C, species Cirrhinus mrigala. LC50 = 1875 mg/l on fingerlings at 21 deg/C, 96 hour period.
Single superphosphate, (read across to Di-ammonium phosphate).	Acute toxicity on aquatic invertebrates.	EC50/LC50: 1790 mg/l for freshwater invertebrates at 20.7 deg/C, species Daphnia carinata, 72 hour period.
		PNEC for freshwater; 1.7 mg/l, PNEC for marine water; 0.17 mg/l, PNEC for intermittent releases; 17mg/l.
	Inhibition of microbial activity	3-h EC50/LC50: >100 mg/l, EC10/LC10 or NOEC: 100 mg/l (Activated sludge of a predominantly domestic sewage).
		PNEC for sewage treatment plant: 10mg/l
Potassium Chloride	Toxicity to fish.	LC50: 880 mg/l, species Pimephales Promelas, (fathead minnow), 96 hour period, OECD Test Guideline 203.
	Toxicity to daphnia and other aquatic invertebrates.	EC50: 440 - 880 mg/l, species Daphnia Magna, (water flea), 48 hour period, OECD Test Guideline 202.
	Toxicity to algae.	EC50: >100 mg/l, species Desmodesmus Subspicatus, (green algae), 72 hour period, OECD Test Guideline 201.
	Toxicity to bacteria.	EC50: >1000mg/l, activated sludge, 3 hour period, OECD Test Guideline 209.
	Toxicity to fish, (chronic toxicity).	No observed effect concentration: 500 mg/l, 7 day period, OECD Test Guideline 210.

12.2	<b>Persistence and degradability</b>	Ammonium Sulphate	Toxicity to fish.	LC50: 6.6 - 39.2 mg/l, species Oncorhynchus Mykiss, (rainbow trout), 96 hour period.	
				LC50; >20 mg/l, species Pimephales Promelas, (fathead minnow), 96 hour period.	
			Toxicity to daphnia and other aquatic invertebrates.	LC50; >20 mg/l, species Daphnia Magna, (water flea), 96 hour period.	
			<b>Ingredient name</b>	Ammonium Nitrate	
			<b>Biodegradation</b>	Standard test is not applicable as the mixture is inorganic.	
			<b>Hydrolysis</b>	No hydrolysable group is present, will completely dissociate into ions.	
				<b>Ingredient name</b>	Di-ammonium Phosphate (N & P).
			<b>Biodegradation</b>	Standard test is not applicable as the mixture is inorganic.	
			<b>Hydrolysis</b>	Hydrolysis of the substance does not occur, and is also not susceptible to photodegradation.	
				<b>Ingredient name</b>	Potassium Chloride (K).
			<b>Biodegradation</b>	Not applicable	
			<b>Hydrolysis</b>	Not applicable.	
				<b>Ingredient name</b>	Ammonium Sulphate (S).
			<b>Biodegradation</b>	Standard test is not applicable as the mixture is inorganic.	
	<b>Hydrolysis</b>	Not applicable.			
		<b>Ingredient name.</b>	Limestone.		
	<b>Biodegradation</b>	Limestone is non-volatile and inert, it is resistant to degradation and will persist in the environment.			
	<b>Hydrolysis</b>	Not applicable.			
12.3	<b>Bioaccumulative potential</b>	Octanol-water partition coefficient (Kow)	Not relevant as the mixture is inorganic, but considered to be low (based on high water solubility)		
		Bioconcentration factor (BCF)	Low potential for bioaccumulation (based on main ingredient properties), Potassium Chloride (K) and Ammonium Sulphate (S), Di-ammonium Phosphate (N & P); Aquatic bio-accumulation - simple inorganic salts with high aqueous solubility will exist in a dissociated form in an aqueous solution. Such a substance has a low potential for bioaccumulation. Terrestrial - simple inorganic salts with high aqueous solubility will bioaccumulate; will exist in a dissociated form in an aqueous solution. Such a substance has a low potential for bioaccumulation.		
12.4	<b>Mobility in soil</b>	<p>Low potential for adsorption (based on main ingredient properties)</p> <p>Very soluble in water. The NO<sub>3</sub><sup>-</sup> ion is mobile. The NH<sub>4</sub><sup>+</sup> ion is adsorbed by soil.</p> <p>Di-ammonium Phosphate (N &amp; P); Phosphates whether citrate or water soluble, are translocated in the soil only over very short periods and are then immobilised.</p> <p>Potassium Chloride (K); Not applicable.</p> <p>Ammonium Sulphate (S); easily soluble in cold water.</p> <p>Limestone is resistant to degradation and will persist in the environment.</p>			
12.5	<b>Results of PBT and vPvB assessment</b>	<p>According to Annex XIII of Regulation (EC) No 1907/2006, no PBT and vPvB assessment has been conducted since ammonium nitrate is inorganic.</p> <p>According to data available, Di-ammonium Phosphate (N &amp; P), is not PBT and not VPvB.</p> <p>Potassium Chloride, (K), is inorganic so no PBT and vPvB assessment is required.</p> <p>Ammonium Sulphate, (S), is not considered to be PBT or vPvB.</p> <p>Limestone - not applicable.</p>			
12.6	<b>Other adverse effects</b>	Heavy spillage may cause adverse environmental impact such as eutrophication in confined surface waters.			



13.0 Disposal considerations					
	<b>Container</b>	Containers should be cleaned by appropriate method and then re-used or disposed by landfill or incineration as appropriate, in accordance with local and national regulations. Do not remove label until container is thoroughly cleaned.			
	<b>Methods of disposal</b>	Depending on degree and nature of contamination dispose of by use as fertilizer on farm, as raw material for liquid fertilizer, or to an authorised waste facility. Do not empty into drains; dispose of this material and its container in a safe way and in accordance with all applicable local and national regulations. See chapters 06 03 and 06 10 of the list of wastes (Commission decision 2000/532/EC )			
	<b>Package waste disposal</b>	Empty the bag by shaking to remove as much as possible of its contents. If approved by local authorities, empty bags may be disposed of as non-hazardous material or returned for recycling.			
<i>Note: see section 7 for safe handling and storage</i>					
14.0 Transport information					
		<b>ADR/RID</b>	<b>ADN/ADNR</b>	<b>IMDG</b>	<b>ICAO/IATA</b>
14.1	<b>UN Number</b>	Not classified			
14.2	<b>UN Proper shipping name</b>	Not applicable.	Not applicable.	Not applicable.	Not applicable.
14.3	<b>Transport hazard class(es)</b>	Not classified			
14.4	<b>Packing group</b>	Not applicable.			
	<b>Label</b>	Not applicable.			
14.5	<b>Environmental hazards</b>	Not applicable.			
14.6	<b>Special precautions for user</b>	None.			
14.7	<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not Applicable.			
15.0 Regulatory information					
15.1	<b>Safety, health and environmental regulation/legislation specific for the substance or mixture</b>	EC 2003/2003, 96/82 EC; <i>Seveso Directive</i> .			
	<b>Other regulations</b>	Regulation EC 1907/2006 (REACH), EC 2003/2003, 96/82 EC. Decision No 1348/2008/EC of the European Parliament & of the Council and Commission Regulation (EC) No 552/2009. Notification and Marking of Sites Regulations 1990, (NAMOS), (as amended 2013).			
15.2	<b>Chemical safety assessment</b>	In accordance with REACH Article 14, a Chemical Safety Assessment has been carried out for the main ingredient Ammonium Nitrate as a substance.			
16.0 Other information					
	The information provided in this safety data sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any proceed, unless specified in the text.				
	<b>Classification in accordance with Regulation 1272/2008, as listed in Annex VI:</b>	None.			
	<b>Classification in accordance with Regulation 1272/2008, by self-classification based on the performed CSA</b>	Not classified. No eye irritation (tested on mixtures with similar compositions according to OECD 437 and OECD 405)			

<b>Risk phrases</b>	R8 Contact with combustible material may cause fire. R36 Irritating to eye.
<b>Symbols</b>	O oxidizing Xi irritant
<b>Abbreviations and acronyms</b>	Oxidizing solids category 3 (Ox. Sol 3) May intensify fire; oxidizer (H272) Eye irritation Category 2 (Eye Irrit. 2) Causes serious eye irritation (H319) CLP - Classification, Labelling and Packaging Regulation, (Regulation EC No. 1272/2008). CAS Number - Chemical Abstracts Number, substance registration number. EC No. - European Commission substance identification number. % w/w - Percentage weight for weight; percentage by weight of solute in total weight of solution.  PBT - Persistent, bioaccumulative, toxic. vPvB - Very persistent, very bioaccumulative. DNEL - Derived no effect level. PNEL - Prescribed no effect level. LC50 - Lethal concentration for 50% of subjects. LD50 - Lethal dose for 50% of subjects. OECD - Organisation for Economic Co-operation and Development. LOAEL - Lowest observed adverse effect level. NOAEL - No observed adverse effect level. EC50 - Effective Concentration for 50% of subjects. NOEC - No observed effect concentration. LTEL - Long term exposure limit. STEL - Short term exposure limit TWA - Time weighted average. mg/kg/bw/day - mg/kg of body weight per day. mg/kg/dw - mg/kg of dry weight.
<b>Training advice</b>	Operators should be provided with information, instruction, training and supervision relative to this Safety Data Sheet and any subsequent COSHH assessment produced by his/her employer.
<b>Date of previous SDS</b>	08/07/2010
<b>Modifications in this version</b>	
<b>References</b>	EFMA/Fertilizers Europe Guidance documents, TFI HPV data; NOTOX gap analysis

**Disclaimer**

The information in this Safety Data Sheet is given in good faith and belief in its accuracy based on our knowledge of the substance/preparation concerned at the date of publication. It does not imply the acceptance of any legal liability or responsibility whatsoever by Origin Fertilisers for the consequences of its use or misuse in any particular circumstances.