



## AMMONIUM NITRATE

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

<b>1.1</b>	<b>Product/Trade name</b>	Straight Nitrogen
	<b>Common chemical name</b>	Ammonium Nitrate
	<b>Synonyms</b>	Ammonium nitrate fertilizer, Nitric acid ammonium salt
	<b>Chemical formula</b>	NH <sub>4</sub> NO <sub>3</sub>
	<b>EU index number</b>	Not listed.
	<b>EC No</b>	229-347-8
	<b>CAS No.</b>	6484-52-2
	<b>REACH Registration Number</b>	
	<b>National Product Registration Number, where appropriate.</b>	
<b>1.2</b>	<b>Relevant identified uses of the substance or mixture and uses advised against</b>	
	<b>Use of the substance/mixture</b>	Fertilizer
	<b>Uses advised against</b>	Other non-specified industry
<b>1.3</b>	<b>Details of the supplier of the safety data sheet</b>	
	<b>Manufacturer/Importer/Supplier</b>	McCreath Simpson & Prentice (A Trading Division of Simpsons Malt Ltd), Tweed Valley Maltings, Tweedside Trading Estate, Berwick-upon-Tweed, TD15 2UZ, Tel: 01289 330022
	<b>Email address of the person responsible for SDS</b>	AndyRichardson@mspagriculture.co.uk
<b>1.4</b>	<b>Emergency telephone number</b>	Tel: 01289 33002

### 2.0 Hazards identification

<b>2.1</b>	<b>Classification of the substance or mixture</b>	
	<b>Classification in accordance with Regulation 1272/2008 (CLP)</b>	Ox. Sol 3, H272 Eye Irrit. 2, H319
	<b>Hazard statement(s)</b>	H272 May intensify fire; oxidiser. H319 Causes serious eye irritation.
	<b>Classification in accordance with Directive 67/548 (DSD)</b>	O; R8, Xi; R36
	<b>Risk phrase(s)</b>	R8 Contact with combustible material may cause fire. R36 Irritating to eyes.
<b>2.2</b>	<b>Label elements</b>	Labelling in accordance with Regulation 1272/2008 (CLP)
	<b>Hazard pictogram(s)</b>	 
	<b>Signal word</b>	Warning
	<b>Hazard statement(s)</b>	H272 May intensify fire; oxidiser. H319 Causes serious eye irritation.

**Precautionary statement(s)**

Keep away from heat, sparks, open flames & hot surfaces. — No smoking.  
 Keep/Store away from combustible materials & chemicals.  
 P210  
 P220 Wear eye protection.  
 P280  
 P370+P378 In case of fire: Use copious quantities of water.  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 8  
 P337+P313 If eye irritation persists: Get medical attention.  
 Wash hands thoroughly after handling.  
 P264

**2.3 Other hazards****PBT/vPvB criteria**

According to Annex XIII of Regulation (EC) No 1907/2006, no PBT and vPvB assessment has been conducted since ammonium nitrate is inorganic.

**Other hazards which do not result in classification****Physical and chemical hazards**

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 and ammonia. It has high resistance to detonation. Heating under strong confinement can lead to explosive behaviour.

**Health hazards**

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.

**Environmental hazards**

Ammonium nitrate is a nitrogen fertilizer. Heavy spillage may cause adverse environmental impact such as eutrophication in confined surface waters or nitrate contamination. See Section 12.

**3.0 Composition/information on ingredients****Substance:**

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	Oxid. Solid 3, H272 Eye Irrit. 2, H319	O; R8 Xi; R36	typically >97

**4.0 First aid measures****4.1 Description of first aid measures**

**General** In some cases medical attention necessary (see below).

**Inhalation** Remove from source of exposure to dusts.  
Obtain medical attention if ill effects occur.

**Ingestion** Do not induce vomiting.  
Rinse mouth and then give water or milk to drink.  
Obtain medical attention if more than a small quantity has been swallowed.

**Skin contact** Wash the affected area with water.

**Eye contact** Flush/irrigate eyes with copious amounts of water for at least 15 minutes.  
Remove contact lenses if present and easy to do so.  
Obtain medical attention if eye irritation persists.

**4.2 Most important symptoms and effects, both acute and delayed**

**Acute effects** Eye irritation

**Delayed effects** None known

**4.3 Indication of any immediate medical attention and special treatment needed**

**Note to physician** Inhalation of fire and thermal decomposition gases, containing oxides of nitrogen and ammonia, 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.

## 5.0 Fire-fighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

#### If fertilizer is not directly involved in the fire

Use the best means available to extinguish the fire.

#### If fertilizer is involved in the fire

Use plenty of water.

#### Unsuitable extinguishing media

Do not use chemical extinguishers or foams or attempt to smother the fire with steam or sand.

### 5.2 Special hazards arising from the substance or mixture

#### Specific hazards

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.

#### Hazardous thermal decomposition and combustion products

Oxides of nitrogen, ammonia

### 5.3 Advice for firefighters

#### Special fire fighting procedures

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.

#### Special protective equipment for fire-fighters

Use a self-contained breathing apparatus if fumes are being entered.

## 6.0 Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid walking through spilled product and exposure to dust.

### 6.2 Environmental precautions

Take care to avoid the contamination of watercourses and drains and inform the appropriate authority in case of accidental contamination of watercourses.

### 6.3 Methods and material for containment and cleaning up

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.

## 7.0 Handling and storage

The information in this section contains generic advice and guidance. The list of identified uses given in section 1 should be considered for any use-specific information provided in the Exposure Scenario(s).

### 7.1 Precautions for safe handling

Avoid excessive generation of dust.

Avoid contamination by combustible (e.g. diesel oil, grease, etc.) and/or other incompatible materials.

Avoid unnecessary exposure to the atmosphere to prevent moisture pick-up.

When handling the product over long periods use appropriate personal protective equipment, e.g. gloves.

Carefully clean all equipment prior to maintenance and repair.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in compliance with national and local regulations.

Locate away from the sources of heat or fire.

Keep away from combustible materials and substances mentioned under Section 10.

On farm, ensure that the fertilizer is not stored near hay, straw, grain, diesel oil, etc.

When stored loose, take particular care to avoid mixing with other fertilizers.

Ensure high standard of housekeeping in the storage area.

Do not permit smoking and use of naked lights in the storage areas.

Restrict stack size (according to local regulations) and keep at least 1m distance around the stacks of bagged products.

Any building used for the storage should be dry and well ventilated.

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.

Packaging materials:

Plastic synthetic materials, steel and aluminum are suitable. Avoid use of copper and zinc.

### 7.3 Specific end use(s)

Fertiliser

## 8.0 Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of identified uses given in section 1 should be considered for any use-specific information provided in the Exposure Scenario(s).

## 8.1 Control parameters

<b>Regulated Exposure limit values</b>	No specific EU official limit.
<b>Recommended occupational and consumer exposure limit values (following from the performed CSA):</b>	Exposure pattern Derived No Effect Level (DNEL)
	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>
	The long-term DNEL is considered sufficient to ensure that effects from acute exposure to the substance do not occur.
<b>PNEC</b>	fresh water: 0.45 mg/l marine water: 0.045 mg/l Intermittent use/release: 4.5 mg/l Sewage treatment plant: 18 mg/l

## 8.2 Exposure controls

<b>Appropriate engineering measures</b>	Avoid high dust concentration and provide ventilation where necessary.
<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 (e.g. EN 143, 149, filters P1).
	<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> Recommended: safety glasses with side shields (EN 166).
<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

### 9.1 Information on basic physical and chemical properties

<b>Appearance</b>	White or off-white granules or prills unless deliberately coloured during manufacture.
<b>Odour</b>	Odourless.
<b>Odour threshold</b>	Not applicable.
<b>pH</b>	pH water solution (100 g/l at 20°C) > 4.5.
<b>Melting point/freezing point</b>	160-170°C depending on moisture content.
<b>Initial boiling point and boiling range</b>	No boiling point, decomposes > 210 °C
<b>Flash point</b>	Not relevant, as the substance is an inorganic solid.
<b>Evaporation rate</b>	Not applicable
<b>Flammability (solid, gas)</b>	Non 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 fertilizer is not combustible.
<b>Decomposition temperature</b>	Starts to decompose above approx. 170°C
<b>Minimum ignition energy</b>	Not applicable
<b>Oxidising properties</b>	Can support combustion and oxidize, may intensify fire.
<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>	Normally between 850-1100 kg/m <sup>3</sup> .
<b>Vapour pressure at 20°C</b>	Considered negligible (based on melting and boiling point).

Vapour density	Not applicable
Partition coefficient (n-octanol/water)	Not applicable
Viscosity	Not applicable to solids
Water solubility	>100 g/l at 20°C. Hygroscopic - readily picks up moisture from the air.
Surface tension	Not surface active (based on molecular structure)

## 10.0 Stability and reactivity

10.1	Reactivity	Stable under recommended storage and handling conditions (see section 7, handling and storage).
10.2	Chemical stability	Stable under recommended storage and handling conditions (see section 7, handling and storage).
10.3	Possibility of hazardous reactions	When heated, can decompose.
10.4	Conditions to avoid	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	Incompatible materials	Combustible materials, reducing agents, acids, alkalis, sulphur, chlorates, chlorides, chromates, nitrites, permanganates, metallic powders and substances containing metals such as copper, nickel, cobalt, zinc and their alloys.
10.6	Hazardous decomposition products	For fire situation: see section 5. When strongly heated, it melts and decomposes releasing toxic fumes (e.g. NO <sub>x</sub> , ammonia) 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

Toxicokinetics, metabolism and distribution	Not available	
Acute toxicity	Ingredients	
Acute oral toxicity	Ammonium nitrate	LD50: 2950 mg/kg bw (OECD 401)
Acute dermal toxicity	Ammonium nitrate	LD50: > 5000 mg/kg bw (OECD 402)
Acute inhalation toxicity	Ammonium nitrate	LC50: > 88.8 mg/l (no guideline followed)
Local effects		
Skin irritation	Product	Not irritating (OECD 404)
Eye irritation	Product	Irritating (OECD 405)
Skin sensitisation	Not sensitizing (OECD 429, with magnesium nitrate, nitric acid ammonium calcium salt, sodium nitrate)	
Other		
Sub-acute toxicity	Oral 28-day NOAEL ≥ 1500 mg/kg bw/day (OECD 422, with potassium nitrate) Oral 52-week NOAEL = 256 mg/kg bw/day (OECD 453, with ammonium sulfate) Inhalation 2-weeks NOAEL ≥ 185 mg/m <sup>3</sup> (OECD 412)	
Mutagenicity	Negative (OECD 471, 473, with nitric acid ammonium calcium salt) Negative (OECD 476, with potassium nitrate)	
Reproductive toxicity	Oral 28-day NOAEL ≥ 1500 mg/kg bw/day (OECD 422, with potassium nitrate)	
Carcinogenicity	Not carcinogenic (OECD 453, with ammonium sulfate)	
Remarks	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.	

## 12.0 Ecological information

### 12.1 Toxicity

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)

Straight-N

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)

## 12.2 Persistence and degradability

**Biodegradation** Standard test is not applicable as the substance is inorganic.

**Hydrolysis** No hydrolysable group is present, will completely dissociate into ions.

## 12.3 Bioaccumulative potential

Octanol-water partition coefficient Not relevant as the substance is inorganic, but considered to be low (based on high water solubility)

Bioconcentration factor (BCF) Low potential for bioaccumulation (based on substance properties)

## 12.4 Mobility in soil

Low potential for adsorption (based on substance properties)

Very soluble in water. The  $\text{NO}_3^-$  ion is mobile. The  $\text{NH}_4^+$  ion is adsorbed by soil.

## 12.5 Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No 1907/2006, no PBT and vPvB assessment has been conducted since ammonium nitrate is inorganic.

## 12.6 Other adverse effects

Heavy spillage may cause adverse environmental impact such as eutrophication in confined surface waters.

## 13.0 Disposal considerations

### 13.1 Waste treatment methods

In accordance with local and national regulations, disposed by landfill or incineration. Controlled biodegradation in waste water treatment is possible.

#### Container

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.

#### Methods of disposal

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)


#### Package waste disposal

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.

*Note: see section 7 for safe handling and storage*

## 14.0 Transport information

	ADR/RID	ADN/ADNR	IMDG	ICAO/IATA
14.1 UN Number	UN2067	UN2067	UN2067	UN2067
14.2 UN Proper shipping name	Ammonium nitrate based fertilizer	Ammonium nitrate based fertilizer	Ammonium nitrate based fertilizer	Ammonium nitrate based fertilizer
14.3 Transport hazard class(es)	5.1	5.1	5.1	5.1
14.4 Packing group	III	III	III	III
Label				
14.5 Environmental hazards	Not applicable.			
14.6 Special precautions for user	None.			
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable			

## 15.0 Regulatory information

### 15.1 Safety, health and environmental regulation/legislation specific for the substance or mixture

EC 2003/2003, 96/82 EC; Seveso *Directive*.

**Other regulations** 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.

### 15.2 Chemical safety assessment

In accordance with REACH Article 14, a Chemical Safety Assessment has been carried out for this

## 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.

**Classification in accordance with Regulation 1272/2008,** None.  
**as listed in Annex VI:**

**Classification in accordance with Regulation 1272/2008,** Ox. Sol 3, H272  
**by self-classification based on the performed CSA** Eye Irrit. 2, H319

**Risk phrases** See section 2.1

**Symbols** O oxidizing  
Xi irritant

**Abbreviations and acronyms** *Oxidizing solids category 3 (Ox. Sol 3)*  
*Eye irritation Category 2 (Eye Irrit. 2)*

**References** 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 McCreath Simpson & Prentice (A Trading Division of Simpsons Malt Ltd) for the consequences of its use or misuse in any particular circumstances.