Safety Data Sheet
Conforms to REGULATION (EU) No. 453/2010

Version:	Revision 1
Issue date:	06/08/21

GROUP 5

AMMONIUM SULPHATE

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

1.1 Product Identifier

Product/Trade name	Ammonium sulphate fertilizers, (and mixtures of ammonium sulphate with diluents). As indicated on packaging by PSDS Group 5 marking and nutrient inclusion.
Common chemical name	Ammonium sulphate, (N & S), fertilizer.
Synonyms	AS
Chemical formula	(NH4)2SO4
EU index number (Annex 1)	Not listed.
EC No	231-984-1
CAS No.	7783-20-2
REACH Registration Number.	01-2119455044-46
National Product Registration Number, where applicable	N/A

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

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

1.3 Details of the supplier of the safety data sheet

Manufacturer/Importer/Supplier	Manufacturer
	Company name: Mole Valley Forage Services
	Full address: 8 shed, North side, South Dock, Alexandra dock, Newport, Gwent, NP20 2NP
	Tel: 01769 576450
Email address of the person responsible for SDS	Email address: reece.woolgar@mvfs.co.uk

1.4 Emergency telephone number

Tel; 01769 576227
Out of hours; 07814 284067

2 Hazards identification

2.1 Classification of the substance or mixture

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

2.2 Label elements

Hazard pictogram(s)	None.
Signal word	Not applicable
Hazard Statement(s)	None.

	Precautionary Statements	None.
2.3	**Other hazards**	Ensure adequate ventilation, especially in confined areas.
	PBT/vPvB criteria	According to Annex XIII of Regulation (EC) No 1907/2006, no PBT and vPvB assessment has been conducted since ammonium sulphate 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 and thermal decomposition products: On heating the fertilizer melts and further heating can cause decomposition, releasing toxic fumes containing oxides of nitrogen, (NOx), oxides of sulphur, ammonia and amines.
	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. Inhalation of decomposition gases containing ammonia and oxides of sulphur can cause irritation and corrosive effects on the respiratory system and serious lung effects. Some lung effects may be delayed.
	Environmental hazards	Ammonium sulphate is a nitrogen fertilizer. Heavy spillage may cause adverse environmental impact such as eutrophication in confined surface waters. See Section 12.

3 Composition/information on ingredients

Substance.

Hazardous ingredients

Chemical name	CAS no.	EC no.	Generic REACH Reg No.)	Classification Regulation (EC) No. 1272/2008	Classification Directive 67/548/EEC	% (w/w)
Other ingredients						
Ammonium sulphate	7783-20-2	231-984-1	01-2119455044-46			100%

EC no. means EINECS or ELINCS number.

4.0 First aid measures

4.1 Description of first aid measures

General	No hazards which require special first aid measures.
Inhalation	Remove from source of exposure to dusts. Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if symptoms occur. Symptoms may be delayed.
Ingestion	Do not induce vomiting. Clean mouth with water and then drink 1 or 2 glasses of water. Obtain medical attention if more than a small quantity has been swallowed. NOTE; never give an unconscious person anything to drink.
Skin contact	Wash the affected area with water. Obtain medical attention if symptoms persist.
Eye contact	Rinse thoroughly with plenty of water, also under the eyelids. Remove contact lenses if present and easy to do so. Continue rinsing. Obtain medical attention if symptoms persist.

4.2 Most important symptoms and effects, both acute and delayed

Acute effects	Effects of contact or inhalation may be delayed. Burning feeling and temporary redness, coughing and/or wheezing.
Delayed effects	

4.3 Indication of any immediate medical attention and special treatment needed

Note to physician	Treat symptomatically. Effects of contact or inhalation may be delayed.

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	Where combustible material is the source of the fire, extinguish this source as a matter of priority. Do not allow molten fertilizers to run into drains. If fire run-off water enters any water course or drains, inform the appropriate water authority immediately.
	Hazardous thermal decomposition and combustion products	Hazardous decomposition products formed under fire conditions; Sulphur oxides, Nitrogen oxides, (NOx), ammonia, amines.
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.
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**	
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 Section10. 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)**	As a fertilizer.

8.0 Exposure controls/personal protection

8.1 Control parameters

Regulated Exposure limit values

Contains no substances with occupational exposure limit values.

Recommended occupational and consumer exposure limit values (following from the performed CSA):
For Ammonium Sulphate.

Exposure pattern Derived No Effect Level (DNEL)

	Workers	General population
Oral	Not applicable	12.8 mg/kg bw/day
Dermal	42.667 mg/kg bw/day	12.8 mg/kg bw/day
Inhalation	11.1 mg/m3	11.1 mg/m3

The long-term DNEL is considered sufficient to ensure that effects from acute exposure to the substance do not occur.

PNEC	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 Sulphate	0.312	0.0312	0.53	16.18	3	62.6

8.2 Exposure controls

Appropriate engineering measures
Avoid high dust concentration and provide ventilation where necessary.

Hygienic measures
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.

Individual protection

Respiratory system
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

Skin and body
Working clothes.

Hands
Wear suitable gloves (e.g. plastic, rubber or leather) when handling the product over long periods.

Eyes
Use appropriate safety eye wear depending on the task being carried out. Wear safety glasses with side protection or safety goggles, (EN166).

Environmental exposure controls
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

Appearance	Solid, off-white, yellow/brown transluscent coloured granules unless deliberately coloured during manufacture.
Odour	Odourless.

	Odour threshold	Not applicable
	pH	5 to 6, (5% w/w).
	Melting point/freezing point	Decomposes at 235°C
	Initial boiling point and boiling range	Decomposes at 235°C
	Flash point	Not applicable.
	Flammability (solid, gas)	No information available.
	Upper/lower flammability or explosive limits	No information available.
	Explosive properties	No information available.
	Auto-ignition temperature	No information available.
	Decomposition temperature	Decomposes at 235°C
	Minimum ignition energy	Not applicable
	Oxidising properties	Not classified as an oxidizer.
	Critical temperature	Not applicable
	Relative density	1.78, (water = 1).
	Density	Not determined.
	Loose bulk density	1000 - 1060kg/m3
	Vapour pressure at 20°C	Not applicable
	Vapour density	Not applicable
	Partition coefficient (n-octanol/water)	-5.1
	Viscosity	Not applicable
	Mean particle size	2-4mm
	Water solubility	7.6 g/l. Hygroscopic; readily picks up moisture from the air.
	Surface tension	No information available.
	Other information	
	Miscibility	Not applicable
	Fat solubility	Not available
	Gas group	Not applicable
	Remarks	No further relevant information available.

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 235°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, 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. Nitrogen oxides,(NO_x), ammonia, sulphur oxides and amines) 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 sulphate.	LD50: 2840 mg/kg, rat.
	Acute oral toxicity	Ammonium sulphate.	LD50: 4540 mg/kg, rat.
	Acute oral toxicity	Ammonium sulphate.	LD50: 640 mg/kg, mouse.
	Acute oral toxicity	Ammonium sulphate.	LDLO: 3500 mg/kg, domestic animals.
	Acute dermal toxicity	Ammonium sulphate.	LD50: >2000 mg/kg, rat.
	Acute inhalation toxicity	Ammonium sulphate.	>1000 mg/m3, (8 hours TWA), rat.
	Local effects		
	Skin irritation	Product; Ammonium sulphate.	Non irritating, (rabbit, OECD 404).
	Eye irritation	Product; Ammonium sulphate.	Non-irritating. Dust contact with the eyes can lead to mechanical irritation.
	Sensitisation	Did not cause sensitization on laboratory animals, (guinea pig).	
	Other	For main ingredient..	
	Sub-acute toxicity	Oral 52-week NOAEL = 256 mg/kg bw/day (OECD 453, with ammonium sulphate)	
		Specific Target Organ Toxicity - Single exposure; No known effect. Repeated exposure; No known effect.	
		Aspiration hazard; No known effect.	
	Mutagenicity	Not known to cause heritable genetic damage, (OECD 471, OECD 476, OECD 473).	
	Reproductive toxicity	Not known to adversely affect reproductive functions and organs. Not known to cause birth defects or have a deleterious effect on a developing fetus.	
	Carcinogenicity	Contains no ingredient listed as a carcinogen, (OECD 453: Negative).	
	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**	Contains no substances known to be hazardous to the environment.	
	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.
12.2	**Persistence and degradability**	**Ingredient name**	Ammonium Sulphate
	Biodegradation	Standard test is not applicable as the mixture is inorganic.	
	Hydrolysis	Not applicable.	
12.3	**Bioaccumulative potential**	Octanol-water partition coefficient (Kow)	Not relevant as the mixture is inorganic, but considered to be low (based on high water solubility) log Pow; -5.1
		Bioconcentration factor (BCF)	Low potential for bioaccumulation (based on main ingredient properties).
12.4	**Mobility in soil**	Ammonium Sulphate; easily soluble in cold water.	
12.5	**Results of PBT and vPvB assessment**	Ammonium Sulphate is not considered to be PBT or vPvB.	
12.6	**Other adverse effects**	Heavy spillage may cause adverse environmental impact such as eutrophication in confined surface waters.	

13.0	**Disposal considerations**	
	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**	Not classifed				
14.2	**UN Proper shipping name**	Not applicable.	Not applicable.	Not applicable.	Not applicable.	
14.3	**Transport hazard class(es)**	Not classifed				
14.4	**Packing group**	Not applicable.				
	Label	Not applicable.				
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 the main ingredient Ammonium Sulphate 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.	
	Classification in accordance with Regulation 1272/2008, as listed in Annex VI:	None.
	Classification in accordance with Regulation 1272/2008, by self-classification based on the performed CSA	Not classified.

Risk phrases	None.
Symbols	None.
Abbreviations and acronyms	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.
Training advice	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.
Date of previous SDS	08/07/2010
Modifications in this version	
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 Origin Fertilisers for the consequences of its use or misuse in any particular circumstances.