



SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name or designation of the mixture	UAN_NS
Registration number	-
Synonyms	UAN SO3, 26.5-0-0-20, 27-0-0-5, 22-0-0-13, Urea ammonium nitrate and sulfur solution
SDS Number	JHB_UAN22PCT+12SO3_EU_EN
Issue date	30-January-2014
Version number	01
Revision date	-
Supersedes date	-

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

Identified uses	Fertiliser
Uses advised against	Use in accordance with supplier's recommendations.

1.3. Details of the supplier of the safety data sheet

Supplier

Company name	Bunn Fertiliser Ltd.
Address	Lakeside 500, 1st Floor Old Chapel Way, Broadland Business Park Norwich, NR7 0WG UK
Telephone	(0845) 1662222
e-mail	info@bunnfertiliser.com
Contact person	Not available.

1.4. Emergency telephone number

For Chemical Emergency
Call CHEMTREC day or night
UK +44 (0)870 8200418
USA/Canada +1.800.424.9300
Outside USA/Canada
+1.703.527.3887
(collect calls accepted)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

Classification Xi;R36

The full text for all R-phrases is displayed in Section 16.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

Serious eye damage/eye irritation	Category 2	H319 - Causes serious eye irritation.
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Hazard summary

Physical hazards	Not classified for physical hazards.
Health hazards	Irritating to eyes.
Environmental hazards	Not classified for hazards to the environment.
Specific hazards	Accidental ingestion of urea fertilizer caused nausea, persistent violent vomiting, excitement and convulsions. Complete recovery was observed within a few days. However, ingestion is not likely to be a primary route of occupational exposure.
Main symptoms	Symptoms can include irritation, redness, scratching of the cornea, and tearing.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Hazard pictograms**Signal word**

Warning

Hazard statements

H319 - Causes serious eye irritation.

Precautionary statements**Prevention**

P280 - Wear eye/face protection.
 P264 - Wash hands thoroughly after handling.

Response

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.

Storage

Store away from incompatible materials.

Disposal

P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information

None.

2.3. Other hazards

Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****General information**

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Ammonium nitrate	25 - 40	6484-52-2 229-347-8	01-2119490981-27-0020	-	
Classification:	DSD: O;R8, Xi;R36				
	CLP: Ox. Sol. 3;H272, Eye Irrit. 2;H319				
Urea	15 - 40	57-13-6 200-315-5	01-2119463277-33-0044	-	
Classification:	DSD: -				
	CLP: -				
Ammonium thiosulphate	10 - 35	7783-18-8 231-982-0	-	-	
Classification:	DSD: -				
	CLP: -				
Water	10 - 25	7732-18-5 231-791-2	-	-	
Classification:	DSD: -				
	CLP: -				
Ammonium sulphate	5 - 10	7783-20-2 231-984-1	01-2119455044-46-XXXX	-	
Classification:	DSD: -				
	CLP: -				
free Ammonia	< 0.1	7664-41-7 231-635-3	-	007-001-00-5	#
Classification:	DSD: R10, T;R23, C;R34, N;R50				
	CLP: Flam. Gas 2;H221, Skin Corr. 1B;H314, Acute Tox. 3;H331, Aquatic Acute 1;H400				U

#: This substance has been assigned Community workplace exposure limit(s).

DSD: Directive 67/548/EEC.

CLP: Regulation No. 1272/2008.

Composition comments The full text for all R- and H-phrases is displayed in section 16. All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. This Safety Data Sheet is not a guarantee of product specification or NPK value(s). NPK content is on specified sales orders, customer invoices, or product specification sheets obtained from supplier.

SECTION 4: First aid measures

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation Move to fresh air. Get medical attention if any discomfort continues.

Skin contact Wash contact areas with soap and water. Get medical attention if irritation develops and persists.

Eye contact Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation persists after washing.

Ingestion Rinse mouth thoroughly. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed Symptoms can include irritation, redness, scratching of the cornea, and tearing.

4.3. Indication of any immediate medical attention and special treatment needed Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards The product is not flammable.

5.1. Extinguishing media

Suitable extinguishing media Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media None known.

5.2. Special hazards arising from the substance or mixture Slight fire hazard. When water evaporates from this product residues may contain ammonium nitrate, and solid ammonium nitrate when sensitized during decomposition may become unstable and explosive.

5.3. Advice for firefighters

Special protective equipment for firefighters Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Move containers from fire area if you can do it without risk.

Special fire fighting procedures Move containers from fire area if you can do it without risk.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Avoid inhalation of vapours/spray and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing. Use personal protection recommended in Section 8 of the SDS.

For emergency responders Use personal protection as recommended in section 8 of the SDS.

6.2. Environmental precautions Prevent further leakage or spillage if safe to do so. Do not allow to enter drains, sewers or watercourses.

6.3. Methods and material for containment and cleaning up Stop the flow of material, if this is without risk. Absorb spillage with suitable absorbent material. After removal flush contaminated area thoroughly with water.

Never return spills to original containers for re-use.

6.4. Reference to other sections For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Avoid inhalation of vapours/spray and contact with skin and eyes. Wear approved safety goggles. Use only with adequate ventilation. Keep the workplace clean.

7.2. Conditions for safe storage, including any incompatibilities Store in a well-ventilated place. Store in a cool, dry place. Keep container tightly closed. Store away from incompatible materials.

7.3. Specific end use(s) Fertiliser

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

UK. EH40 Workplace Exposure Limits (WELs)

Constituents	Type	Value
Ammonia (CAS 7664-41-7)	STEL	25 mg/m ³
		35 ppm
	TWA	18 mg/m ³
		25 ppm

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

Constituents	Type	Value
Ammonia (CAS 7664-41-7)	STEL	36 mg/m ³
		50 ppm
	TWA	14 mg/m ³
		20 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no-effect level (DNEL)

Components	Type	Route	Value	Form
Ammonium nitrate (CAS 6484-52-2)	Workers	Dermal	21.3 mg/kg/day	Long-term - systemic effects
		Inhalation	37.6 mg/m ³	Long-term - systemic effects
Ammonium sulphate (CAS 7783-20-2)	Workers	Dermal	42.667 mg/kg/day	Long term exposure systemic effects
		Inhalation	11.167 mg/m ³	Long term exposure systemic effects
Urea (CAS 57-13-6)	Workers	Dermal	580 mg/kg/day	Long-term - systemic effects
		Inhalation	292 mg/m ³	Long-term - systemic effects

Predicted no effect concentrations (PNECs)

Components	Type	Route	Value	Form
Ammonium nitrate (CAS 6484-52-2)	Aqua (freshwater)	Water	0.45 mg/l	
	Aqua (intermittent releases)	Not applicable	4.5 mg/l	
	Aqua (marine water)	Water	0.045 mg/l	
	Sewage Treatment Plant	Not applicable	18 mg/l	
Ammonium sulphate (CAS 7783-20-2)	Aqua (freshwater)	Water	0.312 mg/l	
	Aqua (intermittent releases)	Water	0.53 mg/l	
	Aqua (marine water)	Water	0.0312 mg/l	
	Sediment (freshwater)	Water	0.063 mg/kg	
Urea (CAS 57-13-6)	Sewage Treatment Plant	Not applicable	16.18 mg/l	
	Soil	Soil	62.6 mg/kg	
	Aqua (freshwater)	Not applicable	0.047 mg/l	
	Aqua (marine water)	Not applicable	0.047 mg/l	

8.2. Exposure controls

Appropriate engineering controls Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of vapours.

Individual protection measures, such as personal protective equipment

General information Use personal protective equipment as required. Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Wear approved safety glasses or goggles.

Skin protection

- Hand protection Risk of contact: Wear protective gloves. Suitable gloves can be recommended by the glove supplier.

- Other	Risk of contact: Wear appropriate clothing to prevent any possibility of skin contact.
Respiratory protection	In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment. Seek advice from local supervisor.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
Hygiene measures	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Handle in accordance with good industrial hygiene and safety practices.
Environmental exposure controls	Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Colourless liquid.
Physical state	Liquid.
Form	Liquid.
Colour	Colourless.
Odour	Slight ammonia.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not applicable.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Explosive properties	Not available.
Oxidizing properties	Not available.

9.2. Other information No relevant additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity	Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.
10.2. Chemical stability	Stable under normal temperature conditions and recommended use.
10.3. Possibility of hazardous reactions	Hazardous polymerisation does not occur.
10.4. Conditions to avoid	Contact with incompatible materials. Heat, sparks, flames, elevated temperatures. UAN will form urea nitrate when mixed with nitric acid at low pH. Urea nitrate may become unstable and/or explosive under certain conditions.
10.5. Incompatible materials	Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.
10.6. Hazardous decomposition products	Carbon oxides. Nitrogen oxides (NOx). Ammonia. Biuret. Cyanide compounds.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Ingestion May cause discomfort if swallowed.
Inhalation May cause respiratory irritation.
Skin contact May cause skin irritation.
Eye contact Causes serious eye irritation.

Symptoms Symptoms can include irritation, redness, scratching of the cornea, and tearing.

11.1. Information on toxicological effects

Acute toxicity Ingestion may cause irritation and malaise.

Components	Species	Test results
Ammonium nitrate (CAS 6484-52-2)		
Acute		
<i>Inhalation</i>		
LC50	Rat	> 88.8 mg/l, 4 Hours
<i>Oral</i>		
LD50	Rat	4500 mg/kg
Ammonium sulphate (CAS 7783-20-2)		
Acute		
<i>Inhalation</i>		
LC50	Rat	> 1000 mg/m3, 8 hours
<i>Oral</i>		
LD50	Rat	2840 mg/kg
Urea (CAS 57-13-6)		
Acute		
<i>Oral</i>		
LD50	Rat	14300 mg/kg
Constituents	Species	Test results
Ammonia (CAS 7664-41-7)		
Acute		
<i>Inhalation</i>		
LC50	Rat	5.1 mg/l, 1 Hours
<i>Oral</i>		
LD50	Rat	350 mg/kg, as Ammonium hydroxide
Skin corrosion/irritation	May cause skin irritation.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory sensitisation	No data available.	
Skin sensitisation	Not a skin sensitiser.	
Germ cell mutagenicity	No data available.	
Carcinogenicity	No data available.	
Reproductive toxicity	No data available.	
Specific target organ toxicity - single exposure	No data available.	
Specific target organ toxicity - repeated exposure	No data available.	
Aspiration hazard	No data available.	
Mixture versus substance information	Not available.	
Other information	No other specific acute or chronic health impact noted.	

SECTION 12: Ecological information

12.1. Toxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species		Test results
Ammonium sulphate (CAS 7783-20-2)			
Fish	LC50	Salmo gairdneri	173 mg/l, 96 hours
Aquatic			
Algae	EC50	Chlorella vulgaris	2700 mg/l, 18 days
Crustacea	EC50	Water flea (Daphnia magna)	> 100 mg/l, 96 hours
Urea (CAS 57-13-6)			
Aquatic			
Fish	LC50	Leuciscus idus	> 6810 mg/l, 96 hours
Constituents	Species		Test results

Ammonia (CAS 7664-41-7)			
Aquatic			
Fish	LC50	Chinook salmon (Oncorhynchus tshawytscha)	0.43 - 0.47 mg/l, 96 hours

12.2. Persistence and degradability No data available.

12.3. Bioaccumulative potential No data available.

Partition coefficient n-octanol/water (log Kow)

Urea (CAS 57-13-6) -2.11

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil The product is water soluble and may spread in water systems.

12.5. Results of PBT and vPvB assessment Not a PBT or vPvB substance or mixture.

assessment

12.6. Other adverse effects No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste Dispose in accordance with all applicable regulations.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied.

EU waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

Not regulated as dangerous goods.

RID

Not regulated as dangerous goods.

ADN

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

14.7. Transport in bulk This substance/mixture is not intended to be transported in bulk.

according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I

Not listed.

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(1) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Ammonium nitrate (CAS 6484-52-2)

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work

Not listed.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding

Not listed.

Other EU regulations

Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances

Not listed.

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Ammonia (CAS 7664-41-7)

Directive 94/33/EC on the protection of young people at work

Ammonia (CAS 7664-41-7)

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended and respective national laws implementing EC directives. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

National regulations

The product has been classified according to the legislation in force.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

DNEL: Derived No-Effect Level.
PNEC: Predicted No-Effect Concentration.
PBT: Persistent, bioaccumulative and toxic.
vPvB: Very Persistent and very Bioaccumulative.
LD50: Lethal Dose, 50%.
LC50: Lethal Concentration, 50%.

References

ECHA CHEM

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15

R8 Contact with combustible material may cause fire.
R10 Flammable.
R23 Toxic by inhalation.
R34 Causes burns.
R36 Irritating to eyes.
R50 Very toxic to aquatic organisms.
H221 Flammable gas.
H272 May intensify fire; oxidiser.
H314 Causes severe skin burns and eye damage.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H400 Very toxic to aquatic life.

Training information

Follow training instructions when handling this material.

Disclaimer

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet (SDS) and was prepared pursuant to Government regulation(s) that identify specific types of information to be provided. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided herein with respect to any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. No responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product. Purchasers and users assume all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Purchasers and users of the product specifically should advise all of their employees, agents, contractors and customers who will use the product of this (M)SDS.