

SAFETY DATA SHEET
AMMONIA SOLUTION AR 0.91 S.G.
 According to Regulation (EC) No 1907/2006, Annex II

SECTION 1: Identification of the substance/mixture and of the company/undertaking
1.1. Product identifier

Product name	AMMONIA SOLUTION AR 0.91 S.G.
Product number	1198
REACH registration number	01-2119488878-14-XXXX
CAS number	1336-21-6
EC number	215-647-6

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

Identified uses	Laboratory chemicals General chemical reagent
Uses advised against	Processes that would lead to over-exposure of the operators. Processes involving incompatible materials.

1.3. Details of the supplier of the safety data sheet

Supplier	Reagent Chemical Services 18 Aston Fields Road Whitehouse Industrial Estate Runcorn Cheshire WA7 3DL T: 01928 716903 (08.30 - 17.00) F: 01928 716425 E: info@reagent.co.uk
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1.4. Emergency telephone number

Emergency telephone	OHES Environmental Ltd 24-7 Tel. 0333 333 9939 (24 hour)
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SECTION 2: Hazards identification
2.1. Classification of the substance or mixture
Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Skin Corr. 1B - H314 STOT SE 3 - H335 Eye Dam. 1 - H318
Environmental hazards	Aquatic Acute 1 - H400

Classification (67/548/EEC or 1999/45/EC) C;R34. N;R50.

2.2. Label elements

EC number	215-647-6
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AMMONIA SOLUTION AR 0.91 S.G.**Pictogram****Signal word**

Danger

Hazard statements

H314 Causes severe skin burns and eye damage.
 H335 May cause respiratory irritation.
 H400 Very toxic to aquatic life.

Precautionary statements

P273 Avoid release to the environment.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 P302+P352 IF ON SKIN: Wash with plenty 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.
 P310 Immediately call a POISON CENTER/ doctor.
 P501 Dispose of contents / container to hazardous waste depot.

Contains

AMMONIA 25%

Supplementary precautionary statements

P260 Do not breathe vapour/ spray.
 P261 Avoid breathing vapour/spray.
 P264 Wash contaminated skin thoroughly after handling.
 P271 Use only outdoors or in a well-ventilated area.
 P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P312 Call a POISON CENTER/ doctor if you feel unwell.
 P321 Specific treatment (see medical advice on this label).
 P363 Wash contaminated clothing before reuse.
 P391 Collect spillage.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

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

AMMONIA ...%	10-30%
CAS number: 1336-21-6	EC number: 215-647-6
M factor (Acute) = 1	
Classification	Classification (67/548/EEC or 1999/45/EC)
Skin Corr. 1B - H314	C;R34 N;R50
Eye Dam. 1 - H318	
STOT SE 3 - H335	
Aquatic Acute 1 - H400	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures**4.1. Description of first aid measures**

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General information	Get medical attention immediately. Show this Safety Data Sheet to the medical personnel. Chemical burns must be treated by a physician.
Inhalation	Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.
Ingestion	Rinse mouth thoroughly with water. Remove any dentures. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.
Skin contact	It is important to remove the substance from the skin immediately. Take off immediately all contaminated clothing. Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes and get medical attention. Chemical burns must be treated by a physician.
Eye contact	Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Continue to rinse for at least 10 minutes.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue. If it is suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

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

General information	See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	A single exposure may cause the following adverse effects: Severe irritation of nose and throat. Symptoms following overexposure may include the following: Corrosive to the respiratory tract.
Ingestion	May cause chemical burns in mouth, oesophagus and stomach. Symptoms following overexposure may include the following: Severe stomach pain. Nausea, vomiting.
Skin contact	Causes severe burns. Symptoms following overexposure may include the following: Pain or irritation. Redness. Blistering may occur.
Eye contact	Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

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

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

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5.2. Special hazards arising from the substance or mixture

Specific hazards Containers can burst violently or explode when heated, due to excessive pressure build-up. Severe corrosive hazard. Water used for fire extinguishing, which has been in contact with the product, may be corrosive.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Very toxic or corrosive gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapours. Evacuate area. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters Regular protection may not be safe. Wear chemical protective suit. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Provide adequate ventilation. Avoid inhalation of vapours and spray/mists. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes. Avoid contact with contaminated tools and objects.

6.2. Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. This product is corrosive. Approach the spillage from upwind. Small Spillages: If the product is soluble in water, dilute the spillage with water and mop it up. Alternatively, or if it is not water-soluble, absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. Large Spillages: If leakage cannot be stopped, evacuate area. Flush spilled material into an effluent treatment plant, or proceed as follows. Contain and absorb spillage with sand, earth or other non-combustible material. Place waste in labelled, sealed containers. Clean contaminated objects and areas thoroughly, observing environmental regulations. The contaminated absorbent may pose the same hazard as the spilled material. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. Do not empty into drains. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

6.4. Reference to other sections

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Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists. This product is corrosive. Immediate first aid is imperative. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store away from incompatible materials (see Section 10). Store in accordance with local regulations. Store away from the following materials: Acids. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Bund storage facilities to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent.

Storage class Corrosive storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

AMMONIA ...%

Long-term exposure limit (8-hour TWA): WEL 25 ppm 18 mg/m³

Short-term exposure limit (15-minute): WEL 35 ppm 25 mg/m³

WEL = Workplace Exposure Limit

Ingredient comments The following information refers to anhydrous ammonia.

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DNEL

Workers - Inhalation; Long term systemic effects: 47.6 mg/m³
 Workers - Inhalation; Short term systemic effects: 47.6 mg/m³
 Workers - Inhalation; Long term local effects: 14 mg/m³
 Workers - Inhalation; Short term local effects: 36 mg/m³
 Workers - Dermal; Long term systemic effects: 6.8 mg/kg/day
 Workers - Dermal; Short term systemic effects: 6.8 mg/kg/day
 General population - Inhalation; Long term systemic effects: 23.8 mg/m³
 General population - Inhalation; Short term systemic effects: 23.8 mg/m³
 General population - Inhalation; Long term local effects: 2.8 mg/m³
 General population - Inhalation; Short term local effects: 7.2 mg/m³
 General population - Dermal; Long term systemic effects: 68 mg/kg/day
 General population - Dermal; Short term systemic effects: 68 mg/kg/day
 General population - Oral; Long term systemic effects: 6.8 mg/kg/day
 General population - Oral; Short term systemic effects: 6.8 mg/kg/day

PNEC

- Fresh water; 0.001 mg/l
 - Marine water; 0.001 mg/l

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimise exposure.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. Wear tight-fitting, chemical splash goggles or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

Other skin and body protection

Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

Hygiene measures

Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Preventive industrial medical examinations should be carried out. Warn cleaning personnel of any hazardous properties of the product.

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Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.
Environmental exposure controls	Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. Store in a demarcated bunded area to prevent release to drains and/or watercourses.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Clear liquid. Colourless.
Odour	Strong. Ammonia.
Odour threshold	Detectable by most people at 5ppm.
pH	pH (concentrated solution): 14
Melting point	Below -70°C 28% w/w is quoted as being -69.2°C.
Initial boiling point and range	30% solution has a quoted boiling point of 36°C. °C @
Flash point	Not applicable. Aqueous solutions of ammonia do not show a flash point.
Evaporation rate	Not available. No supplied or registered information.
Upper/lower flammability or explosive limits	Upper flammable/explosive limit: 25 (Anhydrous ammonia) Lower flammable/explosive limit: 16 (Anhydrous ammonia)
Other flammability	Not determined.
Vapour pressure	118 mm Hg @ °C
Relative density	0.88-0.91 @ °C Will vary dependent upon the ammonia concentration.
Bulk density	Not applicable. Only applicable to solids.
Solubility(ies)	Miscible with water.
Partition coefficient	Technically not feasible.
Auto-ignition temperature	651°C (Anhydrous ammonia)°C
Decomposition Temperature	Not available. No supplied or registered information.
Viscosity	1.1 mPa s @ 26.7°C 26% w/w ammonia solution
Explosive properties	Not explosive
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information	None.
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SECTION 10: Stability and reactivity

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10.1. Reactivity

Reactivity The following materials may react violently with the product: Acids. Chemically-active metals.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions May generate heat. Reactions with the following materials may cause explosions: Mercury and silver compounds.

10.4. Conditions to avoid

Conditions to avoid Avoid heat. Containers can burst violently or explode when heated, due to excessive pressure build-up. Avoid freezing. Avoid contact with any incompatible materials.

10.5. Incompatible materials

Materials to avoid Acids. Oxidising agents. Chlorites Silver compounds. Halogens Perchlorate Iodine. Bromine Gold Copper and zinc.

10.6. Hazardous decomposition products

Hazardous decomposition products Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Toxic and corrosive gases or vapours. Oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects The mixture has not been tested for toxicological properties.

Acute toxicity - oral

Notes (oral LD₅₀) Based on available data the classification criteria are not met. LD₅₀ 350 mg/kg, Oral, Rat Refers to aqueous ammonia solution, concentration not specified.

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met. LC₅₀ 9850 mg/m³, Inhalation, Rat 60 minute exposure Atmospheric ammonia.

Skin corrosion/irritation

Animal data Skin Corr. 1B - H314 Causes severe burns.

Serious eye damage/irritation

Serious eye damage/irritation Eye Dam. 1 - H318 Corrosive to skin. Corrosivity to eyes is assumed.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Genotoxicity - in vivo Based on available data the classification criteria are not met.

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Carcinogenicity

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

IARC carcinogenicity None of the ingredients are listed or exempt.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Reproductive toxicity - development Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure STOT SE 3 - H335 May cause respiratory irritation.

Target organs Respiratory system, lungs

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

General information

The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation

Irritation of the respiratory system. Coughing and difficulties in breathing. Vapours or mists in high concentration may cause damage to mucous membranes. May cause pulmonary oedema.

Ingestion

May cause chemical burns in mouth, oesophagus and stomach. Symptoms following overexposure may include the following: Severe stomach pain. Nausea, vomiting.

Skin contact

Causes severe burns. Symptoms following overexposure may include the following: Pain or irritation. Redness. Blistering may occur.

Eye contact

Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

Route of entry

Ingestion Inhalation Skin and/or eye contact

Target organs

Respiratory system, lungs

SECTION 12: Ecological Information

12.1. Toxicity

Toxicity Aquatic Acute 1 - H400 Very toxic to aquatic life.

Acute toxicity - fish

LC50, 96 hours: 34-109 mg/l, Pimephales promelas (Fat-head Minnow)
Based on total ammonia nitrogen.
Ammonium Chloride

Acute toxicity - aquatic invertebrates

LC₅₀, 48 hours: 101 mg/l, Daphnia magna
Aqueous ammonia solutions.
Ammonium chloride

Acute toxicity - aquatic plants

EC₅₀, 18 days: 2700 mg/l, Freshwater algae
18 day exposure to ammonium sulphate, chlorella vulgaris.

Acute toxicity - microorganisms

Scientifically unjustified.

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Acute toxicity - terrestrial	Scientifically unjustified.
Chronic toxicity - fish early life stage	LOEC, 73 days: 0.022 mg/l, Onchorhynchus mykiss (Rainbow trout)
Chronic toxicity - aquatic invertebrates	LOEC, 21 days: 1.3 mg/l from ammonium chloride. , Daphnia magna
Toxicity to soil	Scientifically unjustified.

12.2. Persistence and degradability

Persistence and degradability	The product contains inorganic substances which are not biodegradable.
Phototransformation	No information available.
Stability (hydrolysis)	Scientifically unjustified.
Biodegradation	Scientifically unjustified.
Biological oxygen demand	Not available.
Chemical oxygen demand	Not available.

12.3. Bioaccumulative potential

Bioaccumulative potential	Scientifically unjustified.
Partition coefficient	Technically not feasible.

12.4. Mobility in soil

Mobility	The product is water-soluble and may spread in water systems. Readily adsorbed into soil.
Adsorption/desorption coefficient	Not available.
Henry's law constant	0.000016 atm m ³ /mol @ @ 25°C Based on ammonia.
Surface tension	65.25 mN/m @ 19.4°C Based on 17.37% volume aqueous ammonia.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	This substance is not classified as PBT or vPvB according to current EU criteria.
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12.6. Other adverse effects

Other adverse effects	None known.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information	The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.
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Disposal methods Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 14: Transport information

General For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.

14.1. UN number

UN No. (ADR/RID) 2672

UN No. (IMDG) 2672

UN No. (ICAO) 2672

14.2. UN proper shipping name

Proper shipping name (ADR/RID) AMMONIA SOLUTION

Proper shipping name (IMDG) AMMONIA SOLUTION

Proper shipping name (ICAO) AMMONIA SOLUTION

Proper shipping name (ADN) AMMONIA SOLUTION

14.3. Transport hazard class(es)

ADR/RID class 8

ADR/RID label 8

IMDG class 8

ICAO class/division 8

Transport labels



14.4. Packing group

ADR/RID packing group III

IMDG packing group III

ICAO packing group III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



14.6. Special precautions for user

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

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EmS	F-A, S-B
Emergency Action Code	2R
Hazard Identification Number (ADR/RID)	80
Tunnel restriction code	(E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable. For packages of supplied material.

SECTION 15: Regulatory information

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

National regulations	Health and Safety at Work etc. Act 1974 (as amended). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.
EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
Guidance	ECHA Guidance on the Compilation of Safety Datasheets

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

None of the ingredients are listed or exempt.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail. IATA: International Air Transport Association. ICAO-TI: Technical Instructions for the Safe Transport of Dangerous Goods by Air. IMDG: International Maritime Dangerous Goods. CAS: Chemical Abstracts Service. ATE: Acute Toxicity Estimate. LC ₅₀ : Lethal Concentration to 50 % of a test population. LD ₅₀ : Lethal Dose to 50% of a test population (Median Lethal Dose). EC ₅₀ : 50% of maximal Effective Concentration. PBT: Persistent, Bioaccumulative and Toxic substance. vPvB: Very Persistent and Very Bioaccumulative.
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Classification abbreviations and acronyms	Eye Dam. = Serious eye damage Skin Corr. = Skin corrosion STOT SE = Specific target organ toxicity-single exposure Aquatic Acute = Hazardous to the aquatic environment (acute)
General information	Under REACH Material Safety Datasheets (MSDS) are referred to as Safety Datasheets (SDS). This datasheet is not intended to be a replacement for a full risk assessment, these should always be carried out by competent persons.
Key literature references and sources for data	Source: European Chemicals Agency, http://echa.europa.eu/
Classification procedures according to Regulation (EC) 1272/2008	Eye Dam. 1 - H318: Skin Corr. 1B - H314: STOT SE 3 - H335: : Calculation method. Aquatic Acute 1 - H400: : Calculation method.
Training advice	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
Revision comments	General rewrite
Revision date	10/07/2017
Revision	4
Supersedes date	12/06/2013
SDS number	11090
SDS status	Approved.
Risk phrases in full	R34 Causes burns. R37 Irritating to respiratory system. R50 Very toxic to aquatic organisms.
Hazard statements in full	H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H335 May cause respiratory irritation. H400 Very toxic to aquatic life.

This 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 process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.