

SAFETY DATA SHEET

AMMONIA BUFFER SOLUTION

According to Regulation (EC) No 1907/2006, Annex II, as amended. Commission Regulation (EU) No 2015/830 of 28 May 2015.

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

1.1. Product identifier

Product name	AMMONIA BUFFER SOLUTION
Product number	1004
REACH registration notes	All the ingredients are listed or exempt.

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

Identified uses	Laboratory reagent.
Uses advised against	No specific uses advised against are identified. Use only for intended applications.

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

1.4. Emergency telephone number

Emergency telephone	OHES Environmental Ltd 24-7 Tel. 0333 333 9939 (24 hour)
----------------------------	---

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 Eye Dam. 1 - H318 STOT SE 3 - H335
Environmental hazards	Not Classified

2.2. Label elements

Pictogram



Signal word	Danger
--------------------	--------

AMMONIA BUFFER SOLUTION

Hazard statements	H314 Causes severe skin burns and eye damage. H335 May cause respiratory irritation.
Precautionary statements	P260 Do not breathe vapour/ spray. P264 Wash contaminated skin thoroughly after handling. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. 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 in accordance with local regulations.
Contains	AMMONIA ...%
Supplementary precautionary statements	P271 Use only outdoors or in a well-ventilated area. P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P321 Specific treatment (see medical advice on this label). 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
	REACH registration number: 01-2119982985-14-0000
M factor (Acute) = 1	
Classification	
Skin Corr. 1B - H314	
Eye Dam. 1 - H318	
STOT SE 3 - H335	
Aquatic Acute 1 - H400	
AMMONIUM CHLORIDE	5-10%
CAS number: 12125-02-9	REACH registration number: 01-2119489385-24-0000
Classification	
Acute Tox. 4 - H302	
Eye Irrit. 2 - H319	

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

General information Show this Safety Data Sheet to the medical personnel.

AMMONIA BUFFER SOLUTION

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. Get medical attention if any discomfort continues.
Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth thoroughly with water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention immediately.
Skin contact	Remove contaminated clothing and rinse skin thoroughly with water. Continue to rinse for at least 15 minutes. Get medical attention immediately.
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 15 minutes. Get medical attention immediately.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue.

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

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Vapours irritate the respiratory system. May cause coughing and difficulties in breathing.
Ingestion	May cause chemical burns in mouth, oesophagus and stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
Skin contact	Causes severe burns. Severe skin irritation. Redness. Itchiness.
Eye contact	Causes burns. Risk of serious damage to eyes. Corneal damage. Profuse watering of the eyes.

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

Notes for the doctor	Treat symptomatically.
Specific treatments	No specific chemical antidote is known to be required after exposure to this product.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	The product is not flammable. 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.

5.2. Special hazards arising from the substance or mixture

Specific hazards	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: Ammonia or amines. Hydrogen chloride (HCl).

5.3. Advice for firefighters

Protective actions during firefighting	Fight fire from safe distance or protected location. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Control run-off water by containing and keeping it out of sewers and watercourses.
Special protective equipment for firefighters	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.

AMMONIA BUFFER SOLUTION

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Wash thoroughly after dealing with a spillage.

For emergency responders Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Small Spillages: Wipe up with an absorbent cloth and dispose of waste safely. Large Spillages: Absorb in vermiculite, dry sand or earth and place into containers. Place waste in labelled, sealed containers. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Wash thoroughly after dealing with a spillage.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Do not handle until all safety precautions have been read and understood. Wear protective clothing as described in Section 8 of this safety data sheet. Provide adequate ventilation. Handle all packages and containers carefully to minimise spills. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene Good personal hygiene procedures should be implemented. Do not eat, drink or smoke when using this product. Take off immediately all contaminated clothing and wash it before reuse. Change work clothing daily before leaving workplace. Contaminated clothing should be placed in a closed container for disposal or decontamination.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Keep only in the original container in a cool, well-ventilated place. Protect from freezing and direct sunlight. Keep away from heat. Store away from the following materials: Acids. Oxidising materials.

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

AMMONIUM CHLORIDE

Long-term exposure limit (8-hour TWA): WEL 10 mg/m³

Short-term exposure limit (15-minute): WEL 20 mg/m³

WEL = Workplace Exposure Limit

AMMONIA BUFFER SOLUTION

AMMONIA ...% (CAS: 1336-21-6)

Ingredient comments	The DNEL and PNEC values are taken from the ECHA Registration Dossier for anhydrous ammonia.
DNEL	Workers - Inhalation; Long term systemic effects: 47.6 mg/m ³ Workers - Inhalation; Short term systemic effects: 47.6 mg/m ³ Workers - Inhalation; Long term local effects: 14 mg/m ³ Workers - Inhalation; Short term local effects: 36 mg/m ³ 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/m ³ General population - Inhalation; Short term systemic effects: 23.8 mg/m ³ General population - Inhalation; Long term local effects: 2.8 mg/m ³ General population - Inhalation; Short term local effects: 7.2 mg/m ³ 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

AMMONIUM CHLORIDE (CAS: 12125-02-9)

DNEL	Workers - Inhalation; Long term systemic effects: 33.5 mg/m ³ Workers - Dermal; Long term systemic effects: 190 mg/kg/day General population - Inhalation; Long term systemic effects: 9.9 mg/m ³ General population - Dermal; Long term systemic effects: 114 mg/kg/day General population - Oral; Long term systemic effects: 11.4 mg/kg/day
PNEC	- Fresh water; 1.2 mg/l - Marine water; 11.2 mg/l - STP; 16.2 mg/l - Soil; 0.163 mg/kg

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Avoid inhalation of vapours.

Eye/face protection

Wear tight-fitting, chemical splash goggles or face shield. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection

Wear protective gloves. 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. The breakthrough time for any glove material may be different for different glove manufacturers. To protect hands from chemicals, gloves should comply with European Standard EN374. For exposure up to 8 hours, wear gloves made of the following material: Nitrile rubber. Viton rubber (fluoro rubber). Thickness: ~ 0.6 mm Frequent changes are recommended.

AMMONIA BUFFER SOLUTION

Other skin and body protection	Wear apron or protective clothing in case of contact.
Hygiene measures	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. Wash hands thoroughly after handling. Promptly remove any clothing that becomes wet or contaminated. Wash promptly if skin becomes contaminated. Contaminated clothing should be placed in a closed container for disposal or decontamination. Warn cleaning personnel of any hazardous properties of the product.
Respiratory protection	Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit. Wear a respirator fitted with the following cartridge: Organic vapour + dust and mist filter. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140. Check that the respirator fits tightly and the filter is changed regularly. Change filter cartridge on respirator daily.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	Ammonia.
Odour threshold	Not determined.
pH	pH (concentrated solution): 10
Melting point	Not applicable.
Initial boiling point and range	Not determined.
Flash point	Scientifically unjustified. Not determined.
Evaporation rate	Not determined.
Flammability (solid, gas)	Technical impossibility to obtain the data.
Upper/lower flammability or explosive limits	Not applicable.
Vapour density	Not determined.
Solubility(ies)	Miscible with water.
Partition coefficient	No specific test data are available.
Decomposition Temperature	Not determined.
Viscosity	No specific test data are available.
Explosive properties	There are no chemical groups present in the product that are associated with explosive properties.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information	None.
--------------------------	-------

SECTION 10: Stability and reactivity

10.1. Reactivity

AMMONIA BUFFER SOLUTION

Reactivity The reactivity data for this product will be typical of those for the following class of materials: Ammonia or amines.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions The following materials may react strongly with the product: Strong acids. Strong oxidising agents.

10.4. Conditions to avoid

Conditions to avoid Avoid excessive heat for prolonged periods of time. Avoid freezing. Avoid contact with acids. Avoid contact with strong oxidising agents.

10.5. Incompatible materials

Materials to avoid Alkalis - inorganic. Strong acids. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Heating may generate the following products: Ammonia or amines. Hydrogen chloride (HCl).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg) 7,407.41

Skin corrosion/irritation

Skin corrosion/irritation Corrosive to skin.

Serious eye damage/irritation

Serious eye damage/irritation Corrosivity to eyes is assumed. Causes serious eye damage.

Respiratory sensitisation

Respiratory sensitisation There is no evidence that the product can cause respiratory hypersensitivity.

Skin sensitisation

Skin sensitisation No specific test data are available.

Germ cell mutagenicity

Genotoxicity - in vitro No specific test data are available.

Genotoxicity - in vivo

Does not contain any substances known to be mutagenic.

Carcinogenicity

Carcinogenicity There is no evidence that the product can cause cancer.

Reproductive toxicity

Reproductive toxicity - fertility Does not contain any substances known to be toxic to reproduction.

Reproductive toxicity - development

Does not contain any substances known to be toxic to reproduction.

Specific target organ toxicity - single exposure

STOT - single exposure No specific test data are available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No specific test data are available.

AMMONIA BUFFER SOLUTION

Aspiration hazard

Aspiration hazard Not anticipated to present an aspiration hazard, based on chemical structure.

Inhalation

Vapour from this product may be hazardous by inhalation. Irritating to respiratory system.

Ingestion

Corrosive. Small amounts may cause serious damage.

Skin contact

Causes burns.

Eye contact

This product is strongly corrosive. Immediate first aid is imperative. Risk of serious damage to eyes.

Acute and chronic health hazards

This product is corrosive.

Route of entry

Skin and/or eye contact Inhalation

AMMONIA ...%

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ 350 mg/kg, Oral, Rat

Acute toxicity - dermal

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

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LC₅₀ 9850 mg/m³, Inhalation, Rat 60 minute exposure

Skin corrosion/irritation

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

Extreme pH ≥ 11.5 Corrosive.

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.

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.

AMMONIA BUFFER SOLUTION

Reproductive toxicity - development	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	STOT SE 3 - H335 May cause respiratory irritation.
Target organs	Respiratory system, lungs
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Not classified as a specific target organ toxicant after repeated exposure.
<u>Aspiration hazard</u>	
Aspiration hazard	Based on available data the classification criteria are not met.
<u>General information</u>	
General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Severe irritation of nose and throat. Symptoms following overexposure may include the following: Corrosive to the respiratory tract.
Ingestion	Severe stomach pain. Nausea, vomiting. Symptoms following overexposure may include the following: May cause chemical burns in mouth, oesophagus and stomach.
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

AMMONIUM CHLORIDE

<u>Acute toxicity - oral</u>	
Notes (oral LD₅₀)	LD ₅₀ 1410 mg/kg, Oral, Rat
<u>Acute toxicity - dermal</u>	
Notes (dermal LD₅₀)	LD ₅₀ >2000 mg/kg, Dermal, Rat
<u>Acute toxicity - inhalation</u>	
Notes (inhalation LC₅₀)	No specific test data are available.
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Based on available data the classification criteria are not met.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Causes serious eye irritation.
<u>Respiratory sensitisation</u>	
Respiratory sensitisation	Based on available data the classification criteria are not met.
<u>Skin sensitisation</u>	
Skin sensitisation	Based on available data the classification criteria are not met.

AMMONIA BUFFER SOLUTION

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.

Carcinogenicity

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

Reproductive toxicity

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

Specific target organ toxicity - single exposure

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

Specific target organ toxicity - repeated exposure

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

Aspiration hazard

Aspiration hazard Not anticipated to present an aspiration hazard, based on chemical structure.

Inhalation

Irritating to respiratory system. May cause damage to mucous membranes in nose, throat, lungs and bronchial system.

Ingestion

Irritating. Symptoms following overexposure may include the following: Nausea, vomiting. Stomach pain.

Skin contact

Slightly irritating.

Eye contact

Irritating to eyes.

SECTION 12: Ecological Information

Ecotoxicity The product contains a substance which is very toxic to aquatic organisms.

AMMONIUM CHLORIDE

Ecotoxicity The product is not expected to be hazardous to the environment. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity

Acute toxicity - fish No specific test data are available.

Acute toxicity - aquatic invertebrates Not determined.

Acute toxicity - aquatic plants Not determined.

AMMONIA ...%

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

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

AMMONIA BUFFER SOLUTION

Acute toxicity - aquatic invertebrates LC₅₀, 48 hours: 101 mg/l, Daphnia magna

AMMONIUM CHLORIDE

Acute toxicity - fish LC₅₀, 96 hours: 209 mg/l, Cyprinus carpio (Common carp)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 101 mg/l, Daphnia magna

Acute toxicity - microorganisms EC₅₀, 30 minutes: 1618 mg/l, Activated sludge

Short term toxicity - embryo and sac fry stages LOEC, 28 days: 18.7 mg/l, Pimephales promelas (Fat-head Minnow)

Chronic toxicity - aquatic invertebrates NOEC, 21 days: 14.6 mg/l, Daphnia magna

12.2. Persistence and degradability

Persistence and degradability There are no data on the degradability of this product.

AMMONIA ...%

Persistence and degradability Ammonia is readily broken down in soil.

AMMONIUM CHLORIDE

Persistence and degradability There are no data on the degradability of this product.

12.3. Bioaccumulative potential

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient No specific test data are available.

AMMONIA ...%

Bioaccumulative potential Bioaccumulation is unlikely.

AMMONIUM CHLORIDE

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not known.

12.4. Mobility in soil

Mobility The product is soluble in water.

AMMONIA ...%

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

Adsorption/desorption coefficient Not available.

AMMONIA BUFFER SOLUTION

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.

AMMONIUM CHLORIDE

Mobility	The product is soluble in water.
-----------------	----------------------------------

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	This product does not contain any substances classified as PBT or vPvB.
---	---

AMMONIA ...%

Results of PBT and vPvB assessment	This substance is not classified as PBT or vPvB according to current EU criteria.
---	---

AMMONIUM CHLORIDE

Results of PBT and vPvB assessment	This substance is not classified as PBT or vPvB according to current EU criteria.
---	---

12.6. Other adverse effects

Other adverse effects	None known.
------------------------------	-------------

AMMONIA ...%

Other adverse effects	None known.
------------------------------	-------------

AMMONIUM CHLORIDE

Other adverse effects	None known.
------------------------------	-------------

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information	When handling waste, the safety precautions applying to handling of the product should be considered. The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible.
Disposal methods	Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID)	2672
UN No. (IMDG)	2672
UN No. (ICAO)	2672
UN No. (ADN)	2672

14.2. UN proper shipping name

AMMONIA BUFFER SOLUTION

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 classification code C5

ADR/RID label 8

IMDG class 8

ICAO class/division 8

ADN class 8

Transport labels



14.4. Packing group

ADR/RID packing group III

IMDG packing group III

ADN packing group III

ICAO packing group III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

IMDG Code segregation group 18. Alkalis

EmS F-A, S-B

ADR transport category 3

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.

and the IBC Code

SECTION 15: Regulatory information

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

AMMONIA BUFFER SOLUTION

National regulations	Control of Substances Hazardous to Health Regulations 2002 (as amended). Health and Safety at Work etc. Act 1974 (as amended).
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). 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). Commission Regulation (EU) No 2015/830 of 28 May 2015.
Guidance	Workplace Exposure Limits EH40.
Authorisations (Title VII Regulation 1907/2006)	No specific authorisations are known for this product.
Restrictions (Title VIII Regulation 1907/2006)	No specific restrictions on use are known for this product.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	ATE: Acute Toxicity Estimate. ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. DNEL: Derived No Effect Level. IATA: International Air Transport Association. IMDG: International Maritime Dangerous Goods. PNEC: Predicted No Effect Concentration. RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail. vPvB: Very Persistent and Very Bioaccumulative. DMEL: Derived Minimal Effect Level.
Classification abbreviations and acronyms	Eye Dam. = Serious eye damage Skin Corr. = Skin corrosion STOT SE = Specific target organ toxicity-single exposure
General information	Only trained personnel should use this material.
Key literature references and sources for data	Source: European Chemicals Agency, http://echa.europa.eu/
Classification procedures according to Regulation (EC) 1272/2008	STOT SE 3 - H335, Skin Corr. 1B - H314, Eye Dam. 1 - H318: Calculation method.
Revision date	23/04/2018
Revision	2
Supersedes date	25/09/2008
SDS number	10062

AMMONIA BUFFER SOLUTION

SDS status

Approved.

Hazard statements in full

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

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.