EXTENDED PRODUCT SAFETY DATA SHEET prepared in accordance with Annex II to REACH Regulation (E) No. 1907/2006 of REACH as amended by Regulation (EU) 2020/878

Version 4.0/EN

Revision Date: March, 2023

AMMONIA WATER, TECHNICAL (AQUEOUS AMMONIA SOLUTION WITH CONCENTRATION ABOVE 25%)

This Safety Data Sheet contains information on the potential risks to those involved in the handling, transport and operation of the material, as well as describing the potential risks to the user and the environment. This information must be made available to those who may come into contact with the material or are responsible for its use.

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Name of substance:	ammonia aqueous solution with concentration above 25%
Name of the mixture:	Ammonia water, technical
Chemical name and formula:	NH_4OH
Trade name:	Ammonia water
CAS number:	1336-21-6
IS INECS number:	215-647-6
Index Number:	007-001-01-2, note B
Molecular weight:	>=17.031 - <=17.031 (for anhydrous ammonia)
Chemical composition:	aqueous solution of ammonia (NH4OH)
REACH registration number:	
• **Ammonia, anhydrous**	**01-2119488876-14-0037**
UFI #	**GW10-W0H5-V00F-CCTH**

1. 2 Identified uses of the substance/mixture of concern and uses advised against

Established uses:
M1- Production of ammonia water with different concentration.
F1- Formulation : Industrial Distribution / Industrial Formulation; Formulation of mixtures of chemical products.
IW- Industrial use : Used as an auxiliary agent in process and non- process substances, e.g. in photochemical processes, cooling systems, insulation products, inks and toners, coatings, thinners and paint removal chemicals, and also as a process aid in the chemical industry as a stripping agent in the reduction of nitrogen oxides, sulfur oxides, process aid in fertilizing, neutralizing agent, textile dyes, detergents and cleaning agents and in the treatment of textile fabrics. Also used in pulp/paper, leather, wood and metal surfaces, rubber/latex and semiconductor/electronics manufacturing.
PW- Professional Use: Uses as a laboratory chemical, as a cooling element in cooling systems, as a water treatment chemical, as a fertilizer, thinner or cleaning chemical for coatings and paints, and as a photochemical . It is also used as a cleaning agent, as a surface treatment product for leather and other material, a pH regulator or neutralizing agent, and as a process aid for fertilizing.
C- Consumer use : Consumer use of ammonia is in surface paints, thinners and paint removers, in filters, polishing powder and patches, in detergents and cleaners, and it is also used in cosmetics and personal care products.
Uses not recommended: Not established.

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1.3 Details of the supplier of the safety data sheet

Name of the manufacturer: AGROPOLIHIM AD
Address: Industrial zone
p.c. 9160, Devnya, Bulgaria
Phone: tel.:+359 / 519 97 419, mob.:+359 / 885 897 661
Contact person: e-mail: m.tsvetkova@agropolychim.bg
Miroslava Tsvetkova, Dipl . eng
URL website: www.agropolychim.bg
Supplier:
AFER BULGARIA EOOD BULGARIA
Industrial zone 9160, DEVNYA
Tel: +359/519 97 452 / afer@agropolychim.bg

1.4 Emergency Telephone Number

In case of emergency:

Country	Contact phone number	Specific information
Bulgaria: National Center for Prevention and Treatment of Intoxications; Pirogov Medical Institute, Sofia	+359 2 9154 233; +359 2 9154 409	Available 7 days a week , 24 hours on day
Pan-European emergency number #	112	Available 7 days a week, 24 hours a day

SECTION 2: HAZARDS DESCRIPTION

2.1 Classification of the substance or mixture

2.1.1 Classification of the mixture according to Regulation (EU) 1272/2008

Skin corrosion/irritation, hazard category 1B, H314
Acute toxicity, hazard category 4, H332
Specific toxicity for determined organs-disposable exposure - by inhalation, category 3 (STOT SE 3), H335 (Conc . >5%)
Dangerous for the water one medium-sharp danger category 1 , H400
Dangerous for the water one environment – chronic danger category 2, H411

2.1. 2 Additional information

For the full text of the hazard warnings and safety recommendations, according to the classification: see Section 16.

2.2 Label Elements

Hazard pictogram:

GHS 05: Corrosion GHS 07: Caution GHS 09: Environment

Signal word: Danger

Hazard warnings:

H314 - Causes severe skin burns and serious eye damage.
H332- Harmful if inhaled
H335- May cause respiratory irritation
H410- Highly toxic to aquatic organisms, with long-lasting effects

Safety recommendations:

P260 Do not breathe vapour.
P264 Wash exposed body parts thoroughly with water after handling the product.
P280 Use chemical protective gloves, full face mask person with a gas filter and protective clothing .
P301+P330+ P331 IF SWALLOWED: Rinse mouth. Do not induce vomiting.
P303+P361+ P353 IF ON SKIN (or hair): Remove immediately all soiled clothing. Flush the skin with water / take a shower.
P304+P340 IF INHALED: Remove face to fresh air and place in a position that facilitates breathing.
P305+P351+ P338 IF IN EYES: Rinse thoroughly with water for a few minutes away. Remove contact lenses, if any as far as possible. Continue flushing.
P310 Immediately call a POISON CENTER or doctor.
P363 Wash contaminated clothing before reuse.
P273 Avoid release to the environment.
P402+P404 Store in a dry place. Store in a closed container.
P410 Keep out of direct sunlight.
P501 Waste packaging/contents should be managed according to national legislation.

2.3 Other Hazards

PBT/ vPvB : The substance does not meet the criteria for persistence, bioaccumulation and toxicity, or strong persistence and strong bioaccumulation according to Regulation (EU) No. 1907/2006, Annex XIII.

Endocrine-disrupting properties: No data available on endocrine-disrupting properties.
Presence of nanoforms : This product does not contain nanoforms or substances containing nanoforms .
Other hazards : Aqueous ammonia solution is toxic to aquatic organisms

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Ingredients in the mixture.

This product is a mixture of anhydrous ammonia and water. Depending on the concentration of ammonia in the solution, there are different concentration limit values concerning the final classification of the product.

Designation	CAS/ EINECS Number	Index no	REACH registration number	% Concentration SCL- specific concentration concentration	Classification according to Regulation (EC) No. 1272/2008	SCL - specific limit concentration
Aqueous ammonia solution	1336-21-6/215-647-6	007-001-01-2, note B	01-2119488876-14-0037	C≥ 25%	Skin corrosion 1B, H314 Acute tox. Cat. 4 H332 STOT Single exposure 3, H335 Acute aquatic toxicity. 1, H400 Chron. Water tox. 2, H411	C≥ 5%: STOT Single exposure 3, H335 C≥25%- Dangerous for the environment cat. 1 and 2 H400, H411 M-factor: acute toxicity to aquatic organisms: 1
Water	7732-18-5/231-791-2		na	≤75%	na	

Type: (1) A substance classified as a physical hazard, a health hazard, and an environmental hazard.
(2) Substance with an occupational exposure limit.
See Section 16 for a full description of the text of each classification.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Speed of response is important. In case of unconsciousness, the victim is placed in a stable lateral position, i.e.

the head is placed laterally to prevent aspiration of vomitus fluid.
Provision of a shower and eyewash area near the work site.

After inhalation

In the event of an inhalation accident, remove the victim to fresh air and keep him at rest. If necessary, give oxygen or perform artificial respiration. Place the casualty in a stable lateral position, cover and keep the body warm. Call a doctor immediately. Take the victim to hospital immediately.

After skin contact

Call a doctor immediately. Take the victim to hospital immediately. Remove contaminated clothing and shoes immediately. Wash with plenty of water/take a shower.

After eye contact

In case of contact with eyes, wash thoroughly with water for at least 15 min. Ensure good flushing by lifting eyelids with fingers. Remove contact lenses if possible. Seek medical attention immediately. In case of difficulty lifting the eyelids, perform a pain-relieving eye wash (with oxybuprocaine).

After ingestion

Call a doctor immediately. Take the victim to hospital immediately. If the victim is conscious: - If a quantity is swallowed, rinse the mouth with water (only if the person is conscious). Do not forcefully induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Acute reactions

It causes suffocation, severe coughing fits, eye pain, reddened skin with red spots and blisters, dizziness, stomach pain and vomiting.

Delayed reactions

Pulmonary edema can occur for up to 48 hours and can be fatal depending on the concentration and duration of exposure.

4.3 Indication of any immediate medical attention and special treatment needed

Rapid cessation of contact with ammonia. Respiratory resuscitation with an oxygen stream, if necessary - tracheotomy and assisted breathing. Glucocorticoids - aqueous solution 50-100 mg intravenously - for swelling of the vocal cords; in other cases, smaller doses are administered orally. Symptomatic treatment - antitussives, analgesics, etc. according to indications.

SECTION 5: FIRE FIGHTING MEASURES

5.1 Fire extinguishing agents

In case of fire in the surrounding environment: use suitable extinguishing agents. Suitable means may include water jet, dry chemical, mist or foam. There are no restrictions on fire extinguishers.

5.1.1 Suitable extinguishing media

Extinguish the fire using the appropriate substances against the surrounding fire. Cool closed containers exposed to the fire with a water jet.

5.1.2 Inappropriate fire extinguishing agents

None.

5.2 Special hazards arising from the substance or mixture

The solution is non-flammable. Outdoors, an ammonia-air mixture is generally beyond the limits of flammability. Indoors there is a risk of explosion in the presence of an ignition source.
Combustion products and released gases: Ammonia and NOx.

5.3 Advice to firefighters

Instructions for extinguishing a fire:
In case of fire: Evacuate the area. Extinguish fire from a distance due to explosion hazard.
Protection during fire fighting :
Wear gas-tight protective clothing in combination with self-contained breathing apparatus. For further information see section 8: "Exposure controls/personal protection".

SECTION 6: EMERGENCY RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

General measures:
Evacuate unnecessary personnel. Provide adequate air ventilation. Do not breathe gas, vapor, vapor or spray.
For non-emergency personnel :
Only qualified personnel equipped with appropriate protective equipment may intervene.
For emergency responders:
Mandatory protective clothing and equipment. Do not attempt to take action without proper protective equipment. For further information see section 8: "Exposure controls/personal protection".
Emergency procedure : Gas/vapour is heavier than air. It can accumulate in confined spaces, especially at or below ground level.

6.2 Environmental precautions

Contain the spill, if any safely. Do not allow discharge into drains, undiluted spillage into sewers, basements or shafts, and water sources. If the product pollutes rivers and lakes, inform the relevant authorities.

6.3 Methods and materials for containment and cleaning up

Ventilate the area and wash the spill after the material has been collected. If possible, collect by pumping the spilled liquid into a labeled container. Pour plenty of water or neutralize the spill with dilute mineral acid e.g. sulfur before disposal. Contaminated material is disposed of according to the current regulations .

6.4 Reference to Other Sections

For more information on exposure control/personal protection or disposal issues, please check section 8 and 13 of this Safety Data Sheet.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

7.1.1 Precautions

Ensure good ventilation in the workplace - Comply with the European Norms for exposure in the workplace. Use only acid-resistant materials.
When emptying and draining, it is preferable to use pumping techniques.
Provide an adapted restraint system.
Use a suitable hand cart designed for carrying drums. Secure the barrels at any time during their use. Use a pressure relief regulator or check valve to safely vent the gas from the barrel. Contact the supplier in case of any doubt or problem. Use a check valve to prevent backflow into the barrel. Process small quantities in laboratory conditions. Use only in well-ventilated areas. Use only equipment and materials that are compatible with the product. Keep away from incompatible products.

7.1.2 Advice on general workplace hygiene

Do not eat, drink or smoke in workplaces.
Wash hands after work, remove contaminated clothing and protective equipment before entering dining areas.

7.2 Conditions for safe storage, including incompatibilities

Technical measures and storage conditions:
Store in cool, dry, clean, well-ventilated areas, away from alkaline products and metals. Store in a corrosion-resistant container with a resistant inner lining. Attacks many metals, producing extremely flammable hydrogen gas that can form explosive mixtures with air. Flammable vapor concentrations may accumulate in the headspace of containers. Avoid all possible sources of ignition (spark or flame). Keep containers locked. Keep them tightly closed and sealed until ready to use. Opened containers should be tightly sealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Do not stack containers on top of each other.
Do not store in direct sunlight. Do not store at temperatures close to freezing point
Compatible storage materials :
316-L stainless steel.
High density polyethylene.
Storage class: 8B

7.3 Specific End Uses

Please check the identified use in section 16 and in the exposure scenario appendix of this Safety Data Sheet.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Legally regulated limit values for occupational exposure:

Workplace exposure limits:
Long-term exposure (TWA:8h) : 14 mg /m3 or 20ppm
Short-term exposure (STEL: 15min) : 36 mg /m3 or 50ppm

Workplace exposure limits for different countries:
Great Britain - TWA (8 hour reference period): 18 mg /m3.
UK - 15 min STEL: 25 mg /m3.
Bulgaria - TWA (8 hour comparison period): 14 mg /m3
Great Britain - TWA (8 hour reference period): 7 mg /m3
France - VLE (short term): 14 mg /m3
Germany - MAC: 14 mg /m3

Supposed inactive concentration (PNEC)

PNEC components	
Sweetie water	0.0011 mg /l (free ammonia)
Marine water	0.0011 mg /l (free ammonia)
Volley discharge	0.089 mg /l (free ammonia)

8.1.2. Received inactive concentration (DNEL), after doing on evaluation on safety on the chemical substance (CSA).

Name on the substance: ammonia, anhydrous:

Conclusions on the danger to workers:

Route of exposure	**Type of effect**	**Hazard conclusions**	**Most sensitive endpoint**
Inhalation	Systemic effects - long-term	DNEL (Derived No Effect Level) 47.6mg/m³	repeated dose toxicity (Oral)
Inhalation	Systemic effects - acute	DNEL (Derived No Effect Level) 47.6mg/m³	repeated dose toxicity (Oral)
Inhalation	Local effects - long-term	another toxicological threshold 14mg/m³	Irritation (respiratory tract)
Inhalation	Local Effects- acute	another toxicological threshold 36mg/m³	irritation (respiratory tract)
Dermal	Systemic effects - long-term	DNEL (Derived No Effect Level) 6.8mg/kg bw/day	Repeated dose toxicity (Oral)
Dermal	Systemic Effects - Acute	DNEL (Derived No Effect Level) 6.8mg/kg bw/day	Repeated dose toxicity (Oral)
Dermal	Local effects - Long	medium risk (no threshold)	Skin irritation/corrosion

	term		
Dermal	Local effects - acute	medium risk (no threshold)	Skin irritation/corrosion
Eyes	Local effects	medium risk (no threshold)	

Conclusions on hazard for the general population :

Route of exposure	Type of effect	Hazard conclusions	Most sensitive endpoint
Inhalation	Systemic effects - long-term	DNEL (Derived No Effect Level) 23.8mg/m³	Repeat-dose accuracy (Oral)
Inhalation	Systemic effects - acute	DNEL (Derived No Effect Level) 23.8mg/m³	Repeat-dose accuracy (Oral)
Inhalation	Local effects- Long term	DNEL (Derived No Effect Level) 2.8mg/m³	Irritation (respiratory tract)
Inhalation	Local effects- Acute	DNEL (Derived No Effect Level) 7.2mg/m³	Irritation (respiratory tract)
Dermal	Systemic effects - long-term	DNEL (Derived No Effect Level) 6.8mg/kg bw/day	Repeat-dose accuracy (Oral)
Dermal	Systemic effects - acute	DNEL (Derived No Effect Level) 6.8mg/kg bw/day	Repeat-dose accuracy (Oral)
Dermal	Local effects- Long term	medium risk (no threshold)	skin irritation/corrosion
Dermal	Local effects- Acute	medium risk (no threshold)	skin irritation/corrosion
Oral	Systemic effects - long-term	DNEL (Derived No Effect Level) 6.8mg/kg bw/day	Repeat-dose accuracy (Oral)
Oral	Systemic effects - acute	DNEL (Derived No Effect Level) 6.8mg/kg bw/day	Repeat-dose accuracy (Oral)

Eyes	Local effects	medium risk (no threshold)	

8.2 Exposure Control

8.2.1 Appropriate engineering control.

Provide adequate exhaust ventilation at the workstation. The facilities should be located outdoors and not close to buildings. The integrity of indoor processes to be fully monitored. Ensure that primary emission sources are not located in the worker's breathing zone. Emergency eyewash fountains and safety showers should be available in close proximity to any potential exposure.

8.2.2 Individual protection measures, such as personal protective equipment

Respiratory protection

- In case of dust or aerosol formation, use a respirator with an approved filter.
- Self-contained breathing apparatus in oxygen deficient environments/in large uncontrolled emissions/in all circumstances where the mask and filter do not provide adequate protection.
- Use only respiratory protection that meets international/national standards. - Use NIOSH approved respiratory protection.

Hand skin protection

- Take into account the information provided by the manufacturer on permeability and penetration time and on the special conditions of the workplace (mechanical stress, duration of contact).
- Protective gloves - chemical resistant: Gloves APF 10 (90%).
- Suitable material: butyl rubber

Eye protection

Wearing on protective means for eyes / face is necessary for _ Yes everything control the risks. The shield for face or the glasses must Yes respond to EN166 or equivalent. Must be worn with respiratory protection.

Skin and body protection

- Chemically resistant apron
- If there is a possibility of splashes, wear: butyl rubber; - boots; - do not wear leather shoes.

8.2.3 Environmental exposure control

8.2.3.1 Industrial use

Avoid uncontrolled discharge of ammonia water solutions into municipal sewers or surface water. In the event of such a release, it could cause a significant change in the pH of the waters. A periodic check of the pH value is required when discharging into open water sources. General drainage should be done so as to minimize pH changes in the receiving surface water.

8.2.3.2 Professional Use

Do not allow uncontrolled discharge of large flows of ammonia solutions into municipal sewers or surface water sources.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	colorless solution
Smell:	characteristic, sharp, suffocating
Odor threshold:	5-25 ppm
pH of a 10% aqueous solution:	11.7
pKa :	No data
Melting point:	-56°C (25% NH3)
Boiling point:	38°C at 101.3 kPa (25% NH3)
Flash point:	not applicable
Evaporation rate:	No data
Flammability:	The solution is non-flammable. Some aquatic dissolved on ammonia, e.g. 26% ammonia, they have pressure of the vapor such that the mixture may be within the flammable range.
Upper/lower border on flammability or explosion:	Flammability of ammonia vapors in air volume percentages 16-26 (at atmospheric pressure and temperature).
Money pressure:	48 kPa at 200C (25% NH3)
Density at 20°C:	0.907 g /cm3 (25%)
Relative density:	Not applicable
Solubility:	Completely soluble in water
Partition coefficient n - octanol /water:	Not applicable (inorganic substance)
Auto-ignition temperature:	651°C (ammonia money)
Decomposition temperature:	Not applicable (inorganic substance)
Viscosity:	600 mPa s at 25 °C

Oxidizing properties:	not oxidizing
Explosive properties:	Non-explosive, solution

9.2 Additional Information

Miscible with water in any proportion

SECTION 10 STABILITY AND REACTIVITY

10.1 Responsiveness

Stable under recommended storage and handling conditions (see section 7).

10.2 Chemical stability

Thermally stable when reacting at design storage conditions.

10.3 Probability of hazardous reactions

It can react violently with acids, strong oxidants, halogen elements, acrylic acid, dimethyl sulfate, silver nitrate, silver oxide, hypochlorite, mercury, etc.
Ammonia water decomposes copper, zinc, aluminum and their compounds.

10.4 Conditions to Avoid

Heat, direct light and mechanical damage to the container. Halogens, nitric acid, hypochlorites , silver, mercury, lead, strong acids and nitrogen oxides.

10.5 Incompatible Materials

Acids, strong oxidants, halogen elements, acrylic acid, dimethyl sulfate, silver nitrate, silver oxide, hypochlorite , mercury, etc.

10.6 Hazardous decomposition products

When heated, emits ammonia vapors. In fire conditions see Section 5

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Information on the hazard classes defined in Regulation (EC) No. 1272/2008

Probable Routes of Exposure: The most likely route of exposure to ammonia water is through inhalation. Inhalation of vapors of ammonia water can cause immediate irritation of the respiratory tract, pain. In contact with ammonia water, it causes burns to the skin and eyes. If it is swallowed in ammonia water, it causes burns of the digestive tract.

Acute toxicity:

	Exposure method	Type of dose	Route of exposure	Effective dose	Exposure time	Results
Acute oral toxicity	OECD Guideline 401 (Acute Ingestion Toxicity)	Rats (Wistar), male	Ingestion (probe)	LD350mg/kg/ bw	14 days	
Acute dermal toxicity	LD50	-	In case of skin contact	-		No data available. Refused to test as the substance is corrosive. With skin contact, local effects will dominate and significant systemic effects are unlikely to occur.
Acute inhalation toxicity	LC50	Rats (Wistar) male/female	When inhaled	LC50 7035-28130 mg /m³ air for an interval	Between 5 and 60 minutes	

Skin corrosion/irritation: Ammonia water is corrosive to the skin. At pH-10 it acts corrosive on the skin.

Serious eye damage/irritation: Causes severe eye irritation. No study has been performed, but based on the skin irritation results, it can be assumed that there will be eye irritation.

Respiratory or skin sensitization: No information available. Due to its corrosiveness, sensitization testing is not required.

Germ cell mutagenicity: None indications for mutagenicity after testing *in vitro* Bacterial Reverse Mutation method and *in vivo* Micronucleus method.

Carcinogenicity: According to Regulation EC No. 1272/2010 (EU CLP), ammonia water does not meet the criteria for classification as "carcinogenic to humans" for the following reasons:

- There are no human studies on ammonia water that establish a causal relationship between exposure and the development of cancer. As such, classification as Category 1A is not guaranteed.
- There are no animal experiments that show evidence that ammonia water is a carcinogen. Therefore, classification as category 1B is not supported by the data set.

Reproductive toxicity/developmental toxicity: No indication of toxicity affecting reproduction .

STO (specific toxicity to certain organs) — single exposure/repeated exposure:

STOO	Impact dose	Value	Duration of exposure	Biological spieces	Method	Assessment
Medium strong in the mouth	68 mg / kg bw /d	NOAEL	35 days	Crj : CD(SD) male and female rats	Combined repeat dose toxicity study and reproductive/growth toxicity study	No pronounced toxicity
Medium chronic by inhalation	LC50 35 - 63 mg /m ^{3}	NOAEC	50 days	Male white rats	Moderate chronic inhalation toxicity of ammonia in the rat.	There is no systemic toxicity, but the initial effect is local irritation of the respiratory tract.

Route of exposure: Inhalation and oral**.**

11.2 Information on other toxicological hazards

See section 12, point 12.6 of the data sheet. No other information available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxic to aquatic organisms

Toxicity to aquatic organisms	Dose of impact	Exposure time	Biological spieces	Method	Assessment	Note
Strong toxicity to fish	LC50	96 h	*Rainbow trout (Onchorynchus mykiss)*		0.89 mg /L non-ionized ammonia.	pH and temperature regulation .
Strong toxicity to daphnia	EC50	48 h	*Daphnia magna (Daphnia magna)*	Freshwater, static, conforming to ASTM E729-80.	101 mg /L	Results, based on mortality.
Strong toxicity to algae	EC50	18 days	*Chlorella vulgaris (*	Freshwater, static	7200 mg /L	Score based on number of cells

			Chlorella vulgaris)			
Chronic toxicity to fish	LOEC	73 days	*Rainbow trout (Onchorynchus mykiss)*		0.022 mg /L	Score, based on mortality
Chronic toxicity to daphnia	NOEC	96 h	*Daphnia magna (Daphnia magna)*	Freshwater stream - equal to or similar to EPA OPPTS 850.1300 (Chronic Daphnia Toxicity Test)	0.79 mg /L non-ionized ammonia.	Score, based on mortality.

12.2 Persistence and degradability

Not considered persistent and rapidly degradable in aquatic systems. In abiotic environments, ammonia is taken up by algae and macrophytes for use as a nitrogen source.

12.3 Bioaccumulative potential

Ammonia accumulation in flora and fauna is not considered significant in the environment because it does not accumulate in lipid-rich tissues in the same way as organic matter. Ammonia is found everywhere in aquatic environments due to the decomposition of plants and animals and the excretory process of animals. As ammonia is a product of normal metabolism, it is not expected to be bioaccumulative .

12.4 Mobility in soil

Limited mobility in soil is expected due to strong adsorption of ammonium ions by clay minerals and bacterial oxidation to nitrate. Ammonia in the soil is in dynamic balance with nitrate and other substances in the nitrate cycle.

12.5 Results of the assessment of persistence, bioaccumulation and toxicity and high persistence and strong bioaccumulation (PBT and vPvB)

According the results from the assessment the substance no is PBT or vPvB

12.6 Endocrine -disrupting properties

No data available on endocrine disrupting properties.

12.7 Other adverse effects

No additional information

SECTION 13 WASTE DISPOSAL

13.1 Waste treatment methods

Defuse in compliance with all applicable local and national regulations.
Disposal methods : Empty packages may contain vapor, do not cut, grind or weld. Use only authorized companies for transport, as well as for recycling or disposal of waste. The latter should be treated as hazardous waste. Comply with all applicable local and national laws.
Information on waste treatment : Packaging waste should be collected and stored separately in precisely defined and designated places, until it is handed over to authorized companies for treatment.
Disposal information in the sewage system: The polluted ones leads no follows Yes everything neutralize through disposal in the sewer system , water sources, soils or underground leads.
Please follow all local, municipal, national and international laws.

SECTION 14 TRANSPORT INFORMATION

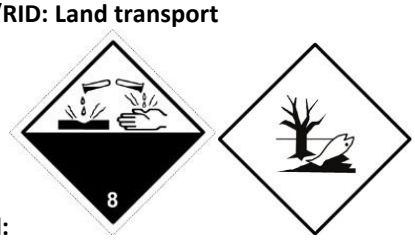
Ground transportation UN RTDG/ADR/RID :

14.1 UN List Number or Identification Number

International regulations
UN No: 2672
14.2 Exact name of the shipment on the UN list:
ADR: AMMONIA SOLUTION / **RID:** AQUEOUS - AMMONIA SOLUTION (AMMONIA SOLUTION)

14.3 Transport hazard classes
ADR/RID: Land transport

Label:



Class: 8 (Corrosive substances)

14.4 Packing group: III
14.5 Environmental hazards:
Classification code: C 5
Environmentally hazardous substances
Identification number: 80

14.6 Special protective measures for consumers

The person transporting the product must be trained and know how to respond in the event of an accident or spill.

14.7 Sea transport of cargoes in bulk according to instruments of the International Maritime Organization (according to Annex II of MARPOL 73/78 and the IBC-Code): Not applicable

SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
EC Regulation 1907/2006 (REACH, 98/24 EC, EC Regulation 1272/2008 (CLP)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of the hazards of major accidents involving dangerous substances: E1- the thresholds for minimum quantities are: 1) 100 t; 2) 200 t.
Ordinance on the order and method of storage of dangerous chemicals and mixtures, 05.02.2021

15.2 Chemical Safety Assessment

A chemical safety assessment has been carried out. See Appendix for exposure scenarios.

SECTION 16 ADDITIONAL INFORMATION

16.1 Hazard warnings
The full texts of each classification used in sections 2.1 and 3 Classification according to Regulation 1272/2008 (CLP)

H332- Harmful if inhaled
H314 - Causes severe skin burns and eye damage
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic organisms, with long-lasting effects
H411 - Toxic to aquatic organisms, with long-lasting effects.
H335 - May cause respiratory irritation

Acute Tox 3.- Acute toxicity (inhal .), danger category 3 Skin Corr . 1B - Skin corrosion/irritation, hazard category 1B: Aquatic Acute 1. - Dangerous for the aquatic environment - acute danger, category 1

16.2 Other hazards:
Not considered PBT or vPvB

16.3 Other information: Provide adequate information, instructions and training to operators. Carry out regular training for all employees in the field of transport (according to ADR, chapter 1.3).

16.4 Revision: The current version of the ILB has been completely updated and updated.

16.5 Abbreviations:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS: Chemical Abstracts Service
EC: European Community
EN: European standard
ERC: Environmental Release Category
EU: European Union
EUH: European Hazard Statement
GHS: Globally Harmonized System
LC50: Medium Lethal Dose
DNEL: Predicted No Effect Exposure Level
NOAEC/NOAEL: No Observed Adverse Effect Concentration/Level
OECD: Organization for Economic Co-operation and Development
PBT: Persistence, bioaccumulation , toxicity
vPvB: High persistence and strong bioaccumulation
PFTE: Polytetrafluoroethylene
PNEC: Predicted No Effect Exposure Concentration
PVC: Polyvinyl Chloride
STEL: Short Term Exposure Limit

Note: The above regulatory information only indicates the basic rules applicable specifically to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions that supplement these provisions. See all applicable national, international and local regulations or rules.

Disclaimer : This sheet supplements the data sheets, but does not replace them. The information provided is based on our knowledge of the product at the time of publication and is given in good faith. In addition, the user's attention is drawn to the possible risk arising from the use of the product for any other use than that for which it was intended. This in no way exempts the user from knowing and applying all regulations controlling his activity. He alone will take responsibility for taking precautions related to the use of the product. The purpose of all the mentioned mandatory provisions is to help the user fulfill his obligations regarding the use of dangerous products. This information should not be considered exhaustive. This does not relieve the user of his responsibility to ensure that obligations other than those specified may apply relating to the storage and use of the product.