

SAFETY DATA SHEET

AQUA AMMONIA 10-30%

Section 1. Identification

Product identifier	: AQUA AMMONIA 10-30%
Product code	: AMMAQ, AMMAQR, AMMAQ19, 4662-25448, 2490-14205, 2507-14204
SDS #	: N-2152
Other means of identification	: This safety data sheet applies to the following: Aqua Ammonia 19% Aqua Ammonia 29% Aqua Ammonia 20-0-0
Product type	: Liquid.

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

Identified uses

Manufacture of chemical products. Manufacture of specialty fertilizers. Pollution control products. Industrial and Institutional Cleaning Products.

Uses advised against

Product is not intended for consumer use.

Supplier's details	: PCS Sales (USA), Inc. (A Subsidiary of Nutrien Ltd.) Suite 150 500 Lake Cook Road Deerfield, IL 60015 United States
	Nutrien US LLC (A Subsidiary of Nutrien Ltd.) 5296 Harvest Lake Dr. Loveland, CO 80538 United States

Telephone no.	: 1-800-524-0132
Email	: sds@nutrien.com

Emergency telephone number (with hours of operation)	: CHEMTREC (24 hrs) 1-800-424-9300 or +1-703-527-3887
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Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

GHS label elements

Hazard pictograms



Section 2. Hazards identification

Signal word	: Danger
Hazard statements	: Causes severe skin burns and eye damage. Harmful if inhaled. May cause respiratory irritation.
Precautionary statements	
Prevention	: Wear protective gloves, protective clothing and eye or face protection. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash thoroughly after handling.
Response	: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
Storage	: Store locked up. Store in a well-ventilated place. Keep container tightly closed.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	: Do not taste or swallow. Wash thoroughly after handling.
Hazards not otherwise classified	: Causes digestive tract burns.
Hazards identified when used	: Manufacture of specialty fertilizers and pollution control products: Manufacturing process involves a strong exothermic reaction releasing toxic, flammable ammonia gas.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	% (w/w)	Identifiers
AQUA AMMONIA 10-30% (ammonium hydroxide) ammonia	100 10 - 30	CAS: 1336-21-6 CAS: 7664-41-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	: CORROSIVE. Begin eye irrigation immediately. All eye exposures require medical evaluation following decontamination. Immediately rinse eyes with large quantities of water or saline for a minimum 30 minutes, longer irrigation time is preferred if possible. If possible, remove contact lenses being careful not to cause additional eye damage. If the initial water supply is insufficient, keep the affected area wet with a moist cloth and transfer the person to the nearest place where rinsing can be continued for the recommended length of time. Call an ambulance for transport to hospital. Continue eye irrigation during transport. For additional advice call the medical emergency number on this safety data sheet or your poison center or doctor.
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Section 4. First aid measures

- Inhalation** : If gases or vapors exceed the IDLH or are present in unknown concentrations, rescuers must wear self-contained breathing apparatus and a suit resistant to gases (EPA Level B). In the U.S., OSHA HAZWOPER requirements under 29CFR1910.120 overrule the lesser protection requirements given in the anhydrous ammonia standard, 1910.111. REMOVE PERSON TO FRESH AIR. Watch closely for signs of wheezing and breathing difficulties. Maintain an open airway. If not breathing, begin CPR. Oxygen may be administered by trained personnel. Affected persons who have stopped breathing or are having difficulty breathing or are unconscious need immediate medical attention. Symptoms may be delayed after exposure to ammonia. The exposed person may need to be kept under medical surveillance for 24 - 48 hours. Call an ambulance for transport to hospital. For additional advice call the medical emergency number on this SDS or your poison center or doctor.
- Skin contact** : CORROSIVE. Immediately begin rinsing the affected areas with water. Remove contaminated clothing and shoes. Affected areas should be rinsed for a minimum 30 minutes, longer irrigation time is preferred if possible, due to the chemical reactions that occur. Luke-warm water is recommended for continued irrigation to prevent hypothermia. Conscious persons without breathing difficulties may benefit from prolonged irrigation in a fixed shower or bathing facility prior to hospital transport. Call an ambulance for transport to hospital. Continue skin irrigation during transport. For additional advice call the medical emergency number on this safety data sheet or your poison center or doctor. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : CORROSIVE. If the affected person requires cardiopulmonary resuscitation, avoid mouth to mouth contact. Wash out mouth with water. Get medical attention immediately. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Never give anything by mouth to an unconscious person. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Corrosive to eyes. Causes serious eye damage. Eye contact can result in temporary or permanent corneal damage and/or blindness. The full extent of damage to the eyes may not be known for 1 week after injury.
- Inhalation** : Harmful if inhaled. May cause respiratory irritation. May cause severe breathing difficulties. Serious effects may be delayed following exposure.
- Skin contact** : Corrosive to the skin. Causes severe burns. Contact with rapidly expanding gas may cause cold burns or frostbite.
- Ingestion** : Corrosive to the digestive tract. Causes burns.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
throat and stomach pain
bloating
nausea or vomiting

Section 4. First aid measures

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : This product consists of ammonia gas dissolved in water. A portion will convert to ammonium hydroxide. Ammonium hydroxide will rapidly penetrate the stratum corneum layer, eyes, and mucous membranes causing liquefaction necrosis. The extent of injury depends on duration of exposure and concentration of liquid. Do not attempt to use chemicals to neutralize the exposure. Inhalation of gas or vapor may cause delayed pulmonary symptoms (acute lung injury). The exposed person may need to be kept under medical surveillance for 24-48 hours.
- Specific treatments** : Corrosive hydroxyl ions generated by the production of ammonium hydroxide rapidly penetrate the skin, eyes, and mucous membranes. Outcomes can be improved by minimizing time to decontamination and extending decontamination times to reduce tissue damage. Expert opinion indicates extended decontamination is required to remove corrosive chemicals. Skin and eye decontamination should be performed for a minimum of 20 minutes, longer irrigation time is preferred if possible. Extended decontamination times may be required depending on the exposure. To avoid hypothermia, irrigation water should be maintained at a comfortable temperature. If the patient is not in extremis, it may be necessary to delay transport to emergency care facilities to ensure adequate decontamination time. However, early patient transport may be necessary depending on patient's condition or the availability of water. If possible, continue skin and/or eye irrigation during emergency medical transport. Double-bag contaminated clothing and personal belongings of the patient.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Decontamination measures may be necessary. Personnel and equipment must be checked and decontaminated prior to leaving the area.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Non-flammable. Material will not burn. Use water spray, fog or foam. Do not direct water into spilled anhydrous ammonia. Ammonia is a cryogenic liquid which cools on evaporation limiting vapor release. Water used for fire fighting at supplied temperatures will raise the temperature of ammonia resulting in greater evaporation. Use water spray curtain to divert vapor drift.
- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
nitrogen oxides
Ammonia

- Special protective actions for fire-fighters** : No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Contain and collect the water used to fight the fire for later treatment and disposal.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : Fully-encapsulating, vapor-protective clothing should be worn for spills and leaks without fire. Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product. If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Do not direct water into spilled anhydrous ammonia. Ammonia is a cryogenic liquid which cools on evaporation limiting vapor release. Water used for fire fighting at supplied temperatures will raise the temperature of ammonia resulting in greater evaporation.

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused adverse impacts (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Approach release from upwind. Do not use a vacuum truck to transfer this material. Put on appropriate personal protective equipment (see Section 8). Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Use appropriate equipment to put the spilled substance in a container for reuse or disposal. Recycle to process, if possible.
or
Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not ingest. Do not breathe vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container. Further manufacturing processes must be managed by trained professionals in a properly equipped facility.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Separate from acids. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Incompatible with copper alloys. Contact your sales representative or a metallurgical specialist to ensure compatibility with your equipment.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
ammonia	<p>ACGIH TLV (United States, 1/2024) [Ammonia] TWA 8 hours: 25 ppm. TWA 8 hours: 17 mg/m³. STEL 15 minutes: 35 ppm. STEL 15 minutes: 24 mg/m³.</p> <p>NIOSH REL (United States, 10/2020) [AMMONIA] TWA 10 hours: 25 ppm. TWA 10 hours: 18 mg/m³. STEL 15 minutes: 35 ppm. STEL 15 minutes: 27 mg/m³.</p> <p>OSHA PEL (United States, 5/2018) [Ammonia] TWA 8 hours: 50 ppm. TWA 8 hours: 35 mg/m³.</p>

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : 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.

Individual protection measures

Contact your personal protective equipment supplier to verify the compatibility of the equipment for the intended purpose.

General information : Do not handle until all safety precautions have been read and understood.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/ or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Recommended: butyl rubber, neoprene rubber, nitrile rubber, Viton®.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Under emergency conditions, or where contact with liquid anhydrous ammonia or high concentration gas is probable, a chemically resistant, gas tight, encapsulating suit with positive pressure self contained breathing apparatus is required. For accidental splash protection against the liquid, chemically resistant impervious coveralls or a chemical resistant suit should be worn.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Impervious rubber safety boots.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Use a NIOSH approved chemical cartridge or canister respirator with a full facepiece for ammonia concentrations up to 300 PPM. Use a positive pressure SCBA for concentrations above 300 PPM, for emergency response, or for entry into unknown concentrations. For U.S. work sites where respiratory protection is required, ensure that a respiratory protection program meeting 29 CFR 1910.134 requirements is in place.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

- Physical state** : Liquid.
- Color** : Colorless. [Transparent]
- Odor** : Pungent. Ammoniacal. [Strong]
- Odor threshold** : Not available.
- pH** : 12 to 13
- Melting point/freezing point** : Not available.
- Boiling point or initial boiling point and boiling range** : Not available.
- Flash point** : [Product does not sustain combustion.]
- Evaporation rate** : Not available.
- Flammability** : Liquid: Non-flammable.
Vapor: Flammable concentrations of vapor may accumulate in the headspace of containers.
- Lower and upper explosion limit/flammability limit** : Ammonia
Lower: 16%
Upper: 25%
- Vapor pressure** :

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
ammonia	6460.02	861.3				

Relative vapor density : 0.6 to 1.2 [Air = 1]

Relative density : 0.89 to 0.93

Section 9. Physical and chemical properties

Solubility(ies) :

Media	Result
water	Easily soluble

Solubility in water : Soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature :

Ingredient name	°C	°F	Method
ammonia	651	1203.8	

Decomposition temperature : Not available.

Viscosity : Not available.

Particle characteristics

Median particle size : Not applicable.

Section 10. Stability and reactivity

Reactivity : Reactive with acids

Chemical stability : The product is stable.

Possibility of hazardous reactions : If mixed with chlorine or hypochlorites, it may form nitrogen trichloride which may explode spontaneously in air.

Conditions to avoid : Flammable concentrations of vapor may accumulate in the headspace of containers. Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials : Extremely reactive or incompatible with acids. Highly reactive with oxidizing agents and reducing agents. Forms explosive compounds with many heavy metals such as mercury or silver. May react explosively with chlorine, hypochlorites such as bleach or chlorinating chemicals and other halogens such as bromine, iodine, fluorine or their compounds.
Highly corrosive to copper and its alloys. Slightly corrosive to aluminum and zinc. Very slightly corrosive to mild steel. Non-corrosive to glass or stainless steel (304 or 316). Do not use copper, brass, bronze, or galvanized steel in contact with ammonia. Do not use brazed joints in ammonia service. Contact your sales representative or a metallurgical specialist to ensure compatibility with your equipment.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name

ammonium hydroxide
ammonia

Result

Rat - Oral - LD50 350 mg/kg
Rat - Inhalation - LC50 Gas. 9500 ppm [1 hours]
Rat - Inhalation - LC50 Gas. 2000 ppm [4 hours]
Rat - Inhalation - LC50 Vapor 4673 mg/m³ [4 hours]

Conclusion/Summary [Product] : Harmful if inhaled. Corrosive to the digestive tract.

Section 11. Toxicological information

Skin corrosion/irritation

Conclusion/Summary [Product] : Corrosive to the skin.

Serious eye damage/eye irritation

Product/ingredient name

ammonium hydroxide

Result

Rabbit - Eyes - Severe irritant

Rabbit - Eyes - Severe irritant

Rabbit - Eyes - Severe irritant

Conclusion/Summary [Product] : Corrosive to eyes.

Respiratory corrosion/irritation

Conclusion/Summary [Product] : May cause respiratory irritation.

Respiratory or skin sensitization

Skin

Conclusion/Summary [Product] : No known significant effects or critical hazards.

Respiratory

Conclusion/Summary [Product] : No known significant effects or critical hazards.

Germ cell mutagenicity

Conclusion/Summary [Product] : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary [Product] : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary [Product] : No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Product/ingredient name

ammonium hydroxide

Result

SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)
(Respiratory tract irritation) - Category 3

Specific target organ toxicity (repeated exposure)

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

Aspiration hazard

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

Information on the likely routes of exposure

Dermal contact. Eye contact. Inhalation.

Section 11. Toxicological information

Potential acute health effects

- Eye contact** : Corrosive to eyes. Causes serious eye damage. Eye contact can result in temporary or permanent corneal damage and/or blindness. The full extent of damage to the eyes may not be known for 1 week after injury.
- Inhalation** : Harmful if inhaled. May cause respiratory irritation. May cause severe breathing difficulties. Serious effects may be delayed following exposure.
- Skin contact** : Corrosive to the skin. Causes severe burns. Contact with rapidly expanding gas may cause cold burns or frostbite.
- Ingestion** : Corrosive to the digestive tract. Causes burns.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
throat and stomach pain
bloating
nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : See above.
- Potential delayed effects** : In case of inhalation, symptoms may be delayed. Observation may be warranted. Pulmonary edema may occur several hours after exposure.

Long term exposure

- Potential immediate effects** : See above.
- Potential delayed effects** : See below.

Potential chronic health effects

Conclusion/Summary [Product] : No known significant effects or critical hazards.

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
AQUA AMMONIA 10-30% ammonia	N/A N/A	N/A N/A	N/A 2000	11 N/A	N/A N/A

Other information

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name

ammonium hydroxide

ammonia

Result

Acute - LC50 - Fresh water Fish - Western mosquitofish - *Gambusia affinis* - Adult 37 ppm [96 hours]

Acute - LC50 - Fresh water Fish - Carp - *Hypophthalmichthys nobilis* 300 µg/l [96 hours]

Acute - LC50 - Fresh water Daphnia - Water flea - *Daphnia magna* 0.53 ppm [48 hours]

Acute - EC50 - Marine water Algae - Sea Lettuce - *Ulva fasciata* - Zoea 29.2 mg/l [96 hours]

Chronic - NOEC - Marine water Fish - Sea bass - *Dicentrarchus labrax* 0.204 mg/l [62 days]

Conclusion/Summary [Product]

: Very toxic to aquatic life. Toxic to aquatic life with long lasting effects. Excessive nutrient runoff to a body of water may result in eutrophication.

Persistence and degradability

Not available.

Conclusion/Summary [Product]

: Not persistent. Readily biodegradable.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
AQUA AMMONIA 10-30%	-	-	Readily

Bioaccumulative potential

Not available.

Mobility in soil

Soil/Water partition coefficient

: Not available.

Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations








Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a

Section 13. Disposal considerations

safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	UN2672	UN2672	UN2672	UN2672
UN proper shipping name	AMMONIA SOLUTIONS, relative density between 0.880 and 0.957 at 15°C in water, with more than 10% but not more than 35% ammonia	AMMONIA SOLUTIONS, relative density between 0.880 and 0.957 at 15°C in water, with more than 10% but not more than 35% ammonia	AMMONIA SOLUTIONS, relative density between 0.880 and 0.957 at 15°C in water, with more than 10% but not more than 35% ammonia	AMMONIA SOLUTIONS, relative density between 0.880 and 0.957 at 15°C in water, with more than 10% but not more than 35% ammonia
Transport hazard class(es)	8  	8  	8  	8 
Packing group	III	III	III	III
Environmental hazards	Yes.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

DOT Classification

: Except when all or part of the transportation is by vessel, the marine pollutant mark does not apply to non-bulk packages transported domestically by motor vehicle, rail car or aircraft.

Reportable quantity 1000 lbs / 454 kg [133.26 gal / 504.44 L].

Packaging instruction Exceptions: 154. Non-bulk: 203. Bulk: 241.

Quantity limitation Passenger aircraft/rail: 5 L. Cargo aircraft: 60 L.

Special provisions 336, IB3, IP8, T7, TP2

Remarks The letters "RQ" must also be entered on the shipping paper either before or after the basic description when the quantity in a package exceeds the reportable quantity.

TDG Classification

: Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.40-2.42 (Class 8), 2.7 (Marine pollutant mark). The marine pollutant mark is not required when transported solely by road or rail.

IMDG

: The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA

: The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user : **Transport within user's premises:** 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.

Section 15. Regulatory information

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	: All components are listed or exempted.
Canada	: All components are listed or exempted.
China	: All components are listed or exempted.
Eurasian Economic Union	: Russian Federation inventory : All components are listed or exempted.
Japan	: Japan inventory (CSCL) : Not determined. Japan inventory (ISHL) : Not determined.
New Zealand	: All components are listed or exempted.
Philippines	: All components are listed or exempted.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
Thailand	: All components are listed or exempted.
Turkey	: Not determined.
United States	: All components are active or exempted.
Viet Nam	: All components are listed or exempted.

U.S. Federal regulations

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

Clean Water Act (CWA) 311: ammonium hydroxide; ammonia

Clean Air Act (CAA) 112 regulated toxic substances: ammonia

Clean Air Act Section 112 : Listed

(b) Hazardous Air Pollutants (HAPs)

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
ammonium hydroxide	100	Yes.	1000	-	1000	-
ammonia	10 - 30	Yes.	500	-	100	-

Section 15. Regulatory information

SARA 304 RQ : AQUA AMMONIA 10-30%
1000 lbs / 454 kg [133.26 gal / 504.44 L]

SARA 311/312

Classification : ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION - Category 1B
SERIOUS EYE DAMAGE - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
HNOC - Corrosive to digestive tract

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	ammonium hydroxide ammonia	1336-21-6 7664-41-7	100 10 - 30
Supplier notification	ammonium hydroxide ammonia	1336-21-6 7664-41-7	100 10 - 30

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations


Massachusetts : The following components are listed: ammonium hydroxide; ammonia

New York : The following components are listed: ammonium hydroxide; ammonia

New Jersey : The following components are listed: ammonium hydroxide; ammonia

Pennsylvania : The following components are listed: ammonium hydroxide; ammonia

California Prop. 65

 **WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Section 16. Other information

History

Date of issue/Date of revision : 12/4/2025

Date of previous issue : 12/4/2025

Version : 1

Key to abbreviations

: ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Procedure used to derive the classification

Classification	Justification
ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Expert judgment Expert judgment Expert judgment Expert judgment

 Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Other information

Supply chain partners must ensure they pass this SDS, and all other relevant safety information to their customers.

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