



SAFETY DATA SHEET

According to 29 CFR 1910.1200

AMMONIUM HYDROXIDE

Date of issue: September 01, 2023 Revision date: - Version: 1

SECTION 1.- IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier

Product form Liquid
Substance name Ammonium hydroxide
CAS No. 1336-21-6
Formula NH₄OH
Synonyms Ammonia water, ammonia solution, ammoniacal liquor, ammonia liquor, aqua ammonia, aqueous ammonia

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

Use of the substance/mixture Fertilizers

1.3 Details of the supplier of the safety data sheet

Química Pima, S.A. de C.V.
Del Cobre 20, Parque Industrial Hermosillo
Hermosillo, Sonora, México. C.P. 83297 Tel. 011 (662) 251-0010 / (662) 251-0316
ventas@qpima.com
www.qpima.com

1.4 Emergency telephone number

Emergency number CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

SECTION 2.- HAZARD IDENTIFICATION

2.1 GHS-US classification

Acute Oral Toxicity	4	H302
Skin Corrosion/Irritation	1A	H314
Serious Eye Damage/Eye Irritation	1	H318
Hazardous to Aquatic Environment (Acute)	1	H400

2.2 Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



Signal Word (GHS-US):

Danger

Hazard statement (GHS-US):

H302 Harmful if swallowed
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H400 Very toxic to aquatic life

Precautionary statements (GHS-US):

P101 If medical advice is needed, have a product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash your hands thoroughly after handling.



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P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P303+P361+P353 IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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 or doctor/physician.
P330 Rinse mouth.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.
P405 Store locked up.
P501 Dispose of the contents/container following federal, state, and local laws.

No data available
Not applicable

2.3 Other hazards

2.4 Unknown acute toxicity (GHS-US)

SECCIÓN 3.- COMPOSITION / INFORMATION OF INGREDIENTS

3.1 Substance

Name	Product identifier	%
Ammonium hydroxide	(CAS No.) 1336-21-6	> 26

3.2 Mixture

Not applicable

SECCIÓN 4.- FIRST AID MEASURE

4.1 Description of first aid measure

First-aid measures general

Check vital signs. Unconscious: keep airways clear and provide breathing assistance. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform CPR. Conscious victim with breathing difficulty: semi-upright position. Victim in shock: lying on back with legs slightly elevated. Vomiting: prevent choking or aspiration. Avoid cooling by covering the victim (without heating). Continue monitoring the victim. Provide psychological support. Keep the victim calm, and avoid physical strain. Depending on the victim's condition: seek medical attention/hospital. Never give anything by mouth to an unconscious person. If feeling unwell, seek medical attention (if possible, show the label).

First-aid measures after eye contact

Wash thoroughly with plenty of water for at least 15 minutes and consult a doctor. Continue rinsing eyes during transport to the hospital.



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First-aid measures after skin contact	Immediately remove contaminated clothing and shoes. Wash thoroughly with soap and plenty of water. Consult a doctor.
First-aid measures after inhalation	If inhaled, move the person to fresh air. If breathing has stopped, perform artificial respiration. Consult a doctor.
First-aid measures after ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a doctor.

4.2 Most important

Symptoms/injuries after inhalation	Can be harmful if inhaled.
Symptoms/injuries after skin contact	It causes burns to the skin.
Symptoms/injuries after eye contact	Causes burns to the eyes.
Symptoms/injuries after ingestión	Toxic if swallowed.
Chronic symptoms	The material is extremely destructive to tissue of the mucous membranes and upper respiratory tract.

4.3 Indications of any immediate medical attention and special treatment needed

Symptomatic treatment (decontamination, vital functions) is recommended, as no specific antidote is known.

SECCIÓN 5.- FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	Chemical powder extinguishers, CO ₂ , alcohol-resistant foam, and primarily water mist can be used. The choice of extinguishing medium depends on the magnitude of the fire.
Unsuitable extinguishing media	No data available

5.2 Special hazard arising from the substance or mixture

Fire hazard	Ammonium hydroxide is mostly water, so it is not combustible. In the presence of oils or other combustible materials, it increases the risk of fire.
Explosion hazard	Ammonium hydroxide is mostly water, so it is not combustible. However, it releases ammonia, a flammable gas with an autoignition temperature of 651°C, which, if accumulated in enclosed spaces, can form explosive mixtures with air.
Reactivity	No data available

5.3 Advice for firefighters

Precautionary measures fire	In the presence of oils or other combustible materials, it increases the risk of fire.
Firefighting instructions	Use sprayed water to keep exposed containers cool. Do not apply water directly or into the containers. Cool containers and storage tanks with water mist. Use water mist to minimize the dispersion of vapors in the air if there is a spill. Isolate a 50-meter radius for small spills and 800 meters in all directions if a tanker truck or tanker is involved in a fire. Retreat if safety valves open or if there are noises, deformations, or discoloration in the containers. Assess the risks and make your attack plan.
Protection during firefighting	Use self-contained breathing apparatus (SCBA) and chemical splash-resistant protective clothing. Firefighter turnout gear does not provide sufficient protection in fires involving this substance.

SECCIÓN 6.- ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures

6.1.1 For non-emergency personnel

Protective equipment	Wear appropriate protective clothing and personal protective equipment (see section 8).
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Emergency procedures

Wear appropriate protective clothing and personal protective equipment.

Measures in case of dust release

Ensure proper ventilation.

6.1.2 For emergency responders

Extinguish nearby sources of ignition and those in the direction of the wind. Observe the wind direction. Wear appropriate protective clothing and personal protective equipment. Ensure proper ventilation.

6.2 Environmental precautions

Prevent further leaks or spills if it can be done safely. Do not allow the product to enter the sewer system. Discharge into the environment should be avoided.

6.3 Methods and material for containment and cleaning up

Method for containment

Contain and collect any contaminated material. Avoid runoff into sewers, and waterways, or disposing in areas where surface or groundwater may be affected.

Method for cleaning up

Collect the product. If uncontaminated, recover and reuse as a product. Contaminated material should be placed in a container for disposal following local regulations.

6.4 Reference to other sections

For further information refer to section 8: Exposure-controls/personal protection

SECTION 7.- HANDLING AND STORAGE

7.1 Precautions for safe handling

Precautions for safe handling

Avoid contact with skin and eyes. Prevent the formation of aerosols, vapors, or mists. Provide adequate ventilation in areas where vapors, aerosols, or fumes may form. Stay away from ignition sources. Do not smoke. Keep away from heat and ignition sources. Take normal preventive measures against fire. Avoid the accumulation of static charges.

Hygiene measures

Handle according to safety regulations for chemical products. Wearing closed work clothing is an additional requirement in the personal protective equipment instructions. While using, eating, drinking, or smoking is prohibited. Wash hands and/or face before breaks and at the end of work. Gloves should be regularly checked and replaced if necessary (e.g., in case of small holes). Remove contaminated clothing immediately. Wash contaminated clothing before reuse. Store work clothes separately.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Store only in the original container in a cool, well-ventilated place, away from incompatible materials. Keep the container tightly closed when not in use.

Incompatible products

It reacts with many heavy metals (such as silver, copper, lead, and zinc) and their salts to form explosive compounds and flammable and explosive hydrogen gas. It reacts violently with strong acids (such as hydrochloric, sulfuric, and nitric acids); dimethyl sulfate, and halogens. It reacts with strong bases (such as sodium hydroxide and potassium hydroxide) to produce gaseous ammonia.

Heat-ignition

Not available

Storage area

Store only in the original container in a cool, well-ventilated place, away from incompatible materials.

Special rules on packaging

Keep the container tightly closed when not in use. Store in a tightly sealed, dry, clean, and properly labeled container. Comply with applicable regulatory requirements. Secure fragile packaging in sturdy containers.

Packaging materials

No data available



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7.3 Specific end use(s)

No additional information is available

SECTION 8.- EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ammonium hydroxide 1336-21-6	25 mg/m ³	25 mg/m ³	300 mg/m ³

8.2 Exposure controls

Appropriate engineering controls

The eye wash stations and safety showers should be available nearby during use/handling. Provide exhaust ventilation or other engineering controls to maintain vapor or dust concentrations below the applicable occupational exposure limits indicated above. It is recommended that all dust control equipment such as local ventilation and material handling systems involved in handling this product contain explosion relief vents an explosion suppression system or an oxygen-deficient atmosphere. Ensure that dust handling systems are designed to prevent dust escape into the work area.

Personal protective equipment

Safety goggles, face shield, gloves, and respirator equipped with an ammonia filter or self-contained breathing apparatus.

Material for protective clothing

Neoprene, polychloroprene.

Hand protection

Use neoprene gloves

Eye protection

Face shield or chemical splash goggles.

Skin and body protection

According to the exposure conditions, use encapsulated suit, neoprene, or polychloroprene integral suit.

Respiratory protection

For exposures up to 100 ppm, use a respirator equipped with an ammonia filter. For exposures between 100 and 300 ppm, use a gas mask with an ammonia filter. For concentrations greater than 300 ppm, use a self-contained breathing apparatus.

Environmental exposure controls

Avoid release to the environment.

SECTION 9.- PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Colorless liquid
Odor	Ammonia
Color	Colorless
Molecular mass	35.05 g/mol
Odor threshold	No data available
pH	11.0 (20 °C)
pH solution	No data available
Relative evaporation rate (butyl acetate = 1)	No data available
Melting/Freezing point	-60 °C
Boiling point	38 – 100 °C (1013 hPa)



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Flash point	No data available
Self-ignition temperature	651 °C
Decomposition temperature	> 450 °C
Flammability (solid, gas)	No data available
Vapor pressure	115 mmHg at 20 °C
Relative vapor density at 20 °C	0.6 – 1.2
Relative density	0.91 – 0.92 (15 °C)
Solubility	100% soluble in water
Log Pow	No data available
Log Kow	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Explosive limits	25 % V (upper limit) 16 % V (lower limit)

9.2 Other information

No additional information is available

SECTION 10.- STABILITY AND REACTIVITY

10.1 Reactivity	No reactions or product decompositions are expected under normal storage conditions.
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	No data available
10.4 Conditions to avoid	In the presence of oils or other combustible materials, the risk of fire increases. Mercury manometers should not be used, nor should materials with copper alloys.
10.5 Incompatible materials	It reacts with many heavy metals (such as silver, copper, lead, and zinc) and their salts to form explosive compounds and flammable and explosive hydrogen gas. It reacts violently with strong acids (such as hydrochloric, sulfuric, and nitric acids), dimethyl sulfate, and halogens. It reacts with strong bases (such as sodium hydroxide and potassium hydroxide) to produce gaseous ammonia.
10.6 Hazardous decomposition products	If heated, it releases ammonia, and it can release nitrogen oxides in case of decomposition by heat. Nitrogen and hydrogen at temperatures above 450°C.

SECTION 11.- TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Likely routes of exposure	Skin and eye contact, inhalation, and ingestion.
Acute toxicity	Toxic if ingested.
Skin corrosion/irritation	It can be harmful if absorbed through the skin. It causes burns to the skin.
Serious eye damage/irritation	It causes burns to the eyes.
Respiratory or skin sensitization	It can be harmful if inhaled. The material is extremely destructive to the tissues of the mucous membranes and the upper respiratory tract.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.



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Reproductive toxicity

Not classified.

Specific target toxicity (single exposure)

The product causes severe destruction of the tissues of the mucous membranes, the upper respiratory tract, the eyes, and the skin.

Specific target toxicity (repeat exposure)

Burning sensation, Cough, Wheezing, Laryngitis, Respiratory failure, Spasm, Inflammation and edema of the larynx, Spasm, Inflammation and edema of the bronchi, Pneumonitis, Pulmonary edema.

Aspiration hazard

The material is extremely destructive to the tissues of the mucous membranes and the upper respiratory tract.

Name	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀ inhalation
Ammonium hydroxide	350 mg/kg (rat)	No data available	No data available

SECTION 12.- ECOLOGICAL INFORMATION

12.1 Toxicity

Ecology – General

Classification concerning the environment: not applicable.

Ecology – Air

Not classified as dangerous for the ozone layer.

Ecology – Water

This material has demonstrated toxicity to aquatic organisms:

EC₅₀ *Daphnia magna* (32 ppm, 50 h).

EC₅₀ *Oncorhynchus tshawytscha* (3.5 ppm, 3 d).

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Other adverse effects

Other information

An environmental hazard cannot be excluded in the case of non-professional handling or disposal. Very toxic to aquatic organisms.

SECCIÓN 13.- INFORMACIÓN RELATIVA A LA ELIMINACIÓN DE LOS PRODUCTOS

13.1 Waste treatment methods

Waste treatment methods

Offer surplus and non-usable solutions to an accredited waste disposal company. For the disposal of this product, contact an authorized professional service. Dissolve or mix the product with a combustible solvent and burn it in an incinerator suitable for chemical products equipped with an afterburner and scrubber.

Waste disposal recommendations

Dispose of the container or the water used to clean them safely for the environment. Pressing, perforating, or other measures to prevent unauthorized use of used containers are recommended.

SECTION 14.- TRANSPORT INFORMATION

14.1 UN Number

2672



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14.2 UN proper shipping name

AMMONIA SOLUTION, RELATIVE DENSITY BETWEEN 0.880 AND 0.957 AT 15 DEGREES C IN WATER, WITH MORE THAN 10 PERCENT BUT NOT MORE THAN 35 PERCENT AMMONIA

14.3 Class of hazards in transportation

8

14.4 Packaging group

III

14.3 Additional information

Other information

No supplementary information is available.

Overland transport

No additional information is available.

Transport by sea

No additional information is available.

Air transport

No additional information is available.

SECTION 15.- REGULATORY INFORMATION

International inventories

TSCA All ingredients are listed.

TSCA – Toxic Substances Control Act Inventory Section 8(b).

DSL/NDSL - Domestic Substance List/Non-Domestic Substance List.

US Federal Regulations: Not listed in the Toxic Substances Control Act Inventory

SARA 311/312 Categories.

Acute Health Hazard Yes Chronic Health Hazard No Fire Hazard No

Sudden Hazardous Pressure Release No Reactive Hazard No

Clean Water Act. No data available

CERCLA. No data available

Official Mexican Standard NOM-002-SCT/2011, List of substances and materials most commonly transported.

SECTION 16.- OTHER INFORMATION

NFPA	NFPA health Hazard	3	NFPA fire Hazard	1	NFPA instability Hazard	0	NFPA Special hazard	-
HMIS III	Health	3	Flammability	1	Physical	0	Personal protection	H

Splash goggles, gloves, apron, and vapor respirator.

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Made for: Química Pima, S.A. de C.V. Del Cobre No. 20 Parque Industrial. Hermosillo, Sonora, México. 83297.

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Revision note: -

IMPORTANT NOTE: Information in this SDS is from available published sources and is believed to be accurate, but is not exhaustive and will be used only as a guide, which is based on current knowledge of the chemical substance or mixture and applied to the appropriate product for safety precautions. No warranty, express or implied, is made and Pima Chemicals & Fertilizers, LLC and Quimica Pima, S.A. de C.V. assumes no liability resulting from the use of this SDS. The user must determine the suitability of this information for his application.

End of Safety Data Sheet