

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Substance

Product Name: Aqua Ammonia

Product Name: Ammonium Hydroxide Solution

CAS No: 1336-21-6

Formula: NH_4OH (aq)

Synonyms: Ammonia, aqueous solution

Ammonium hydroxide (NH_4OH)

Ammonia aqueous

Ammonia solution

AMMONIUM HYDROXIDE

Ammonia, aqueous

Ammonia solutions

Ammonia...%

Intended Use of the Product

Fertilizer; extracting metals from their ores; manufacturing of plastics, fibres, resins, explosives, detergents, pesticides, pharmaceuticals, ammonium compounds, and other chemicals.

Name, Address, and Telephone of the Responsible Party

Manufacturer

CHEMTRADE LOGISTICS INC.

155 Gordon Baker Road

Suite 300

Toronto, Ontario M2H 3N5

For MSDS Info: (416) 496-5856

www.chemtradelogistics.com

Emergency Telephone Number

Emergency number :

Canada: CANUTEC +1-613-996-6666 / US: CHEMTREC +1-800-424-9300

Chemtrade Emergency Contact: (866) 416-4404

For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Acute Tox. 4 (Oral) H302

Skin Corr. 1A H314

Eye Dam. 1 H318

STOT SE 3 H335

Aquatic Acute 1 H400

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) :



GHS05



GHS07



GHS09

Signal Word (GHS-US) :

Danger

Hazard Statements (GHS-US) :

H302 - Harmful if swallowed

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

H335 - May cause respiratory irritation

H400 - Very toxic to aquatic life

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Precautionary Statements (GHS-US) : P260 - Do not breathe gas, vapors, fume, mist, spray
P261 - Avoid breathing fume, mist, spray, vapors
P264 - Wash clothing thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P273 - Avoid release to the environment
P280 - Wear eye protection, face protection, protective gloves, protective clothing
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position 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
P312 - Call a POISON CENTER/doctor/physician if you feel unwell
P321 - Specific treatment (see Section 4)
P330 - If swallowed, rinse mouth
P363 - Wash contaminated clothing before reuse
P391 - Collect spillage
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to local, regional, national, and international regulations

Other Hazards

Other Hazards Not Contributing to the Classification: Not applicable

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Name	Product identifier	% (w/w)	Classification (GHS-US)
Water	(CAS No) 7732-18-5	65 - 90	Not classified
*Ammonium hydroxide	(CAS No) 1336-21-6	10 – 30 15 - 40	Acute Tox. 4 (Oral), H302 Skin Corr. 1A, H314 STOT SE 3, H335 Aquatic Acute 1, H400

*More than one of the ranges of concentration prescribed by Controlled Products Regulations has been used where necessary, due to varying composition.

Full text of H-phrases: see section 16

Mixture

Not applicable

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: Using proper respiratory protection, immediately move the exposed person to fresh air. Keep at rest and in a position comfortable for breathing. Give oxygen or artificial respiration if necessary. Seek immediate medical advice. Symptoms may be delayed.

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Skin Contact: Remove/Take off immediately all contaminated clothing. Immediately flush skin with plenty of water for at least 60 minutes. Seek medical attention immediately if exposure is severe. Obtain medical attention if irritation develops or persists. Wash contaminated clothing before reuse. Do not apply salves or ointments to the affected area.

Eye Contact: Rinse cautiously with water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

Most Important Symptoms and Effects Both Acute and Delayed

General: Harmful if swallowed. Corrosive. Causes burns.

Inhalation: Contact may cause immediate severe irritation progressing quickly to chemical burns. Danger of serious damage to health by prolonged exposure through inhalation. May cause pulmonary edema. Symptoms may be delayed.

Skin Contact: Contact may cause immediate severe irritation progressing quickly to chemical burns.

Eye Contact: Contact may cause immediate severe irritation progressing quickly to chemical burns. Can cause blindness.

Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. Swallowing a small quantity of this material will result in serious health hazard.

Chronic Symptoms: Repeated or prolonged inhalation may damage lungs. Prolonged and repeated contact will eventually cause permanent tissue damage. Repeated or prolonged exposure may damage kidneys.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If medical advice is needed, have product container or label at hand. Acute respiratory effects, including pulmonary edema, may be delayed. Pneumonitis should be anticipated after inhalation or ingestion. If severe exposure is suspected, observe for 48-72 hours for delayed pulmonary edema.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Water spray.

Unsuitable Extinguishing Media: Not available

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable. Under conditions of fire this material may produce: Nitrogen oxides. Nitrogen. Ammonia.

Explosion Hazard: Ammonia vapor concentrations between 16% and 25% can explode on contact with an ignition source.

Reactivity: Ammonium hydroxide reacts with many heavy metals and their salts forming explosive compounds. It attacks many metals forming flammable/explosive gas. The solution in water is a strong base, it reacts violently with acids.

Advice for Firefighters

Precautionary Measures Fire: Not available

Firefighting Instructions: Keep upwind. Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Firefighters must use full bunker gear including NIOSH-approved positive-pressure self-contained breathing apparatus to protect against potential hazardous combustion and decomposition products.

Hazardous Combustion Products: Not available

Other information: Do not allow run-off from fire fighting to enter drains or water courses.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures Not available

For Non-Emergency Personnel

Protective Equipment: Use recommended respiratory protection. Wear suitable protective clothing, gloves and eye/face protection.

Emergency Procedures: Stop leak if safe to do so. Eliminate ignition sources. Evacuate unnecessary personnel. Ventilate area. Keep upwind.

For Emergency Personnel

Protective Equipment: Use recommended respiratory protection. Wear suitable protective clothing, gloves and eye/face protection.

Emergency Procedures: Stop leak if safe to do so. Eliminate ignition sources. Evacuate unnecessary personnel. Ventilate area.

Environmental Precautions

Avoid release to the environment. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

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Methods for Cleaning Up: Eliminate all ignition sources. Ventilate area. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Collect absorbed material and place into a sealed, labelled container for proper disposal. Practice good housekeeping - spillage can be slippery on smooth surface either wet or dry.

Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Wash contaminated clothing before reuse.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Detached outside storage is preferable. Store away from oxygen and oxidizers.

Storage Area: Store in dry, cool area. Store in a well-ventilated place. Keep away from combustible materials. Keep away from sources of ignition - No smoking. Protect from high temperatures.

Specific End Use(s)

Fertilizer; extracting metals from their ores; manufacturing of plastics, fibres, resins, explosives, detergents, pesticides, pharmaceuticals, ammonium compounds, and other chemicals.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

No Occupational Exposure Limits (OELs) have been established for this product or its chemical components.

Exposure Controls

Appropriate Engineering Controls: Provide sufficient ventilation to keep ammonia vapors below the permissible exposure limit. Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal Protective Equipment: Face shield. Protective clothing. Gloves. Insufficient ventilation: wear respiratory protection.

Materials for Protective Clothing: Not available

Hand Protection: Impermeable protective gloves.

Eye Protection: Face shield.

Skin and Body Protection: Wear suitable protective clothing. Chemical resistant suit. Rubber apron, boots.

Respiratory Protection: For exposures at or below 300 ppm use a NIOSH-approved, full-face, negative-pressure respirator fitted with ammonia vapor cartridges. For exposure concentrations above 300 ppm, use a full-face, positive-pressure, self-contained breathing apparatus.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Clear
Odor	: Ammonia
Odor Threshold	: 0.043 - 5 ppm @ 30% (w/w).
pH	: 13 @ 10%/ 11.6 @ 1N.
Relative Evaporation Rate (butylacetate=1)	: Not available
Melting Point	: Not applicable
Freezing Point	: -72.4°C (-98.3°F) @ 30% (w/w). -73°C (-100°F) @ 10 - 35% (w/w). -77°C (-107°F) @ 27 - 30% (w/w).
Boiling Point	: 27.2°C (81°F) @ 30% (w/w). 38°C (100°F) @ 10 - 35% (w/w).
Flash Point	: Not available
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not applicable
Lower Flammable Limit	: Not available

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Upper Flammable Limit	: Not available
Vapor Pressure	: 63.3 kPa (475 mm Hg) (at 20°C) @ 30% (w/w). 48 kPa (360 mm Hg) (at 20°C) @ 10 - 35% (w/w).
Relative Vapor Density at 20 °C	: 0.618 @ 15°C (59°F) (Air=1) @ 30% (w/w). 0.6 - 1,2 (Air = 1) @ 10 - 35% (w/w). 0.59 (Air = 1) @ 27 - 30% (w/w).
Relative Density	: 0.895 (Water = 1) @ 30% (w/w). 1.9 @ 10 - 35% (w/w). 0.9 @ 27 - 30% (w/w). 0.898 @ 28% (w/w). 0.8974 @ 29.4% (w/w).
Specific Gravity	: 0.895 g/cm ³
Solubility	: Water: Miscible
Partition coefficient: n-octanol/water	: Not available
Viscosity	: Not available
Explosion Data – Sensitivity to Mechanical Impact	: Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	: Not expected to present an explosion hazard due to static discharge.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Ammonium hydroxide reacts with many heavy metals and their salts forming explosive compounds. It attacks many metals forming flammable/explosive gas. The solution in water is a strong base, it reacts violently with acids.

Chemical Stability: Stable at standard temperature and pressure.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Keep away from heat. Avoid ignition sources.

Incompatible Materials: Oxidizers. Avoid contact with : halogens (F, Cl, Br, I), gold, silver, mercury, hypochlorites, copper and its alloys, aluminum alloys, galvanized surfaces. May form shock sensitive compounds that may explode when dry.

Hazardous Decomposition Products: Under conditions of fire this material may produce: Ammonia. Nitrogen oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Harmful if swallowed.

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Causes severe skin burns and eye damage.

pH: 13 @ 10%/ 11.6 @ 1N.

Serious Eye Damage/Irritation: Causes serious eye damage.

pH: 13 @ 10%/ 11.6 @ 1N.

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not available

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): May cause respiratory irritation.

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Contact may cause immediate severe irritation progressing quickly to chemical burns. Danger of serious damage to health by prolonged exposure through inhalation. May cause pulmonary edema. Symptoms may be delayed.

Symptoms/Injuries After Skin Contact: Contact may cause immediate severe irritation progressing quickly to chemical burns.

Symptoms/Injuries After Eye Contact: Contact may cause immediate severe irritation progressing quickly to chemical burns. Can cause blindness.

Symptoms/Injuries After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. Swallowing a small quantity of this material will result in serious health hazard.

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Chronic Symptoms: Repeated or prolonged inhalation may damage lungs. Prolonged and repeated contact will eventually cause permanent tissue damage. Repeated or prolonged exposure may damage kidneys.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Ammonium hydroxide (1336-21-6)	
LD50 Oral Rat	350 mg/kg
Water (7732-18-5)	
LD50 Oral Rat	> 90000 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

Toxicity Not classified

Ammonium hydroxide (1336-21-6)	
LC50 Fish 1	8.2 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	0.66 mg/l (Exposure time: 48 h - Species: water flea)
EC50 Daphnia 2	0.66 mg/l (Exposure time: 48 h - Species: Daphnia pulex)

Persistence and Degradability

Aqua Ammonia (1336-21-6)	
Persistence and Degradability	Product is biodegradable.

Bioaccumulative Potential

Aqua Ammonia (1336-21-6)	
Bioaccumulative Potential	Not expected to bioaccumulate.

Mobility in Soil Not available

Other Adverse Effects Not available

SECTION 13: DISPOSAL CONSIDERATIONS

Sewage Disposal Recommendations: This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, and international regulations.

SECTION 14: TRANSPORT INFORMATION

14.1 In Accordance with DOT

Proper Shipping Name : AMMONIA SOLUTIONS, 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

Hazard Class : 8

Identification Number : UN2672

Label Codes : 8

Packing Group : III

ERG Number : 125

Additional Information : Ammonium hydroxide is not listed as a marine pollutant by DOT.



14.2 In Accordance with IMDG

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

Hazard Class : 8

Identification Number : UN2672

Packing Group : III

Label Codes : 8

EmS-No. (Fire) : F-A

EmS-No. (Spillage) : S-B

Additional Information : Ammonium hydroxide is not listed as a marine pollutant by IMDG.



14.3 In Accordance with IATA

Proper Shipping Name : AMMONIA SOLUTION

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Packing Group : III
Identification Number : UN2672
Hazard Class : 8
Label Codes : 8
ERG Code (IATA) : 8L



14.4 In Accordance with TDG

Proper Shipping Name : AMMONIA SOLUTION, relative density between 0.880 and 0.957 at 15 °C in water, with more than 10 per cent but not more than 35 per cent ammonia

Packing Group : III
Hazard Class : 8
Identification Number : UN2672
Label Codes : 8
Additional Information : Ammonium hydroxide is not listed as a marine pollutant by TDG.



SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Aqua Ammonia (1336-21-6)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
Ammonium hydroxide (1336-21-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Water (7732-18-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

US State Regulations

Ammonium hydroxide (1336-21-6)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	

Canadian Regulations

Aqua Ammonia (1336-21-6)	
WHMIS Classification	Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects Class E - Corrosive Material
 	
Ammonium hydroxide (1336-21-6)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
Listed on the Canadian Ingredient Disclosure List	
WHMIS Classification	Class E - Corrosive Material Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects
Water (7732-18-5)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision date : 05/14/14
Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

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GHS Full Text Phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H335	May cause respiratory irritation
H400	Very toxic to aquatic life

Party Responsible for the Preparation of This Document

CHEMTRADE LOGISTICS, INC.

For MSDS Info: (416) 496-5856

Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA'S "Right to Know" (29 CFR 1910.1200) and Canada's WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Chemtrade and its affiliates assume no responsibility. Chemtrade is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.



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