

# Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.31.2014

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## Ammonium Hydroxide, ACS Grade

### SECTION 1: Identification of the substance/mixture and of the supplier

**Product name:** Ammonium Hydroxide, ACS Grade

**Manufacturer/Supplier Trade name:**

**Manufacturer/Supplier Article number:** S25159

**Recommended uses of the product and restrictions on use:**

**Manufacturer Details:**

AquaPhoenix Scientific, Inc  
9 Barnhart Drive, Hanover, PA 17331  
(717) 632-1291

**Supplier Details:**

Fisher Science Education  
6771 Silver Crest Road, Nazareth, PA 18064  
(724)517-1954

**Emergency telephone number:**

**Fisher Science Education**  
Emergency Telephone No.: 800-535-5053

### SECTION 2: Hazards identification

**Classification of the substance or mixture:**



**Corrosive**

Skin corrosion, category 1B



**Environmentally Damaging**

Acute hazards to the aquatic environment, category 1



**Irritant**

Specific target organ toxicity following single exposure, category 3

STOT SE 3.

AcAq Tox 1.

Skin Corr. 1B.

**Signal word:** Danger

**Hazard statements:**

Causes severe skin burns and eye damage.  
May cause respiratory irritation.  
Very toxic to aquatic life.

**Precautionary statements:**

If medical advice is needed, have product container or label at hand.  
Keep out of reach of children.  
Read label before use.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Avoid release to the environment.  
Wear protective gloves/protective clothing/eye protection/face protection.

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Use personal protective equipment as required.

Do not eat, drink or smoke when using this product.

Wash skin thoroughly after handling.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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/physician.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Collect spillage.

Specific treatment (see supplemental first aid instructions on this label).

Wash contaminated clothing before reuse.

Store locked up.

Store in a dry place.

Store in a well ventilated place. Keep container tightly closed.

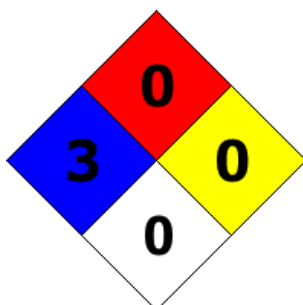
Dispose of contents and container as instructed in Section 13.

### Other Non-GHS Classification:

#### WHMIS



#### NFPA/HMIS



NFPA SCALE (0-4)

Health	3
Flammability	0
Physical Hazard	0
Personal Protection	X

HMIS RATINGS (0-4)

### SECTION 3: Composition/information on ingredients

Ingredients:		
CAS 1336-21-6	Ammonium Hydroxide, ACS	<30 %
Percentages are by weight		

### SECTION 4: First aid measures

#### Description of first aid measures

##### After inhalation:

Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position. Seek medical advice if discomfort or irritation persists. If breathing difficult, give oxygen. Give artificial respiration if necessary.

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#### After skin contact:

Wash affected area with soap and water. Rinse/flush exposed skin gently using water for 15-20 minutes. Seek medical advice if discomfort or irritation persists.

#### After eye contact:

Protect unexposed eye. Remove contact lens(es) if able to do so during rinsing. Immediately flush exposed eye(s) gently using water for 15-20 minutes. Immediately get medical assistance if irritation persists or if concerned.

#### After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual dilute with milk or water. Get medical assistance if irritation, discomfort or vomiting persists.

#### Most important symptoms and effects, both acute and delayed:

Irritation. Nausea. Headache. Shortness of breath.

#### Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician. Notes to Physician: Treat symptomatically.

### SECTION 5: Firefighting measures

#### Extinguishing media

##### Suitable extinguishing agents:

If in laboratory setting, follow laboratory fire suppression procedures. Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition.

**Unsuitable extinguishing agents:** None

#### Special hazards arising from the substance or mixture:

Combustion products may include carbon oxides or other toxic vapors. Thermal decomposition can lead to release of irritating gases and vapors. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

#### Advice for firefighters:

##### Protective equipment:

Use NIOSH-approved respiratory protection/breathing apparatus.

##### Additional information (precautions):

Move product containers away from fire or keep cool with water spray as a protective measure, where feasible. Use spark-proof tools and explosion-proof equipment.

### SECTION 6: Accidental release measures

#### Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Transfer to a disposal or recovery container. Avoid contact with skin, eyes and clothing. Use spark-proof tools and explosion-proof equipment. Use respiratory protective device against the effects of fumes/dust/aerosol. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Protect from heat. Stop the spill, if possible. Contain spilled material by diking or using inert absorbent.

#### Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13.

#### Methods and material for containment and cleaning up:

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Neutralize with 5% Hydrochloric acid. Let stand over night and decant mixture to drain with excess water. Dispose of remaining solid as normal refuse. Place into properly labeled containers for recovery or disposal. If necessary, use trained response

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staff/contractor. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect solids in powder form using vacuum with (HEPA filter). Ventilate area of spill. Cover spill with mixture of clay, sand, and sodium carbonate or calcium carbonate. Scoop mixture into container and in fume hood, add cold water.

**Reference to other sections:** None

### SECTION 7: Handling and storage

#### Precautions for safe handling:

Wash hands after handling. Empty containers may be hazardous because they retain product residue. Follow good hygiene procedures when handling chemical materials. Do not eat, drink, smoke, or use personal products when handling chemical substances. If in a laboratory setting, follow Chemical Hygiene Plan. Use only in well ventilated areas. Avoid contact with eyes, skin, and clothing.

#### Conditions for safe storage, including any incompatibilities:

Protect from freezing and physical damage. Store below 25 C. Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store away from foodstuffs. Store away from oxidizing agents. Store in cool, dry conditions in well sealed containers. Store with like hazards. Keep container tightly closed.

### SECTION 8: Exposure controls/personal protection



#### Control Parameters:

1336-21-6, Ammonium Hydroxide, ACGIH TLV: 17 mg/m<sup>3</sup>.  
1336-21-6, Ammonium Hydroxide, OSHA PEL: 35 mg/m<sup>3</sup>.  
1336-21-6, Ammonium Hydroxide, OSHA TWA 25 ppm (18 mg/m<sup>3</sup>) ST 35 ppm (27 mg/m<sup>3</sup>).  
1336-21-6, Ammonium Hydroxide, ACGIH TWA 25 ppm (18 mg/m<sup>3</sup>) ST 35 ppm (27 mg/m<sup>3</sup>).

#### Appropriate Engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or dusts (total/respirable) below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above. Use under a fume hood. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

#### Respiratory protection:

Use suitable respiratory protective device when high concentrations are present. Use suitable respiratory protective device when aerosol or mist is formed. For spills, respiratory protection may be advisable. Local/general exhaust is recommended. If the TLV is exceeded, a full-face cartridge respirator may be worn up to 50 times the TLV or the maximum use concentration specified by the respirator supplier.

#### Protection of skin:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation being used/handled. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

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**Eye protection:** Safety glasses with side shields or goggles.

**General hygienic measures:** The usual precautionary measures are to be adhered to when handling chemicals. Keep away from food, beverages and feed sources. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases/fumes/dust/mist/vapor/aerosols. Avoid contact with the eyes and skin.

#### SECTION 9: Physical and chemical properties

<b>Appearance (physical state, color):</b>	Clear, colorless liquid.	<b>Explosion limit lower:</b>	Not Determined
		<b>Explosion limit upper:</b>	Not Determined
<b>Odor:</b>	Ammonia-like	<b>Vapor pressure at 20°C:</b>	115 at 20 C
<b>Odor threshold:</b>	Not Determined	<b>Vapor density:</b>	3.38
<b>pH-value:</b>	9 (Alkaline)	<b>Relative density:</b>	0.9
<b>Melting/Freezing point:</b>	- 72 C	<b>Solubilities:</b>	Infinite solubility in water.
<b>Boiling point/Boiling range:</b>	36 C	<b>Partition coefficient (n-octanol/water):</b>	Not Determined
<b>Flash point (closed cup):</b>	Not Determined	<b>Auto/Self-ignition temperature:</b>	Not Determined
<b>Evaporation rate:</b>	Not Determined	<b>Decomposition temperature:</b>	Not Determined
<b>Flammability (solid, gaseous):</b>	Not Determined	<b>Viscosity:</b>	a. Kinematic: Not Determined b. Dynamic: Not Determined
<b>Density at 20°C:</b>	0.9 g/cm <sup>3</sup> at 20 °C		

#### SECTION 10: Stability and reactivity

**Reactivity:** None

**Chemical stability:**

No decomposition if used and stored according to specifications.

**Possible hazardous reactions:** None

**Conditions to avoid:**

Store away from oxidizing agents, strong acids or bases.

**Incompatible materials:**

Strong oxidizers, acids, gold, mercury, halogens, silver, calcium hypochlorite bleaches.

**Hazardous decomposition products:**

Ammonia and nitrogen oxides.

#### SECTION 11: Toxicological information

**Acute Toxicity:**

**Oral:**

LD50: 350 mg/kg (rat) Ammonium Hydroxide (1336-21-6)

**Chronic Toxicity:** No additional information.

**Corrosion Irritation:** No additional information.

**Sensitization:** No additional information.

**Numerical Measures:** No additional information.

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**Carcinogenicity:** No additional information.

**Mutagenicity:** No additional information.

**Reproductive Toxicity:** No additional information.

### SECTION 12: Ecological information

#### Ecotoxicity:

Fish (acute 1336-21-6): 96 Hr LC50 Pimephales promelas: 8.2 mg/L

Crustacea (acute 1336-21-6): 48 Hr EC50 water flea: 0.66 mg/L; 48 Hr EC50 Daphnia pulex: 0.66 mg/L

Ecotoxicity: Very toxic to aquatic life

#### Persistence and degradability:

Readily degradable in the environment.

**Bioaccumulative potential:** No additional information.

**Mobility in soil:** No additional information.

**Other adverse effects:** No additional information.

### SECTION 13: Disposal considerations

#### Waste disposal recommendations:

Product/containers must not be disposed together with household garbage. Dispose of remaining solid as normal refuse. Do not allow product to reach sewage system or open water. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product. Ventilate area of spill. Cover spill with mixture of clay, sand, and sodium carbonate or calcium carbonate. Scoop mixture into container and in fume hood, add cold water. Neutralize with 5% Hydrochloric acid. Let stand over night and decant mixture to drain with excess water.

### SECTION 14: Transport information

#### US DOT

##### UN Number:

ADR, ADN, DOT, IMDG, IATA

2672

##### Limited Quantity Exception:

None

##### Bulk:

**RQ (if applicable):** None

**Proper shipping Name:** Ammonia Solution.

**Hazard Class:** 8

**Packing Group:** III.

**Marine Pollutant (if applicable):** No additional information.

**Comments:** None

##### Non Bulk:

**RQ (if applicable):** None

**Proper shipping Name:** Ammonia Solution.

**Hazard Class:** 8

**Packing Group:** III.

**Marine Pollutant (if applicable):** No additional information.

**Comments:** None



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#### SECTION 15: Regulatory information

##### United States (USA)

###### SARA Section 311/312 (Specific toxic chemical listings):

Acute, Chronic

###### SARA Section 313 (Specific toxic chemical listings):

1336-21-6 Ammonium Hydroxide.

###### RCRA (hazardous waste code):

None of the ingredients are listed.

###### TSCA (Toxic Substances Control Act):

All ingredients are listed.

###### CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

1336-21-6 Ammonium Hydroxide, ACS 1000.

##### Proposition 65 (California):

###### Chemicals known to cause cancer:

None of the ingredients are listed.

###### Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

###### Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

###### Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

##### Canada

###### Canadian Domestic Substances List (DSL):

All ingredients are listed.

###### Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

###### Canadian NPRI Ingredient Disclosure list (limit 1%):

1336-21-6 Ammonium hydroxide.

#### SECTION 16: Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

**GHS Full Text Phrases:** None

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#### Abbreviations and Acronyms:

IMDG International Maritime Code for Dangerous Goods.  
PNEC Predicted No-Effect Concentration (REACH).  
CFR Code of Federal Regulations (USA).  
SARA Superfund Amendments and Reauthorization Act (USA).  
RCRA Resource Conservation and Recovery Act (USA).  
TSCA Toxic Substances Control Act (USA).  
NPRI National Pollutant Release Inventory (Canada).  
DOT US Department of Transportation.  
IATA International Air Transport Association.  
GHS Globally Harmonized System of Classification and Labelling of Chemicals.  
ACGIH American Conference of Governmental Industrial Hygienists.  
CAS Chemical Abstracts Service (division of the American Chemical Society).  
NFPA National Fire Protection Association (USA).  
HMIS Hazardous Materials Identification System (USA).  
WHMIS Workplace Hazardous Materials Information System (Canada).  
DNEL Derived No-Effect Level (REACH).

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