

# Safety Data Sheet

## 1. IDENTIFICATION:

**Product Name:** AMMONIA SOLUTION  
**Synonyms:** Ammonium Hydroxide Solutions; Ammonia Aqueous  
**CAS Number:** Mixture  
**HF Scientific Catalog Numbers:** 10198 W2T11994 U409  
**Product Use:** Analytical / Laboratory Reagent  
**Manufacturer:** HF Scientific, Inc  
**Address:** 3170 Metro Parkway Fort Myers, FL 33916


**General Information:** 888-203-7248  
**Transportation Emergency Number:** CHEMTREC® 24 hr US 800-424-9300  
CHEMTREC® 24 hr International 703-527-3887

## 2. HAZARDS IDENTIFICATION

### GHS Classification

Health	Environmental	Physical
Acute Toxicity: Category 3 Skin Irritation: Category 1B Eye Irritation: Category 1 Respiratory Sensitizer: Category 1	Aquatic Toxicity: 1	Flammable Liquid: No

### GHS Label

Pictogram:	Signal Word:
	<b>WARNING</b> <b>DANGER</b>
Hazard Statements	Precautionary Statements
Toxic if swallowed. Toxic if inhaled. Causes severe skin burns and eye damage. Causes serious eye damage. May cause allergy or asthmatic symptoms or breathing difficulties if inhaled. Very toxic to aquatic life.	IF SWALLOWED: Seek medical attention immediately. IF ON SKIN: Water flush immediately and seek medical attention. IF INHALED: Give respiratory support and seek medical attention. IF IN EYES: Irrigate immediately and seek medical attention STORE in a well-ventilated place. DISPOSE of contents/container in accordance with local, regional, national and international regulations.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	Cas Number	Weight %
Water	7732-18-5	82%
Ammonium Hydroxide	1336-21-6	18%

## 4. FIRST AID MEASURES

**Eye Contact:** Irrigate immediately and seek medical attention.  
**Skin Contact:** Water flush immediately and seek medical attention.  
**Inhalation:** Remove to Fresh Air. If Not Breathing, Give Artificial Respiration. Seek Medical Attention.  
**Ingestion:** Seek medical attention immediately.

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media:** Use any means suitable for extinguishing surrounding fire. Use water spray to blanket fire, cool fire exposed containers, and to flush non-ignited spills or vapors away from fire.

**Fire Fighting Procedures:** Wear self contained breathing apparatus and protective clothing.

**Unusual Fire and Exposure Hazards:** N/A

**Combustion Products:** Emits toxic fumes of ammonia and nitric oxides when heated to decomposition.

**NFPA Classification** HEALTH: 2 FLAMMABLE: 0 REACTIVITY: 0

## 6. ACCIDENTAL RELEASE MEASURES

Ventilate and evacuate area. Clean-up personnel require protective clothing and respiratory protection from vapors. Allow only qualified personnel to handle the spill. Contain and recover liquid when possible. Spills may be neutralized with dilute hydrochloric acid or dilute sulfuric acid and discharged to sewer with large amounts of water. Regulation for pH, ammonia content and salt for effluents must be considered. Do not flush directly into sewers. Alternately, spills may be absorbed with dry inert material and collected for disposal in a RCRA approved facility. Reportable quantity (RQ) (CWA / CERCLA): 1000 lbs.

## 7. HANDLING AND STORAGE

**Handling:** Use only in adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid breathing fumes. Wash thoroughly after handling.  
**Storage:** Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Separate from incompatibilities. Store below 25C. Protect from direct sunlight. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Limits:** OSHA Permissible Exposure Limit (PEL): 50 ppm (TWA)  
ACGIH Threshold Limit Value (TLV): 25 ppm (TWA); 35 ppm (STEL)

**Engineering Controls:** Local exhaust ventilation to keep below exposure limits.

**Personal Protective Equipment:**

**Eyes:** Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

**Skin:** Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Neoprene and nitrile rubber are recommended materials. Polyvinyl alcohol is not recommended.

**Respiratory:** Local exhaust ventilation to keep below exposure limits. If the exposure limit is exceeded, a full face piece respirator with an ammonia/methylamine cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Flashpoint:** N/A

**Autoignition Temperature:** 1204°F

**Boiling Point:** -28°F

**Melting Point:** -108°F

**Vapor Pressure:** 8.5 atm

**Vapor Density:** 0.60 as NH<sub>3</sub>

**% Solubility in Water:** 34%

**Pour Point:** N/A

**Molecular Formula:** NH<sub>4</sub>OH

**Odor / Appearance:** Clear liquid with ammonia odor

**Lower Flammability Limit:** 15%

**Upper Flammability Limit:** (200°F) 28%

**Specific Gravity:** 0.90

**% Volatile:** N/A

**Evaporation Rate (Water=1):** N/A

**Viscosity:** N/A

**Octanol / Water Partition Coefficient:** N/A

**pH:** 11.6

**Molecular Weight:** 35.1 AMU

## 10. STABILITY AND REACTIVITY

**Stability / Incompatibility:** Stable under ordinary conditions of use and storage. Incompatible with acids, acrolein, dimethyl sulfate, halogens, silver nitrate, propylene oxide, nitromethane, silver oxide, silver permanganate, oleum, beta-propiolactone and most common metals.

**Hazardous Reactions / Decomposition Products:** Emits toxic fumes of ammonia and nitric oxides when heated to decomposition. Hazardous Polymerization will not occur.

## 11. TOXICOLOGICAL INFORMATION

**Symptoms of Overexposure:** Symptoms may include pain in the mouth, chest, and abdomen, with coughing, vomiting and collapse.

**Acute Effects:** May cause irritation to the respiratory tract, symptoms may include coughing, sore throat, and labored breathing. High concentrations may cause laryngitis, tracheitis, pulmonary edema, chest pains or pneumonitis. Toxic if ingested. May cause corrosion to the esophagus and stomach with perforation and peritonitis. May cause skin burns with vesication. Vapor may cause irritation to the eyes. Splashes may cause severe pain and eye injuries such as glaucoma, corneal scars, iris atrophy, and cataracts.

**Eye Contact:** Serious eye damage.

**Skin Contact:** Severe burns to skin.

**Inhalation:** May cause allergy or asthmatic symptoms or breathing difficulties if inhaled.

**Ingestion:** Toxic if ingested.

**Target Organs Effects:** Eyes, Skin, Gastrointestinal and Respiratory Tract

**Chronic Effects:** None

**Medical Conditions Aggravated by Exposure:** Pre-Existing Eye, Skin, or Respiratory System Conditions

**Acute Toxicity Values:** OSHA Permissible Exposure Limit (PEL): 50 ppm (TWA)  
ACGIH Threshold Limit Value (TLV): 25 ppm (TWA); 35 ppm (STEL)

## 12. ECOLOGICAL INFORMATION

Environmental Fate: This material is not expected to significantly bioaccumulate.

Environmental Toxicity:

24 Hr LC50 rainbow trout: 0.008 mg/L;

96 Hr LC50 fathead minnow: 8.2 mg/L;

48 Hr LC50 bluegill: 0.024 mg/L;

48 Hr EC50 water flea: 0.66 mg/L

## 13. DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. TRANSPORT INFORMATION

**Proper Name:** Ammonia Solution

**Hazard Class:** 8

**Identification Number:** UN2672

**Packing Group:** III

## 15. REGULATORY INFORMATION

**CERCLA:** 1000

**SARA/Title III:** None

**TSCA Inventory:** None

**Cal. Proposition 65:** None

**WHMIS:** N/A

**DSL:** Yes

**NDSL:** N/A

## 16. OTHER INFORMATION

THE ABOVE INFORMATION IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. ALL PRODUCTS ARE OFFERED IN ACCORDANCE WITH THE MANUFACTURER'S CURRENT PRODUCTION SPECIFICATIONS AND ARE INTENDED SOLELY FOR USE IN ANALYTICAL TESTING. THE MANUFACTURER SHALL IN NO EVENT BE LIABLE FOR ANY INJURY, LOSS OR DAMAGE RESULTING FROM THE HANDLING, USE OR MISUSE OF THESE PRODUCTS.