

**PRODUCT NAME: AQUA AMMONIA (15% - 30% as NH<sub>3</sub>)**

Transportation Emergencies, Call (800) 424-9300 (CHEMTREC)  
Health Emergencies, contact Your Local Poison Center  
**Caution:** Causes irritation. Avoid contact with skin, eyes or clothing.

### I. PRODUCT IDENTIFICATION

**Product Name:** Aqua Ammonia **Formula:** See below  
**Chemical Name:** Ammonium Hydroxide, Ammonia Solution  
**CAS Number:** 1336-21-6

### II. COMPONENT DATA

<b>Typical Composition</b>	<b>CAS Reg #'s</b>	<b>%</b>
Ammonia (NH <sub>3</sub> )	7664-41-7	15-30.5
Water	7732-18-5	Balance

**Exposure Standard:** ACGIH has established a TLV of 25 ppm as NH<sub>3</sub>. OSHA has established a PEL of 50 ppm as NH<sub>3</sub>.

NFPA Hazard Ratings: Health = 3 Flammability = 1 Reactivity = 0  
0 = Least; 1 = Slight; 2 = Moderate; 3 = High; 4 = Extreme;

### III. PHYSICAL DATA

**Appearance and Odor:** Clear, colorless liquid with pungent odor.

**Boiling Point:** 86.0 °F – 138.0 °F @ 14.7 PSIA

**Melting Point:** N/A

**Vapor Density (air = 1):** 0.6 @ 32°F

**Vapor Pressure:** 210 – 720 mm Hg @ 80°F

**Solubility in water:** 100%

**Specific Gravity (H<sub>2</sub>O = 1):** 0.9424 (15% Solution); 0.9275 (19% Solution); 0.9078 (25% Solution); 0.8930 (30.5% Solution) - @ 60°F

**pH:** >12

**Other (i.e. wt. per gallon):** 7.87 (15% Solution); 7.74 (19% Solution); 7.58 (25% Solution); 7.45 (30.5% Solution) lbs/gallon

#### IV. FIRE AND EXPLOSION HAZARD INFORMATION

<b>Flash Point:</b>	N/A
<b>Lower Explosive Limit:</b>	16% by volume Ammonia gas
<b>Upper Explosive Limit:</b>	25% by volume Ammonia gas
<b>Autoignition Temperature:</b>	850 °C; 1560 °F
<b>Extinguishing Media:</b>	Water spray or fog type streams. Chemical or CO2 should be used on small fires only.
<b>Special Firefighting Procedures:</b>	Stop the flow of liquid. Use water to keep fire exposed containers cool and to protect men affecting the shut off. Wear self-contained breathing apparatus and full protective clothing. Approach fire upwind and evacuate area downwind if needed.
<b>Unusual Fire and Explosion Hazards:</b>	The presence of oil or other combustible materials will increase the fire hazard. Th explosive (flammable) range of ammonia is broadened by a mixture of oxygen replacing air, and by temperature pressure higher than atmospheric.

#### V. REACTIVITY INFORMATION

<b>Stability:</b>	Stable
<b>Conditions to Avoid:</b>	Heat, open flames, and electrical equipment and fixtures which are not vapor proof or grounded.
<b>Incompatibility:</b>	Strong acids, most common metals, strong oxidizing agents, mercury, chlorine, bromine, iodine, calcium, silver oxide, hypochlorite, bronze, brass, copper, and aluminum.
<b>Hazardous Decomposition Products:</b>	Ammonia is highly reactive, easily undergoing oxidation, substitution, and additional reactions. Combustion of ammonia will yield small amounts of nitrogen and water.
<b>Hazardous Polymerization:</b>	Will not occur.

## VI. PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

- Ventilation:** Local exhaust is essential. Spark-proof fans desirable with mechanical ventilation. Ducts should be located at ceiling level and lead upwards to the outside. Local exhaust must be adequate to reduce ammonia concentration below 25 ppm.
- Eye:** Tight fitting chemical safety and splash-proof goggles and/or a splash-proof face shield must be worn if there is a likelihood of exposure. Persons subject to ammonia exposure must not wear contact lenses.
- Skin:** Rubber boots, gloves, apron, and coat. Use of protective oil will reduce skin irritation from ammonia.
- Respiratory:** Unless ventilation is adequate to keep airborne concentrations below the exposure standard, wear approved respiratory protection such as an ammonia canister mask or an approved air supplied respiratory. Canister or cartridge type masks must not be used above their exposure limits. From 0-200 ppm, a cartridge type ½ mask respirator is needed. From 200-500 ppm a type “N” gas mask with full face piece is needed. Over 500 ppm a self-contained breathing apparatus (SCBA) is required.
- Other:** Avoid contact with skin and avoid breathing vapors. Do not eat, drink, or smoke in work area. Wash hands before eating, drinking, or using restroom. Eye wash fountain and safety shower should be available in the working area.

## VII. HEALTH AND FIRST AID

### PHYSIOLOGICAL & HEALTH EFFECTS

#### Routes of Entry

- Eyes:** Vapor is irritating to the eyes. Liquid will cause burns.
- Skin:** **Absorption;** ammonia, because of its alkalinity and water solubility, tends to break down and disrupt the outer cell layers, permitting rapid penetration. Even so, ammonia is not a systemic poison and the effects will be limited to local effects. **Contact;** Causes smarting of the skin and first-degree burns on short exposure. May cause second-degree burns on long exposure.
- Inhalation:** If inhaled, will cause nausea, vomiting, breathing difficulty, and convulsions. Shock or loss of consciousness may result. Brief exposure to 5000 ppm may be fatal.
- Ingestion:** Ingestion causes burning pain in mouth, throat, stomach, and thorax, constriction of throat, and coughing. This is soon followed by vomiting of blood or by passage of loose stools containing blood. Ingestion of 3-4 ml may be fatal.
- Toxicity:** Acute oral toxicity LD50 for rat is 350 mg/kg for ammonia. IDLH Value\*:300 ppm \*The Immediately Dangerous to Life and Health Value.

**Signs & Symptoms  
of Exposure:**

Burning of the eyes, conjunctivitis, skin irritations, swelling of the eyelids and lips, dry red mouth and tongue, burning in the throat, and coughing. In more severe cases of exposure, difficulty in breathing, signs and symptoms of lung congestion, and, ultimately, death from respiratory failure due to pulmonary edema may occur.

**Effects of  
Overexposure:**

Irritation and possible burns of the skin and mucous membranes. Headache, salivation, nausea, and vomiting. Difficult or labored breathing and cough with bloody mucous discharge. Bronchitis, laryngitis, hemoptysis, and pulmonary edema or pneumonitis. Ulceration of the conjunctiva and cornea, and corneal and lenticular opacities. Damage to the eyes may be permanent.

**EMERGENCY & FIRST AID PROCEDURES**

**Eyes:** Immediately flush with flowing water for at least 15 minutes with the eyelids held apart.

**Skin:** Apply water immediately to exposed areas of skin and continue for at least 15 minutes. Remove contaminated clothing while continuing to apply water. Do not apply salves or ointments to affected areas. OBTAIN MEDICAL ATTENTION.

**Inhalation:** Remove victim to fresh air. Give oxygen if breathing is difficult. If breathing has stopped, start artificial respiration. Keep victim calm and resting. OBTAIN MEDICAL ATTENTION.

**Ingestion:** **DO NOT INDUCE VOMITING.** If person is conscious, give large quantities of water and, if possible, diluted vinegar, lemon juice, orange juice, or other citric juices to neutralize the ammonia. Delay may cause perforation of esophagus or stomach. OBTAIN MEDICAL ATTENTION.

**VIII. SPILL, LEAKAGE, AND WASTE DISPOSAL**

**Steps to Be Taken in Case Material is Released or Spilled:**

Stop the flow. Wear self-contained breathing apparatus and full protective clothing. Approach spill from upwind and evacuate area downwind. Prevent runoff from entering streams, drinking water supply or sewers. Dike to contain spill.

**Precautions if**

**Spilled or Released:** Harmful to aquatic life in very low concentrations. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Do not contaminate any body of water by direct application, cleaning of equipment or disposal.

**Neutralizing**

**Chemicals:** Dilute phosphoric or sulfuric acid. Vinegar will effectively neutralize small spills.

**Waste Disposal**

**Methods:** Consult Federal, State, and Local authorities for proper disposal procedures.

**Reportable**

**Quantities:** 1000 lbs.

**IX. TRANSPORTATION REQUIREMENTS**

**DOT Proper Shipping Name:** Ammonium Hydroxide, with more than 10% but not more than 35% as Ammonia.

**DOT Classification:** 8

**UN/NA Identification**

**Number:** UN 2672

**Packing Group:** III

**Other Labels:** Corrosive

**X. SPECIAL PRECAUTIONS****Handling and Storage**

**Precautions:** Avoid heating containers of aqua ammonia. Avoid storing in close proximity to strong acids. Avoid contact with skin and eyes. Avoid inhalation of vapors.

**XI. NSF CERTIFICATION**

Aqua Ammonia manufactured at Lake Charles, LA is NSF-60 certified. Maximum use in potable water is 10 mg/l.

**SALES OFFICE**

For Product Information:  
TEL: 662-494-3055  
FAX: 662-494-2828

Post Office Drawer 1217  
West Point, MS 39773

To Place An Order:  
TEL: 800-953-3585  
FAX: 800-953-3588

**IMPORTANT**

The information on this Material Safety Data Sheet is believed to be accurate but is not warranted to be so. Protective equipment, health effects, and other related safety measures are based on intended and anticipated product use. Recipients are advised to confirm in advance of need that the information is applicable and suitable to their circumstances.