

Common Name: **AMMONIUM HYDROXIDE**

Synonyms: Ammonia Water; Aqua Ammonia

CAS No: 1336-21-6

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

RTK Substance No: 0103

 Description: Colorless solution of *Ammonia* in water with a pungent odor

## HAZARD DATA

Hazard Rating	Firefighting	Reactivity
<b>3 - Health</b> <b>0 - Fire</b> <b>0 - Reactivity</b> DOT#: UN 2672 ERG Guide #: 154 Hazard Class: 8 (Corrosive)	<b>Ammonium Hydroxide</b> is not combustible, however in a fire <i>Ammonia</i> vapors are formed that can be ignited and may result in an explosion. Use dry chemical, CO <sub>2</sub> , water spray or foam as extinguishing agents. POISONOUS GASES ARE PRODUCED IN FIRE, including <i>Ammonia</i> and <i>Nitrogen Oxides</i> . Use water spray to keep fire-exposed containers cool. DO NOT get water inside containers.	<b>Ammonium Hydroxide</b> reacts with many HEAVY METALS (such as SILVER, COPPER, LEAD and ZINC) and their SALTS to form explosive compounds and flammable and explosive <i>Hydrogen gas</i> . <b>Ammonium Hydroxide</b> may react violently with STRONG ACIDS (such as HYDROCHLORIC, SULFURIC and NITRIC); DIMETHYL SULFATE; and HALOGENS. <b>Ammonium Hydroxide</b> will react with STRONG BASES (such as SODIUM HYDROXIDE and POTASSIUM HYDROXIDE) to produce <i>Ammonia gas</i> .

## SPILL/LEAKS

**Isolation Distance:**

Spill: 50 meters (150 feet)

Fire: 800 meters (1/2 mile)

Absorb liquids in dry sand, earth, or a similar material and place into sealed containers for disposal.

 DO NOT use COPPER, ALUMINUM or GALVANIZED METALS when handling **Ammonium Hydroxide**.

 Neutralize with a weak acid such as vinegar (*Acetic Acid*).

DO NOT wash into sewer.

**Ammonium Hydroxide** is harmful to aquatic life in very low concentrations.

## PHYSICAL PROPERTIES

<b>Odor Threshold:</b>	50 ppm
<b>Flash Point:</b>	Noncombustible
<b>LEL:</b>	16%
<b>UEL:</b>	27%
<b>Auto Ignition Temp:</b>	1,202°F (650°C) (25% Solution)
<b>Vapor Density:</b>	0.6 to 1.2 (air = 1)
<b>Vapor Pressure:</b>	360 mm Hg at 68°F (20°C) (25% Solution)
<b>Specific Gravity:</b>	0.9 (water = 1)
<b>Water Solubility:</b>	Miscible
<b>Boiling Point:</b>	100.4°F (38°C) (25% Solution)
<b>Freezing Point:</b>	-72.4°F (-58°C) (25% Solution)
<b>Ionization Potential:</b>	10.18 eV (as <i>Ammonia</i> )
<b>Molecular Weight:</b>	35.06
<b>pH:</b>	13.6

## EXPOSURE LIMITS

**OSHA:** 50 ppm, 8-hr TWA

**NIOSH:** 25 ppm, 10-hr TWA; 35 ppm, STEL

**ACGIH:** 25 ppm, 8-hr TWA; 35 ppm, STEL

**IDLH:** 300 ppm

 (All the above are for *Ammonia*)

The Protective Action Criteria values are:

PAC-1 = 6 ppm    PAC-2 = 40 ppm    PAC-3 = 100 ppm

## PROTECTIVE EQUIPMENT

<b>Gloves:</b>	Butyl, Nitrile, Neoprene and Viton (>8-hr breakthrough for <b>Ammonium Hydroxide</b> in less than 30% solution)
<b>Coveralls:</b>	Tychem® SL, F, Responder® and TK (>8-hr breakthrough for <b>Ammonium Hydroxide</b> in less than 30% solution)
<b>Respirator:</b>	>25 ppm - full facepiece APR with cartridges specific for <i>Ammonia</i> >100 ppm - SCBA

## HEALTH EFFECTS

**Eyes:** Irritation, burns and possible eye damage

**Skin:** Irritation and burns

**Inhalation:** Nose, throat and lung irritation, with coughing, and severe shortness of breath (pulmonary edema)

## FIRST AID AND DECONTAMINATION

**Remove** the person from exposure.

**Flush** eyes with large amounts of water for at least 30 minutes. Remove contact lenses if worn. Seek medical attention

**Quickly** remove contaminated clothing and wash contaminated skin with large amounts of soap and water. Seek medical attention.

**Begin** artificial respiration if breathing has stopped and CPR if necessary.

**Transfer** promptly to a medical facility.

**Medical** observation is recommended as symptoms may be delayed.