

**Section 1 Chemical Product and Company Information**

80 Northwest Blvd.  
Nashua, NH 03063  
(800) 225-3739

**CHEMTREC 24 Hour Emergency**  
**Phone Number (800) 424-9300**  
For laboratory use only.  
Not for drug, food or household use.

**Product** AMMONIUM HYDROXIDE, 1 MOLAR (1 NORMAL)

**Synonyms** Ammonium Hydroxide, Water Solution (1M/1N)

**Section 2 Hazards Identification**

**Signal word:** WARNING

**Pictograms:** GHS07 / GHS09

**Target organs:** Eyes, Skin, Mucous membranes



**GHS Classification:**

Skin irritation (Category 2)

Eye irritation (Category 2A)

Acute aquatic (Category 1)

**GHS Label information: Hazard statement:**

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H400: Very toxic to aquatic life.

**Precautionary statement:**

P264: Wash hands thoroughly after handling.

P273: Avoid release to the environment.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352: IF ON SKIN: Wash with plenty of water and soap.

P332+P313: If skin irritation occurs: Get medical attention.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313: If eye irritation persists: Get medical attention.

P362+P364: Take off contaminated clothing and wash it before reuse.

P391: Collect spillage.

P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

**Section 3 Composition / Information on Ingredients**

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	Approximately 98.4%	231-791-2
Ammonium hydroxide (as Ammonia)	1336-21-6	Approximately 1.6%	215-647-6

**Section 4 First Aid Measures**

**INGESTION:** HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** CAUSES SERIOUS IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** CAUSES IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

**Section 5 Fire Fighting Measures**

**Suitable Extinguishing Media:** Carbon dioxide, dry chemical, dry sand, alcohol foam.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

**Section 6 Accidental Release Measures**

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Carefully neutralize with Sodium bicarbonate, absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

**Section 7 Handling & Storage**

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts/vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Store in a cool, well-ventilated area away from incompatible substances.

**Section 8 Exposure Controls / Personal Protection**

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Ammonia CAS No. 7664-41-7	TWA: 17 mg/m <sup>3</sup> ; STEL: 24 mg/m <sup>3</sup>	TWA: 50 ppm, 35 mg/m <sup>3</sup>	TWA: 18 mg/m <sup>3</sup> ; STEL: 27 mg/m <sup>3</sup>

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

**Section 9 Physical & Chemical Properties**

<b>Appearance:</b> Clear, colorless liquid. <b>Odor:</b> Strong ammonia odor. <b>Odor threshold:</b> Data not available. <b>pH:</b> Data not available. <b>Melting / Freezing point:</b> Approximately 0°C (32°F) (water) <b>Boiling point:</b> Approximately 100°C (212°F) (water) <b>Flash point:</b> Data not available	<b>Evaporation rate ( Water = 1):</b> <1 <b>Flammability (solid/gas):</b> Data not available. <b>Explosion limits: Lower / Upper:</b> Data not available <b>Vapor pressure (mm Hg):</b> 14 (water) <b>Vapor density (Air = 1):</b> 0.7 (water) <b>Relative density (Specific gravity):</b> Approximately 1.0 (water) <b>Solubility(ies):</b> Complete in water.	<b>Partition coefficient:</b> Data not available <b>Auto-ignition temperature:</b> Data not available <b>Decomposition temperature:</b> Data not available. <b>Viscosity:</b> Data not available. <b>Molecular formula:</b> Mixture <b>Molecular weight:</b> Mixture
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**Section 10 Stability & Reactivity**

**Chemical stability:** Stable **Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures which cause evaporation.

**Incompatible materials:** Acids, strong oxidizers, halogens, heavy metals.

**Hazardous decomposition products:** Decomposes to ammonia gas and above 450°C (842°F) to hydrogen gas and nitrogen oxides.

**Section 11 Toxicological Information**

**Acute toxicity:** Oral-rat LD50: 350 mg/kg [Ammonium hydroxide, anhydrous]

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:** [Ammonium hydroxide, anhydrous]

Inhalation: Burning sensation, cough, labored breathing, shortness of breath, sore throat.

Ingestion: Abdominal cramps, abdominal pain, sore throat, vomiting,

Skin: Redness, skin burns, pain, blisters.

Eyes: Redness, pain, blurred vision, burns.

**Signs and symptoms of exposure:** Material is extremely destructive to tissue of the mucous membranes, upper respiratory, gastrointestinal and digestive tracts, eyes and skin. Inhalation may be fatal as a result of spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema.

**Additional information:** RTECS #: BQ9625000 [Ammonium hydroxide, anhydrous]

**Section 12 Ecological Information**

**Toxicity to fish:** LC50 Lepomis macrochirus (bluegill) 0.024-0.093 mg/L/48H

**Toxicity to daphnia and other aquatic invertebrates:** LC50 Daphnia magna (water flea) 0.66 mg/L/48H @ 22°C

**Toxicity to algae:** TLM Diatom (algae) 420 mg/L/120H @ 22°C (50% growth reduction)

**Persistence and degradability:** No data available **Bioaccumulative potential:** No data available

**Mobility in soil:** No data available **PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

**Section 13 Disposal Considerations**

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

**Section 14 Transport Information**

**UN/NA number:** Not applicable

**Shipping name:** Not Regulated

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** Yes

**Marine pollutant:** No

**Exceptions:** Not applicable

**2012 ERG Guide #** Not applicable

**Section 15 Regulatory Information**

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Ammonium hydroxide	Listed	1,000 lbs (454 kg)	Not listed	Listed	Not listed	E

**Section 16 Additional Information**

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

**Revision Date:** February 15, 2014

**Supersedes:** November 22, 2011