

## Material Safety Data Sheet



# Ammonium Hydroxide Solution, 2%

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**Carolina Biological Supply Company**

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**CAROLINA**  
www.carolina.com

### Section 1 - Product Description

**Product Name:** Ammonium Solution, 2%

**Product Code(s):** 97-2157, 97-2101

**Size:** 250 mL

**Chemical Name:** Ammonium Hydroxide, aqueous solution

**CAS Number:** 1336-21-6

**Formula:**  $\text{NH}_4^+ \text{OH}^-$

**Synonyms:** Ammonia Aqueous, Aqua Ammonia, Ammonia, Ammonium Hydroxide

**Distributor:** Carolina Biological Supply Company, 2700 York Road, Burlington, NC 27215

**Chemical Information:** 800-227-1150 (8am-5pm (ET) M-F) **Chemtrec** 800-424-9300 (Transportation Spill Response 24 hours)

### Section 2 - Hazard Identification

**Emergency Overview:** Irritating to eyes, respiratory system and skin. Harmful if swallowed.

**Potential Health Effects:**

**Eyes:** May cause irritation.

**Skin:** May cause irritation to skin.

**Ingestion:** May cause gastrointestinal discomfort.

**Inhalation:** May cause irritation to respiratory tract.

### Section 3 - Composition / Information on Ingredients

**Principal Hazardous Components:** Ammonium Hydroxide (CAS# 1336-21-6) 2%

**TLV units:** ACGIH-TLV 25 ppm (TWA); 35 ppm (Ceiling)

**PEL units:** OSHA-PEL 50 ppm (TWA)

### Section 4 - First Aid Measures

**Emergency and First Aid Procedures:**

**Eyes** - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Skin** - After contact with skin, wash immediately with plenty of water.

**Ingestion** - If swallowed, rinse mouth with water (only if the person is conscious).

**Inhalation** - In case of accident by inhalation: remove casualty to fresh air and keep at rest.

### Section 5 - Firefighting Procedures

**Flash Point (Method Used):** N/A

**NFPA Rating:**

**Health:** 2

**Fire:** 0

**Reactivity:** 1

**Extinguisher Media:** Use dry chemical, CO<sub>2</sub> or appropriate foam.

**Flammable Limits in Air % by Volume:** NH<sub>3</sub> gas LEL 16% UEL 25%

**Autoignition Temperature:** NH<sub>3</sub> gas 651 °C

**Special Firefighting Procedures:** Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.

**Unusual Fire and Explosion Hazards:** Dangerous fire hazard; emits irritating fumes and liquid can inflict burns. Ammonia hydroxide is non-combustible and non explosive, but ammonia vapors released from solution can form an explosive mixture in air.

## Section 6 - Spill or Leak Procedures

**Steps to Take in Case Material Is Released or Spilled:** Ventilate area of spill. Eliminate all sources of ignition. Remove all non-essential personnel from area. Clean-up personnel should wear proper protective equipment and clothing. Absorb material with suitable absorbent and containerize for disposal.

## Section 7 - Special Precautions

**Precautions to Take in Handling or Storing:** Keep away from ... (incompatible materials to be indicated by the manufacturer). Keep container tightly closed in a cool, well-ventilated place.

## Section 8 - Protection Information

**Respiratory Protection (Specify Type):** None needed under normal conditions of use with adequate ventilation. A NIOSH/MSHA chemical cartridge respirator should be worn if PEL or TLV is exceeded.

**Ventilation:**

**Local Exhaust:** Yes

**Mechanical(General):** Yes

**Special:** No

**Other:** No

**Protective Gloves:** Natural rubber, Neoprene, PVC or equivalent.

**Eye Protection:** Splash proof chemical safety goggles should be worn.

**Other Protective Clothing or Equipment:** Lab coat, apron, eye wash, safety shower.

## Section 9 - Physical Data

**Molecular Weight:** 35.05

**Boiling Point:** N/A

**Vapor Density(Air=1):** 0.596 NH<sub>3</sub> at 15.6 °C

**Percent Volatile by Volume:** 100%

**Solubility in Water:** Soluble

**Melting Point:** -78 °C (-108 °F)

**Vapor Pressure:** 2160 mmHg at 25 °C

**Specific Gravity (H<sub>2</sub>O=1):** 0.90 at 25 °C

**Evaporation Rate (BuAc=1):** < 1

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

## Section 10 - Reactivity Data

**Stability:** Stable

**Conditions to Avoid:** Heat and sources of ignition.

**Incompatibility (Materials to Avoid):** Acids, Oxidizers, Acrolein, Dimethyl Sulfate, Halogens, Metals, Bases,

**Hazardous Decomposition Products:** NO<sub>x</sub>, NH<sub>3</sub>,

**Hazardous Polymerization:** Will not occur

## Section 11 - Toxicity Data

**Toxicity Data:** (NH<sub>3</sub>) orl-hmn LCLo 43 mg/kg

(NH<sub>3</sub>) orl-rat LD50 350 mg/kg

**Effects of Overexposure:**

**Acute:** See Section 2

**Chronic:** Mutation data cited. Not listed as a carcinogen by IARC, NTP or OSHA.

**Conditions Aggravated by Overexposure:** Respiratory disorders,

**Target Organs:** Respiratory system, Gastrointestinal tract,

**Primary Route(s) of Entry:** Inhalation.

## Section 12 - Ecological Data

**EPA Waste Numbers:** D002

## Section 13 - Disposal Information

**Waste Disposal Methods:** Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.

## Section 14 - Transport Information

**DOT Proper Shipping Name:** UN1760, Ammonium Solutions, 8, III Labels Required: Corrosive

## Section 15 - Regulatory Information

**EPA TSCA Status:** On TSCA Inventory

**Hazard Category for SARA Section 311/312 Reporting:** Acute

**Name List:**

Ammonium Solution - Yes

**Chemical Category:**

Ammonium Solution - No

**CERCLA Section 103 RQ(lb.):** Ammonium Solution - 1000

**RCRA Section 261.33:** Ammonium Solution - No

## Section 16 - Additional Information

The information provided in this Material Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the Material Safety Data Sheet. Any employer must carefully assess the applicability of any information contained herein in regards to the particular use to which the employer puts the material.

**Glossary**

ACGIH	American Conference of Governmental Industrial Hygienists
CAS Number	Chemical Services Abstract Number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOT	U.S. Department of Transportation
IARC	International Agency of Research on Cancer
N/A	Not Available
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
ppm	Parts per million
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act