

# **MATERIAL SAFETY DATA SHEET**

A  
CAROLINA BIOLOGICAL SUPPLY COMPANY

Revised: 16/07/04  
Replaces: 09/05/00  
Printed: 26/05/06

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## **1. PRODUCT DESCRIPTION**

Product Name: Ammonium Hydroxide Solution  
Product Code(s): 84-4010, 84-4012  
Size: 500ml, 2.5L  
Chemical Name: Ammonium Hydroxide Solution, Reagent, A.C.S.  
CAS Number: 1336-21-6  
Formula: NH<sub>4</sub>.OH  
Synonyms: Ammonia Solution  
Distributor: Carolina Biological Supply Company  
2700 York Road  
Burlington, NC 27215

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

## **2. COMPOSITION/INFORMATION ON INGREDIENTS**

Principle Hazardous Components: Ammonia (CAS# 1336-21-6) 25-30%  
Water (CAS# 7732-18-5) 70-75%

TLV and PEL units: ACGIH-TLV Ammonia 25ppm  
OSHA-PEL Ammonia 50ppm(TWA)

## **3. HAZARD IDENTIFICATION**

Emergency Overview:

Potential Health Effects:

Eyes: May cause irritation.

Skin: May cause irritation.

Ingestion: May cause gastrointestinal discomfort.

Inhalation: May cause irritation to respiratory tract.

## **4. FIRST AID MEASURES**

Emergency and First Aid Procedures:

Eyes - Flush with water for at least 15 minutes, raising and lowering eyelids occasionally. Get medical attention if irritation persists.  
Skin - Thoroughly wash exposed area for at least 15 minutes. Remove contaminated clothing. Launder contaminated clothing before reuse. Get medical attention if irritation persists.

Ingestion - Do not induce vomiting. If swallowed, if conscious, give plenty of water immediately and call a physician or poison control center. Never give anything by mouth to an unconscious person.

Inhalation - Remove to fresh air. Give oxygen if breathing is difficult; give artificial respiration if breathing has stopped. Keep person warm, quiet, and get medical attention.

## **5. FIREFIGHTING PROCEDURES**

Flash Point(Method Used): Liquid not flammable.(NA)

NFPA Rating: Health: 3  
Fire: 1  
Reactivity: 0

Extinguisher Media:

Use media suitable to extinguish surrounding fire.

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

Autoignition Temperature: NH<sub>3</sub> gas: 1204F

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

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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.

### **6. SPILL OR LEAK PROCEDURES**

Steps to be Taken 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.

### **7. SPECIAL PRECAUTIONS**

Precautions to be Taken in Handling or Storing: Store tightly closed in a well ventilated area away from sources of ignition and separate from acids and oxidizers. Do not breath vapor. Do not get in eyes, on skin, or on clothing.

Other Precautions: Do not mix with bleach or other oxidizers. Retained residue may make empty containers hazardous; use caution! Wash thoroughly after handling.

### **8. SPECIAL PROTECTION INFORMATION**

Respiratory Protection(Specify Type):

A NIOSH/MSHA chemical cartridge respirator should be worn if PEL or TLV is exceeded.

Ventilation:

Local Exhaust: Preferred  
Mechanical(General): Acceptable  
Special: No  
Other: No

Protective Gloves:

Rubber, neoprene, PVC, or equivalent.

Eye Protection:

Splash proof chemical safety goggles should be worn at all times.

Other Protective Clothing or Equipment:

Lab coat, eye wash, and safety shower.

### **9. PHYSICAL DATA**

Molecular Weight: 35.06

Melting Point: -72C

Boiling Point: NH3 released

Vapor Pressure: 115 20C

Vapor Density(Air=1): As NH3 gas 0.596 @ 15.6C

Specific Gravity(H2O=1): 0.897

Percent Volatile by Volume: 100%

Evaporation Rate(H2O=1): n/a

Solubility in Water: Miscible

Appearance and Odor: Colorless liquid; intense, pungent, suffocating odor.

### **10. REACTIVITY DATA**

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Stability: Stable  
Conditions to Avoid: Heating: produces toxic, irritating and corrosive ammonia gas.  
Incompatibility(Materials to Avoid): Acids, oxidizers, acrolein, dimethyl sulfate, halogens, silver compounds, sodium hydroxide, Cu, Fe, Ca.  
Hazardous Decomposition Products: NH3 and NOx  
Hazardous Polymerization: Will not occur

## 11. TOXICITY DATA

Toxicity Data: NH3 ihl-hmn LCLo: 5000ppm; orl-hmn LDLo: 43 mg/kg; ihl-hmn  
TCLo: 408 ppm  
Effects of Overexposure:  
Acute: See section 3  
Chronic: NH3: Mutation data cited. Not listed as causing cancer by IARC, NTP, or OSHA.  
Conditions Aggravated by Overexposure: Respiratory conditions.  
Target Organs: Respiratory and digestive systems.  
Primary Route(s) of Entry: Inhalation

## 12. ECOLOGICAL DATA

EPA Waste Numbers: D002

## 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.

## 14. TRANSPORT INFORMATION

Description: Ammonia solutions, 8, UN2672, III

## 15. REGULATORY INFORMATION

EPA TSCA Status: On TSCA Inventory  
Hazard Category for SARA Section 311/312 Reporting: Acute

| Product or Components | SARA EHS Sec. 302 TPQ | SARA Sec. 313 Chemicals Name List | Chemical Category | CERCLA Sec. 103 RQ lbs. | RCRA Sec. |
|-----------------------|-----------------------|-----------------------------------|-------------------|-------------------------|-----------|
| 261.33                |                       |                                   |                   |                         |           |

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Ammonium Hydroxide No No No 1000 No

## 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.

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### Glossary

ACGIH.....American Conference of Governmental Industrial Hygienists  
CAS Number..Chemical Abstracts Service Number  
CERCLA.....Comprehensive Environmental Response, Compensation, and  
Liability Act  
DOT.....U.S. Department of Transportation  
IARC.....International Agency of Research on Cancer  
mppcf.....million particles per cubic foot  
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