

FLINN SCIENTIFIC INC.

"Your Safer Source for Science Supplies"

Material Safety Data Sheet (MSDS)

MSDS #: 47.00

Revision Date: February 24, 2003

Section 1 — Chemical Product and Company Identification

Ammonia Gas

Flinn Scientific, Inc. P.O. Box 219 Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Section 2 — Composition, Information on Ingredients

Ammonia, Gas

Synonym: anhydrous ammonia

CAS#: 7664-41-7

Section 3 — Hazards Identification

Colorless gas with a pungent odor.

Moderately toxic by inhalation and ingestion. Severe irritant of eyes, respiratory tract and skin. Corrosive to eyes.

Can cause breathing problems, chest pain, coughing and even suffocation. Can cause severe skin burns.

Moderate fire risk.

FLINN AT-A-GLANCE

Health-2

Flammability-1

Reactivity-0

Exposure-3

Storage-0

0 is low hazard, 3 is high hazard

Section 4 — First Aid Measures

Call a physician, seek medical attention for further treatment, observation and support after first aid.

Inhalation: Remove to fresh air at once. If breathing has stopped give artificial respiration immediately.

Eye: Immediately flush with fresh water for 15 minutes.

External: Wash continuously with fresh water for 15 minutes.

Internal: Give large quantities of water. Do not induce vomiting. Call a physician or poison control at once.

Section 5 — Fire Fighting Measures

Moderate fire risk. Combustible gas.

UEL: 25% LEL: 15% Autoignition Temperature: 1203 F

Fire Fighting Instructions: Use triclass, dry chemical fire extinguisher. Firefighters should wear PPE and SCBA with full facepiece operated in positive pressure mode.

NFPA CODE

H-3

F-1

R-0

Section 6 — Accidental Release Measures

Close cylinder at once. Remove all ignition sources and ventilate room. If cylinder is leaking, evacuate the laboratory and call fire department with necessary breathing equipment.

Section 7 — Handling and Storage

Store with the bottled gases in a secure area.

Use and dispense in a hood.

Section 8 — Exposure Controls, Personal Protection

Avoid contact with eyes, skin and clothing. Wear chemical splash goggles, chemical-resistant gloves and chemical-resistant apron.

Use ventilation to keep airborne concentrations below exposure limits. Always wear a NIOSH-approved respirator with proper cartridges or a positive pressure, air-supplied respirator when handling this material in emergency situations (spill or fire). Exposure guidelines: TWA 25 ppm, STEL 35 ppm (NIOSH, ACGIH)

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Section 9 — Physical and Chemical Properties

Colorless gas with a pungent odor.
Solubility: Soluble in water, moderately soluble in alcohol.
Formula: NH₃
Formula Weight: 17.04
Vapor Pressure: 8.75 atm (21 C)

Specific Gravity: Lighter than air.
Relative density (air = 1) : 0.597 at 25 C.
Melting Point: -77.7 C
Boiling Point: -33.35 C
Vapor Density: 0.6

Section 10 — Stability and Reactivity

Avoid contact with strong oxidizers. Will react violently with all acids. Forms explosives compounds in contact with silver or mercury. Contact with halogens may cause spattering.

Section 11 — Toxicological Information

Acute effects: Toxic, corrosive
Chronic effects: N.A.
Target organs: Respiratory system and eyes

ORL-RAT LD50: 350 mg/kg
IHL-RAT LC50: 2000 ppm/4H
SKN-RBT LD50: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

Section 12 — Ecological Information

Data not yet available.

Section 13 — Disposal Considerations

Please consult with state and local regulations.
One option is to completely empty cylinder in an operating fume hood or outdoors. Avoid flames and sparks. Dispose of empty cylinder in trash, if non-refillable. Another option is to bubble the ammonia gas through water, then dispose of the resulting ammonium hydroxide solution using Flinn Disposal Method #10.

Section 14 — Transport Information

Shipping Name: Ammonia, Anhydrous, Liquefied
Hazard Class: 2.2 Non-flammable gas
UN Number: UN1005

N/A = Not applicable

Section 15 — Regulatory Information

TSCA-listed, EINECS-listed (231-635-3). RCRA D002.

Section 16 — Other Information

Consult your copy of the Flinn Scientific Catalog/Reference Manual for additional information about laboratory chemicals. This Material Safety Data Sheet (MSDS) is for guidance and is based upon information and tests believed to be reliable. Flinn Scientific Inc. makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages relating thereto. The data is offered solely for your consideration, investigation, and verification. Flinn Scientific Inc. assumes no legal responsibility for use or reliance upon this data.

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