

Ammonia
45436

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Ammonia

Catalog Numbers:
S79892

Synonyms:

Ammonia, Aqueous; Ammonia Solution; Aqua Ammonia; Ammonium Hydroxide;

Company Identification: Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
1336-21-6	Ammonium hydroxide	7.0-10.0	215-647-6
7732-18-5	Water	90	231-791-2

Hazard Symbols: C N

Risk Phrases: 34 50

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: colourless.

Danger! Corrosive. May be harmful if swallowed. Causes eye and skin burns. Causes digestive and respiratory tract burns.

Target Organs: None.

Potential Health Effects

Eye:

May cause irreversible eye injury. Vapor or mist may cause irritation and severe burns. Contact with liquid is corrosive to the eyes and causes severe burns.

Skin:

Contact with liquid is corrosive and causes severe burns and ulceration.

Ingestion:

Causes severe digestive tract burns with abdominal pain, vomiting, and possible death. May cause corrosion and permanent tissue destruction of the esophagus and digestive tract.

Inhalation:

Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. May cause pulmonary edema and severe respiratory disturbances.

Chronic:

Prolonged or repeated skin contact may cause dermatitis. Repeated

exposure may cause erosion of teeth.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed.

Skin:

Get medical aid. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion:

Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Inhalation:

Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician:

Treat symptomatically and

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Not flammable, but reacts with most metals to form flammable hydrogen gas.

Extinguishing Media:

Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Provide ventilation.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Do not get on skin or in eyes. Do not ingest or inhale. Discard contaminated shoes.

Storage:

Store in a cool, dry, well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:

Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA-Final PELs
Ammonium hydroxide	none listed	none listed	none listed
Water	none listed	none listed	none listed

OSHA Vacated PELs:

Ammonium hydroxide:

No OSHA Vacated PELs are listed for this chemical.

Water:

No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

A respiratory protection program that meets OSHA's 29 CFR §1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State:	Liquid
Appearance:	colourless
Odor:	strong odor - pungent odor - ammonia-like
pH:	11.6 (1N)
Vapor Pressure:	115 mm Hg
Vapor Density:	1.2
Evaporation Rate:	Not available.
Viscosity:	Not available.
Boiling Point:	36 deg C
Freezing/Melting Point:	-77 deg C
Autoignition Temperature:	Not available.
Flash Point:	Not available.
NFPA Rating:	Not published.
Explosion Limits, Lower:	Not available.
Upper:	Not available.
Decomposition Temperature:	Not available.
Solubility:	Soluble in water.
Specific Gravity/Density:	1.2 (Water=1)
Molecular Formula:	NH4OH
Molecular Weight:	35.0411

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials.

Incompatibilities with Other Materials:

Causes violent exothermic reactions with strong acids. Incompatible with acrolein, acrylic acid, chlorosulfonic acid, dimethyl sulfate, fluorine, gold and aqua regia, iodine, propiolactenone, propylene oxide, silver nitrate, silver oxide, silver oxide and ethyl alcohol, silver permanganate.

Hazardous Decomposition Products:

Nitric oxide (NOx) and ammonia (NH3) fumes.

Hazardous Polymerization: Will not occur.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:

CAS# 1336-21-6: BQ9625000

CAS# 7732-18-5: ZC0110000

LD50/LC50:

CAS# 1336-21-6: Oral, rat: LD50 = 350 mg/kg.

CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg.

Carcinogenicity:

Ammonium hydroxide -

Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Water -

Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology:

No information available.

Teratogenicity:

No information available.

Reproductive Effects:

No information available.

Neurotoxicity:

No information available.

Mutagenicity:

RTECs reports a mutation study on microbial mutation without S9: E. Coli, 10 mg/disc.

Other Studies:

Standard Draize Test: Administration into the eye (rabbit) = 250 ug (Severe).

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:

Fish: Rainbow trout: LC50 = 0.008 mg/L; 24 Hr.; UnspecifiedFish:

Fathead Minnow: LC50 = 8.2 mg/L; 96 Hr.; UnspecifiedFish:

Bluegill/Sunfish: LC50 = 0.024-0.093 mg/L; 48 Hr.; UnspecifiedWater

flea Daphnia: EC50 = 0.66 mg/L; 48 Hr.; 22 degrees C

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Chemical waste generators must determine whether a discarded chemical is class if as a hazardous waste.US EPA guidelines for the classification

determination are listed in 40 CFR Part additionally, waste generators must consult state and local hazardous waste regu ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT

Shipping Name: AMMONIA SOLUTION

Hazard Class: 8

UN Number: UN2672

Packing Group: III

Canadian TDG

Shipping Name: AMMONIA SOLUTION

Hazard Class: 8(9.2)

UN Number: UN2672

**** SECTION 15 - REGULATORY INFORMATION ****

US FEDERAL

TSCA

CAS# 1336-21-6 is listed on the TSCA inventory.

CAS# 7732-18-5 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

CAS# 1336-21-6: final RQ = 1000 pounds (454 kg)

Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 1336-21-6: acute, chronic.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 1336-21-6 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly Hazardous by OSHA.

STATE

Ammonium hydroxide can be found on the following state right to know

lists: California, New Jersey, Pennsylvania, Massachusetts.
Water is not present on state lists from CA, PA, MN, MA, FL, or NJ.
California No Significant Risk Level:

None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: C N

Risk Phrases:

R 34 Causes burns.

R 50 Very toxic to aquatic organisms.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

WGK (Water Danger/Protection)

CAS# 1336-21-6: 2

CAS# 7732-18-5: No information available.

United Kingdom Occupational Exposure Limits

Canada

CAS# 1336-21-6 is listed on Canada's DSL/NDSL List.

CAS# 7732-18-5 is listed on Canada's DSL/NDSL List.

This product has a WHMIS classification of D1B, E.

CAS# 1336-21-6 is not listed on Canada's Ingredient Disclosure List.

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 6/22/1999 Revision #1 Date: 8/02/2000

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.
