



Fisher Scientific

Part of Thermo Fisher Scientific

Material Safety Data Sheet

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Revision Number 2

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Ammonium hydroxide
Cat No. :	A667-212, A669-212, A669-500, A669-612GAL, A669-385LB, A669-C212, A669-S212, A669-S500
Synonyms	Ammonia solution; Ammonia water; Ammonium hydrate
Recommended Use	Laboratory chemicals
Company Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410 Tel: (201) 796-7100	Emergency Telephone Number CHEMTREC®, Inside the USA: 800-424-9300 CHEMTREC®, Outside the USA: 001-703-527-3887

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview

Causes burns by all exposure routes. Very toxic to aquatic organisms.

Appearance Colorless

Physical State Liquid

Odor Ammonia-like

Target Organs Skin, Respiratory system, Eyes, Gastrointestinal tract (GI)

Potential Health Effects

Acute Effects

Principle Routes of Exposure

Eyes	Causes burns.
Skin	Causes burns. May be harmful in contact with skin.
Inhalation	Causes burns. May be harmful if inhaled.
Ingestion	Causes burns. May be harmful if swallowed.

Chronic Effects None known.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
Water	7732-18-5	70-75
Ammonium hydroxide	1336-21-6	25-30

4. FIRST AID MEASURES

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Center immediately.
Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point	No information available.
Method -	No information available.
Autoignition Temperature	651°C / 1203.8°F
Explosion Limits	
Upper	No data available
Lower	No data available
Suitable Extinguishing Media	CO ₂ , dry chemical, dry sand, alcohol-resistant foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	No information available.
Hazardous Combustion Products	No information available.
Sensitivity to mechanical impact	No information available.
Sensitivity to static discharge	No information available.

Specific Hazards Arising from the Chemical

Keep product and empty container away from heat and sources of ignition

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA **Health** 3 **Flammability** 1 **Instability** 0 **Physical hazards** N/A

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Ensure adequate ventilation. Use personal protective equipment. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Avoid contact with skin, eyes and inhalation of vapors..
Environmental Precautions	Should not be released into the environment. Keep out of waterways.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Do not breathe vapors/dust. Do not ingest.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Personal Protective Equipment

Eye/face Protection

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 and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Colorless
Odor	Ammonia-like
Odor Threshold	No information available.
pH	12
Vapor Pressure	500 hPa @ 20 °C
Vapor Density	0.59 (Air = 1.0)
Viscosity	No information available.
Boiling Point/Range	38°C / 100.4°F
Melting Point/Range	-57°C / -70.6°F
Decomposition temperature	No information available.
Flash Point	No information available.
Evaporation Rate	No information available.
Specific Gravity	0.88-0.91
Solubility	Soluble in water
log Pow	No data available
Molecular Weight	35.05
Molecular Formula	H5 N O

10. STABILITY AND REACTIVITY

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products. Excess heat.

Incompatible Materials Strong oxidizing agents, Metals, Acids, Fluorine, Halogens

Hazardous Decomposition Products Nitrogen oxides (NOx)

Hazardous Polymerization

Hazardous polymerization does not occur.

Hazardous Reactions

None under normal processing.

11. TOXICOLOGICAL INFORMATION**Acute Toxicity****Product Information**

See actual entry in RTECS for complete information.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ammonium hydroxide	350 mg/kg (Rat)	Not listed	Not listed

Irritation

Causes burns by all exposure routes

Toxicologically Synergistic Products

No information available.

Chronic Toxicity**Carcinogenicity**

There are no known carcinogenic chemicals in this product

Sensitization

No information available.

Mutagenic Effects

No information available.

Reproductive Effects

No information available.

Developmental Effects

No information available.

Teratogenicity

No information available.

Other Adverse Effects

See actual entry in RTECS for complete information.

Endocrine Disruptor Information

No information available

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Ammonium hydroxide	Not listed	0.53 mg/l LC50 96 h 0.75 - 3.4 mg/l LC50 96 h 8.2 mg/L LC50 96 h	Not listed	0.66 mg/L EC50 = 48 h

Persistence and Degradability

No information available

Bioaccumulation/ Accumulation

No information available

Mobility

No information available

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT

UN-No UN2672
Proper Shipping Name AMMONIA SOLUTIONS
Hazard Class 8
Packing Group III

TDG

UN-No UN2672
Proper Shipping Name AMMONIA SOLUTIONS
Hazard Class 8
Packing Group III

IATA

UN-No 2672
Proper Shipping Name AMMONIA SOLUTION
Hazard Class 8
Packing Group III

IMDG/IMO

UN-No 2672
Proper Shipping Name AMMONIA SOLUTION
Hazard Class 8
Packing Group III

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Water	X	X	-	231-791-2	-		X	-	X	X	X
Ammonium hydroxide	X	X	-	215-647-6	-		X	X	X	X	X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
 T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
 XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).
 Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
 Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Ammonium hydroxide	1336-21-6	25-30	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard Yes
 Chronic Health Hazard No
 Fire Hazard No
 Sudden Release of Pressure Hazard No
 Reactive Hazard No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Water	-	1 LB	-	-
Ammonium hydroxide	X	1000 lb	-	-

Clean Air Act

Not applicable

OSHA Occupational Safety and Health Administration

Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Ammonium hydroxide	1000 lb	-

California Proposition 65

This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Ammonium hydroxide	X	X	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ): Y
 DOT Marine Pollutant N
 DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations**Mexico - Grade**

No information available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

E Corrosive material

**16. OTHER INFORMATION**

Prepared By	Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com
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Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS