1 IDENTIFICATION

Product Name

Aqua Ammonia

Applicable Products

Aqua Ammonia

Recommended Chemical Use and Restrictions

See product label for "Directions For Use". Restrictions can be found in Section 10 "Conditions to Avoid".

Supplier

Nulex, Inc.
2717 Port Neal Circle
Sgt. Bluff, Iowa 51054
Telephone 712-277-2011

Emergency Telephone

Chemtrek 1-800-424-9300 available 24 hours a day

2 HAZARD IDENTIFIACTION

Directive 67/548/EEC

Labeling - C; N, R: 34-50, S: (1/2-)26-36/37/39-45-61

Concentration Limits - C; R34: C ≥ 10%, Xi; R36/37/38: 5% ≤ C < 10%

Health Hazards

IN ALL CASES CONSULT A DOCTOR! The substance can be absorbed into the body by inhalation of its vapour or aerosol and by ingestion. Pregnancy risk group: C. Suspected: Respiratory Toxicant

Physical Hazards

This product is potentially a corrosive material and Ammonia vapor is flammable and explosive under certain conditions.

Environmental Hazards

This product has environmental hazards. See Section 12 and 15 of the MSDS for details.

3 COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Common Name / Synonyms	CAS-No.	Concentration
Ammonia Solution	Ammonia, monohydrate; Ammonium Hydroxide; Aqua Ammonia	1336-21-6	100%

4 FIRST-AID MEASURES

Routes of Exposure	Symptoms / Effects	Immediate Medical / Special Treatment
Inhalation	Burning sensation. Cough. Labored breathing. Shortness of breath. Sore throat.	Fresh air, rest. Artificial respiration if indicated. Refer for medical attention.
Skin	Corrosive. Redness. Serious skin burns. Pain. Blisters.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
Eyes	Corrosive. Redness. Pain. Blurred vision. Severe deep burns.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Ingestion	Corrosive. Abdominal cramps. Abdominal pain. Sore throat. Vomiting. (Further see Inhalation).	Rinse mouth. Do NOT induce vomiting. Give plenty of water to drink. Refer for medical attention.

5 FIRE-FIGHTING MEASURES

Suitable / Unsuitable Extinguishing Media

Water Spray	YES	**Carbon Dioxide**	YES	**Halon**	YES
Foam	YES	**Dry Chemical**	YES	**Other**	NE

Extinguish fire using an agent suitable for type of surrounding fire.

Specific Hazards

Ammonia vapor is flammable and explosive under certain conditions. Be aware that ammonia gas can evolve from ammonia solution.

Protective Equipment / Precautions for Fire Fighters

In case of fire: keep drums, etc., cool by spraying with water.

6 ACCIDENTAL RELEASE MEASURES

Protective Equipment

Ventilation, local exhaust, or breathing protection. Keep containers properly closed. Protective gloves. Protective clothing. Face shield or eye protection in combination with breathing protection.

Emergency Procedures

Contain spilled substance. Keep out of waterways as this substance is toxic to aquatic organisms. Comply with all applicable governmental regulations on spill reporting, handling, and disposal of waste.

Containment / Clean Up

Do not touch spilled material. Stop leak if possible without personal risk. Dike the area using absorbent materials such as sand or clay. Recover and contain as much product as possible. Ventilate the area. For small or incidental releases, the minimum personal protective equipment is rubber gloves, rubber apron, and chemical goggles. Large or uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment will need to be determined based on the presence of ammonia vapors. Full face respirators with appropriate cartridges or SCBA's may be required. Keep material out of sewers, storm drains, and surface waters. Comply with all governmental regulations on spill reporting, handling, and disposal of waste. Spills of 1000 pounds or more are reportable to the National Response Center, State Emergency Response Commission, and Local Emergency planning Commission. Spills into the "Waters of the United States" are also reportable to the National Response Center.

7 HANDLING AND STORAGE

Chemical Name: Ammonia Solution

Code	Prevention Precautionary Statement	Hazard Class	Hazard Category	Conditions of Use / Incompatibilities
P260	Do not breathe dust/fume/ gas/mist/vapors/spray.	Skin Corr.	1B	Use as directed on the Product Label for Conditions of Use. See Section 10 for Incompatibilities.
P391	Collect spillage.	Aquatic Acute	1	See Section 6 for Spill Response

Information obtained from 1272/2008/EC, Table 6.2

Storage

Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. Store in a cool, dry area. Keep separated from incompatible substances (see Section 10 of MSDS).

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR					
		ACGIH		OSHA			NIOSH
		TLV / TWA	STEL	PEL	STEL	IDLH	REL
		mg/m^3	mg/m^3	mg/m^3	mg/m^3	mg/m^3	mg/m^3
Ammonia Solution	1336-21-6	25 ppm TWA (as NH3)	40 ppm STEL (as NH3)	50 ppm TWA for Ammonia	NE	NE	25 ppm TWA for Ammonia, 10-hr AND 35 ppm STEL

Engineering Controls

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual Protection Measures

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick drench facilities in work area.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear liquid	**Flash Point**	NE	**Vapor Pressure, mmHg@25°C**	NE
Odor	Pungent ammonia odor	**Melting / Freezing Point**	8 to -56°	**Specific Gravity**	0.916 – 0.930
pH (10% solution)	11.6	**Flammability**	NE	**Solubility**	100% Soluble

10 REACTIVITY, STABILITY, AND HAZARDOUS POLYMERIZATION

Reactivity

Reacts with many heavy metals and their salts forming explosive compounds. Attacks many metals forming flammable/explosive gas (hydrogen - see ICSC 0001). The solution in water is a strong base, it reacts violently with acids.

Stability

Material is stable as blended and for recommended use.

Hazardous Polymerization

Will not occur.

Conditions to Avoid

Heat, flames, sparks, and other sources of ignition. Dangerous gases may accumulate in confined spaces. May ignite or explode upon contact with combustibles.

Incompatible Materials

Acids, combustible materials, halogens, metals, metal oxides, oxidizing materials. Reacts violently with acids to form an exothermic reaction. Is corrosive to metals and their alloys.

Hazardous Decomposition

Burning may produce ammonia, nitrogen oxides.

11 TOXICOLOGICAL INFORMATION

Chemical Name: Ammonia Solution

Oral (rat)	LD50 350 mg/Kg	Acute	NE
Oral (hmn)	LDLo 43 mg/Kg	Chronic	NE
Inhalation (hmn)	LCLo 5000 ppm	Carcinogen	NE
Inhalation (hmn)	TCLo 408 ppm	Mutagen	NE

12 ECOLOGICAL INFORMATION

Environmental Stability

The substance is very toxic to aquatic organisms.

Persistence/Degradability

Phytotoxicity - >2500 ug/L 33 months LETH Duckweed**.** Fish Toxicity – 15000 ug/L 96 hours LC50 Mosquitofish; Invertebrate Toxicity – 10000 ug/L NR hours Crayfish; Algal Toxicity – 6200 ug/L 9 hours Stonewart.

Bioaccumulative

This material is not expected to significantly bioaccumulate.

Mobility in Soil

Not established.

13 DISPOSAL CONSIDERATIONS

Chemical Name: Ammonia Solution

Code	Hazard Class	Hazard Category	GHS Pictogram
H314	Skin Corr.	1B	
H400	Aquatic Acute	1	

EPA Waste Number

This material is considered a D002 hazardous waste for disposal purposes. (USEPA 40 CFR 262)

International Chemical Safety Card (ICSC) #0215 – Spillage Disposal

Evacuate danger area! Consult an expert in case of a large spillage! Ventilation. Cautiously neutralize spilled liquid with a dilute acid, such as dilute sulfuric acid. Wash away remainder with plenty of water. Do NOT let this chemical enter the environment. Personal protection: complete protective clothing including self-contained breathing apparatus.

Preparing Waste for Disposal

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements. Waste disposal must be in accordance with appropriate Federal, State, and local regulations.

14 TRANSPORT INFORMATION

172.101 Hazardous Materials Table					App. B	ERG
Proper Shipping Name	**Hazard Class or Division**	**UN Identification Number**	**PG**	**Label Code**	**Marine Pollutant**	
Ammonia Solution	8	UN2672	III	8	NE	154

Ammonia solutions (more than 50% ammonia)

15 REGULATORY INFORMATION

SARA Reporting Requirements

15000 pounds TQ under Section 302 and 303. Acute under Section 311/312. Falls under ammonia solutions for Section 313

TSCA Inventory Status

Not established.

California Proposition 65

Not established.

CERCLA Reportable Quantities (RQ)

1,000

Hazardous Material Identification Table

Code	Health	Flammable	Instability/Reactivity
NFPA	3	1	0

Least: 0, Slight: 1, Moderate: 2, High: 3, Extreme: 4

16 OTHER INFORMATION

Risk Phrase			Safety Phrase		
Single	**Multiple**	**Description**	**Single**	**Multiple**	**Description**
R34		Cause burns	S26		In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
R50		Very toxic to aquatic organisms		S36/37/39	Wear suitable protective clothing, gloves and eye/face protection
			S45		In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)
			S61		Avoid release to the environment. Refer to special instructions/safety data sheet

Information Obtained From 67/548/EEC, Directive 1999/45/EC and Chip 2009 N. 716

Labeling Precautionary Statement(s)

DANGER! may cause burns or irritation of eyes, nose, throat, or skin. Do not ingest. Avoiding breathing mists and sprays. Wear gloves and safety goggles. Work in a well-ventilated area. Wash thoroughly after handling. Have safety shower and eye wash nearby.

The information and recommendations herein are taken from data contained in independent, industry recognized references including, NIOSH, OSHA, ANSI, and NFPA. This information is furnished free of charge and is based on data believed to be reliable. It is intended for use by persons possessing technical knowledge at their own discretion and risk. Since actual use is beyond our control, no guarantee, express or implied, and no liability is assumed by Nulex, Inc. in conjunction with this information. Nothing herein is to be construed as a recommendation to infringe any patents.