



Safety Data Sheet

1. Product Identifier and Company Identification

Product name	: Aqua Ammonia Solutions	
HBCC SDS number	: CA13226	
Synonym	: Ammonium Hydroxide; Aqueous Ammonia; Water Ammonia; Aqua Ammonia; Ammonia Solutions	
Product use and Restrictions	: Refer to label or call	
Manufacturer	: Corporate Headquarters	Corporate Safety & Compliance
Contact Address	Hill Brothers Chemical Company 1675 North Main Street Orange, California 92867 714-998-8800 – Office 800-821-7234 – Office	Hill Brothers Chemical Company 7121 West Bell Road, Suite 250 Glendale, Arizona 85308 623-535-9955 - Office 623-535-9944 – Fax
Emergency telephone Number (Chemtrec)	: 800-424-9300	
Website	: http://hillbrothers.com	

2. Hazard Identification

Classification	: Acute Toxicity, Inhalation; Category 4 Skin Corrosion; Category 1B Serious Eye Damage/Eye Irritation; Category 1 Specific Target Organ Toxicity (SINGLE EXPOSURE)[Respiratory tract irritation]; Category 3 Aquatic Toxicity (ACUTE); Category 2 Aquatic Toxicity (CHRONIC); Category 2
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Signal Word : Danger



Pictogram(s) :

Hazard Statements	: H332 Harmful if inhaled. H314 Causes severe skin burns and eye damage. H335 May cause respiratory irritation. H411 Toxic to aquatic life with long lasting effects.
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Precautionary Statements	: P280 Wear protective gloves. Wear protective clothing. Wear eye/face protection. P271 Use only outdoors or in a well-ventilated area. P264 Wash hands thoroughly after handling. P391 Collect Spillage.
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Response : P304+P340+P312 IF INHALED: Remove victim to fresh air and keep

comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.

P301+P330+P331+P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.

P303+P361+P353+P363 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Wash all contaminated clothing before reuse.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Prevention : P273 Avoid release to the environment.
P261 Avoid breathing fumes, mists, vapors or spray.

Storage : P405 Store locked up.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Disposal : P501 Dispose of contents and container in accordance with specified local, regional, national, and international regulations.

3. Composition/Information on Ingredients

For Ammonia Solutions 10-30%		
CAS Number	Ingredient Name	Weight %
7664-41-7	Anhydrous Ammonia	10-30
7732-18-5	Water	70-90

4. First Aid Measures

Summary of First Aid Measures

Ingestion : **Do Not Induce Vomiting.** If person is conscious, give large quantities of water and, if possible, diluted vinegar, lemon juice, orange juice, or other citric juices to neutralize the ammonia. Delay may cause perforation of esophagus or stomach. OBTAIN MEDICAL ATTENTION.

Inhalation : Remove victim to fresh air. Give oxygen if breathing is difficult. If breathing has stopped, start artificial respiration. Keep victim calm and resting. OBTAIN MEDICAL ATTENTION.

Skin : Apply water immediately to exposed areas of skin and continue for at least 30 minutes. Remove contaminated clothing while continuing to apply water. Do not apply salves or ointments to affected areas. OBTAIN MEDICAL ATTENTION.

Eyes : Immediately flush with flowing water for at least 30 minutes with the eyelids held apart. OBTAIN MEDICAL ATTENTION.

Medical Conditions : Ammonia is a respiratory irritant. Persons with impaired pulmonary function may be at increased risk from exposure.

Effects of Overexposure : Irritation and possible burns of the skin and mucous membranes.

Headache, salivation, nausea, and vomiting. Difficult or labored breathing and cough with bloody mucous discharge. Bronchitis, laryngitis, hemoptysis, and pulmonary edema or pneumonitis. Ulceration of the conjunctiva and cornea, and corneal and lenticular opacities. Damage to the eyes may be permanent.

Summary of Acute Health Hazards

- Ingestion** : May cause corrosion to the esophagus and stomach with perforation and peritonitis. Ingestion causes burning pain in mouth, throat, stomach, and thorax, constriction of throat, and coughing. This is soon followed by vomiting of blood or by passage of loose stools containing blood. Ingestion of 3-4 ml may be fatal.
- Inhalation** : If inhaled, will cause nausea, vomiting, breathing difficulty, and convulsions. Shock or loss of consciousness may result. Brief exposure to 5000 ppm may be fatal.
- Skin** : **Absorption**: Ammonia, because of its alkalinity and water solubility, tends to break down and disrupt the outer cell layers, permitting rapid penetration. Even so, ammonia is not a systemic poison and the effects will be limited to local effects.
Contact: Causes smarting of the skin and first-degree burns on short exposure. May cause second-degree burns on long exposure.
- Eyes** : Vapor is irritating to the eyes. Liquid will cause burns.
- Note to Physicians** : N/A

Summary of Chronic Health : N/A

5. Fire Fighting Measures

- Extinguishing** : Water spray or fog type streams. Chemical or CO₂ should be used on small fires only. Use water to keep fire exposed containers cool and to protect men affecting the shut off.
- Special Exposure** : The presence of oil or other combustible materials will increase the fire hazard. The explosive (flammable) range of ammonia is broadened by a mixture of oxygen replacing air, and by temperature and pressure higher than atmospheric. Stop the flow of liquid. Approach fire upwind and evacuate area downwind if needed.
- Hazards**
- Special Protective Equipment for Firefighters** : Wear self-contained breathing apparatus and full protective clothing.
- Fire Fighting Procedures** : N/A
- NFPA Rating** : Health - 3

Flammability - 1
Instability - 0



0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

NFPA Rating is for Ammonia, Anhydrous, Liquefied Gas only. Ammonia Solutions are not rated by the NFPA (National Fire Protection Association).

Uniform Fire Code Rating : N/A

6. Accidental Release Measures

Personal Precautions : Approach spill from upwind and evacuate area downwind.

Emergency Procedures : Stop the flow.

Methods of Containment And Clean-Up : Dike to contain spill. Dilute with water, if necessary to reduce ammonia vaporization. Can be neutralized with dilute phosphoric or sulfuric acids. Vinegar will effectively neutralize small spills of aqua ammonia. Prevent runoff from entering streams, drinking water supply or sewers.

7. Handling and Storage

Safe Handling : Avoid heating containers of aqua ammonia. Avoid contact with skin and eyes. Avoid inhalation of vapors.

Storage : Avoid storing in close proximity to strong acids.

Work/Hygienic : Avoid contact with skin and avoid breathing vapors. Do not eat, drink, or smoke in work area. Wash hands before eating, drinking, or using restroom. Do NOT place food, coffee or other drinks in the area where dusting or splashing of solutions is possible.

Practices

Ventilation : Local exhaust is essential. Spark-proof fans desirable with mechanical ventilation. Ducts should be located at ceiling level and lead upwards to the outside. Local exhaust must be adequate to reduce ammonia concentration below 25 ppm.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits

Chemical Name: Anhydrous Ammonia				
Exposure Limits (TWAs) in Air				
CAS Number	IDLH	ACGIH TLV	OSHA PEL	STEL
7664-41-7	300	25 ppm	50 ppm	35 ppm

Protective Equipment

: Eyewash fountain and safety shower should be available in the work area. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Neoprene and nitrile rubber are recommended materials. Polyvinyl alcohol is not recommended.

Eye Protection

: Tight fitting chemical safety and splash-proof goggles and/or a splash-proof face shield must be worn if there is a likelihood of exposure. Persons subject to ammonia exposure must not wear contact lenses.

Respiratory Protection

: Unless ventilation is adequate to keep airborne concentrations below the exposure standard, wear approved respiratory protection such as an ammonia canister mask or an approved air supplied respirator. Canister or cartridge type masks must not be used above their exposure limits. From 0 -199 ppm, a cartridge type ½ mask respirator is needed. From 200-299 ppm a type "N" gas mask with full face piece is needed. Over 300 ppm a self-contained breathing apparatus (SCBA) is required.

9. Physical and Chemical Properties

Physical State	Liquid	Molecular Weight	
Colour	Clear; Transparent	Weight %	10-30% NH ₃
Odour	Pungent	Odour Threshold	5 ppm
pH	12-14	Vapor Pressure	3-10 PSI @ 16 °C
Relative Density (water =1)	0.9590 -0.8950 @ 16 C (60°F)	Vapor Density (air=1)	0.60 @ 0°C
Viscosity	<1.7 centipoise @ 16 C (60°F)	VOC(g/ml)	100%
Boiling Point/Range (°C)	28°C	Auto-ignition Temperature(°C)	650°C
Melting Point/Range(°C)	-72°C	Evaporation Rate	
Flash Point	NA	Explosive Limits (% , v/v)	16-25% ammonia vapors
Explosive Properties	NA	Oxidizing Properties	NA
Water Solubility	Complete	Partition Coefficient (log Pow)	NA

10. Stability and Reactivity

Reactivity

: Ammonia is lightly reactive, easily undergoing oxidation, substitution and addition reactions.

Chemical Stability

: Material generally considered stable. Heating over ambient temperatures

causes vapor pressure of ammonia to increase rapidly. Stable

Possibility of Hazardous Reactions or Polymerizations : Hazardous polymerization will not occur

Conditions to Avoid : Heat, open flames, and electrical equipment and fixtures which are not vapor-proof or grounded.

Incompatible Materials : Avoid strong acids. Ammonia will react with bromine, chlorine, mercury, silver, and bleach to form explosive compounds. Avoid use of metals containing copper, zinc, and brass.

Hazardous Decomposition Products : Combustion of ammonia will yield small amounts of nitrogen and water.

11. Toxicological Information

Acute and Chronic Effects : See Section 4

Routes of Exposure

Ingestion : Yes
Inhalation : Yes
Skin : Yes
Eyes : Yes

Symptoms related to Physical, Chemical & Toxicological Characteristics : Burning of the eyes, conjunctivitis, skin irritation, swelling of the eyelids and lips, dry red mouth and tongue, burning in the throat, and coughing. In more severe cases of exposure, difficulty in breathing, signs and symptoms of lung congestion, and, ultimately, death from respiratory failure due to pulmonary edema may occur.

Numerical Measures of Toxicity : Toxicity by Ingestion: Oral rat, LD50: 350 mg/kg

Chronic Toxicity : N/A

Carcinogenicity : N/A

Product Name: Aqua Ammonia Solutions					
ACGIH	IARC	EPA	NIOSH	NTP	OSHA
No	No	No	No	No	No

Target Organs : N/A

12. Ecological Information

Ecotoxicity : Harmful to aquatic life in very low concentrations. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Do not contaminate any body of water by direct application, cleaning of equipment or disposal.

Persistence and Degradability : N/A

Bioaccumulative Potential :

Product/Ingredient	Log Pow	BCF	Potential
N/A	N/A	N/A	N/A

Mobility in Soil : N/A

13. Disposal Considerations

Disposal of Container : Consult federal, state, or local authorities for proper disposal procedures.

14. Transport Information

UN# : UN2672
Proper Shipping Name : Ammonia Solutions
Hazard Class/Division : 8
Packing Group : III
Marine Pollutant : Yes
Special Precautions : N/A
Emergency Response Guidebook : N/A
Placard Advisory : 2012 ERG, Guide 154, pages 246-247



15. Regulatory Information

Section 302 Extremely Hazardous Substance (EHS) : N/A

Section 304 Extremely Hazardous Substance (EHS) : N/A


CERCLA Hazardous Substance : N/A

Section 313 Supplier : This product contains the following toxic chemical(s) subject to the reporting requirements of SARA TITLE III Section 313 of the Emergency Planning and Community Right-To Know Act of 1986 and of 40 CFR 372:

<u>CAS #</u>	<u>Chemical Name</u>	<u>% By Weight</u>
1336-21-6	Ammonium Hydroxide	10-30%

Clean Air Act (CAA) : N/A
California Prop 65 : N/A

- TSCA** : All substances in this product are listed in the Chemical Substance Inventory of the Toxic Substances Control Act.
- Label Warning** : Corrosive
- EPA Registration** : N/A
- Toxicity by Ingestion** : Oral rat, LD50: 350 mg/kg
- IDLH Value** : 300 ppm (The Immediately Dangerous to Life and Health Value)
- Reportable Quantity** : 1000 Pounds (454 Kilograms)

	Maximum use level for Ammonium Hydroxide under NSF/ANSI Standard 60		
	Ammonium Hydroxide 19%	Maximum use	26 mg/L
	Ammonium Hydroxide 20%	Maximum use	25 mg/L
	Ammonium Hydroxide 29.45%	Maximum use	17 mg/L
	Ammonium Hydroxide 26° be	Maximum use	17 mg/L
	Ammonium Hydroxide 24.5%*	Maximum use	20 mg/L
*NSF certification for 24.5% applies to Aqua Ammonia produced at the San Jose facility only.			

16. Other Information

- Revision date** : 08/18/2016
- Supersedes** : 06/22/2016
- First Issue** : 01/02/1986
- Chemical Family/Type** : Inorganic Bases
- Section(s) changed since last revision** : Section 9

IMPORTANT! Read this SDS before use or disposal of this product. Pass along the information to employees and any other persons who could be exposed to the product to be sure that they are aware of the information before use or other exposure. This SDS has been prepared in accordance with the Globally Harmonized System of Chemical and Labeling of Chemicals (GHS) Fifth Edition and the OSHA Hazard Communication Standard [29 CFR 1910.1200]. The SDS information is based on sources believed to be reliable. Available data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control; **Hill Brothers Chemical Company** makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Additional information may be necessary or helpful for specific conditions and circumstances of use. It is the user's responsibility to determine the suitability of this product and to evaluate risks and exercise appropriate precautions for protection of employees and others prior to use.