

Material Safety Data Sheet

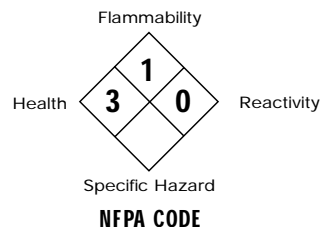
Revision Issued: JUL 27, 2001

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Section I - Product and Company Identification

Product Name: Aqua Ammonia

1101 Skokie Blvd., Northbrook, IL 60062
Phone (800) 241-6908* (847) 849-4200Suite 500, 122 - 1st Avenue South
Saskatoon, Saskatchewan Canada S7K 7G3
Phone (800) 667-0403 from Canada* (800) 667-3930 from USA**Emergencies (800) 424-9300 (CHEMTREC)**
Web Site www.potashcorp.com
Health Emergencies, Contact Your Local Poison CenterPotashCorp MSDS No: 31
ERG No: 154Common Name: Aqua Ammonia/ Ammonium Hydroxide Formula: NH₄OH / H₂O Synonym: Aqueous Ammonia, Ammoniacal Liquid Use: Industrial

Section II - Composition/Information On Ingredients

Chemical Name(s)	CAS No.	Exposure Limits								% by Weight
		OSHA PEL		TLV - TWA		STEL		CEIL		
		mg/m ³	ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³	ppm	
Aqua Ammonia / Ammonium Hydroxide	1336-21-6		25 ⁽¹⁾		25 ⁽¹⁾		35 ⁽¹⁾			18-30 ⁽¹⁾

Section III - Hazard Identification

Potential Acute Health Effects: Inhalation of 500 PPM Ammonia considered immediately dangerous to life and health (OSHA).**Eyes and Skin:** EYES: Liquid: Intensely irritating; in extreme, corneal ulceration or blindness.
SKIN: Liquid: Corrosive burns or blister formation. Gas: Irritates moist skin.**Inhalation:** Ammonia vapors are highly irritating to throat at approximately 400 PPM. Causes edema, dyspnoea, bronchospasm, chest pain, pink frothy sputum. Inhalation of 500 PPM Ammonia considered immediately dangerous to life and health (OSHA).**Ingestion:** As with other corrosive alkalis: Severe burning of gullet, stomach, mouth, and throat. Possible death from shock or asphyxia. Human lethal dose not established: Any amount can be dangerous.**Potential Chronic Health Effects:** No other potential chronic health effects known.**Carcinogenicity Lists:** IARC Monograph: No NTP: No OSHA: No

Section IV - First Aid Measures

Eyes: Immediately flood with large amounts of water for at least 15 minutes. Seek prompt medical attention.**Skin:** Quickly remove contaminated clothing. Immediately wash area with large amounts of water for at least 15 minutes. Seek prompt medical attention. Wash clothing before re-use.**Ingestion:** Do not induce vomiting. Encourage victim to drink large amounts of water, substituting as available, diluted vinegar or citrus juices. Seek prompt medical attention.**Inhalation:** Use respiratory protection as necessary and remove to fresh air at once. If breathing stops, give artificial respiration. Seek prompt medical attention.

Section V - Fire Fighting Measures

Flash Point: None **Autoignition Temperature:** 651°C (1204°F)(Based on Ammonia)
Lower Explosive Limit: Lower: 16% (Based on Ammonia) **Upper Explosive Limit:** Upper: 25% (Based on Ammonia)**Unusual Fire and Explosion Hazards:** (Based on ammonia). Ammonia increases the fire hazard from other combustible materials, including oil. Flammable limits are broadened by increasing temperature. Ammonia vapor in the range of 16-25% in air can explode on contact with ignition sources.**Extinguishing Media:** Fire extinguishing agents recommended: Water spray
Fire extinguishing agents to avoid: CO₂ may react violently**Special Firefighting Procedures and Equipment:** Wear full protective clothing. Stop flow of gas before extinguishing fire. Use water spray to keep fire-exposed containers cool.

Section VI - Accidental Release Measures

Small Spill:	Remain upwind of spill or leak. Evacuate immediate areas and wear appropriate protective equipment depending on the concentration of ammonia in immediate area.
Large Spill:	In unknown concentrations SCBA must be worn. Keep ignition sources away.
Release Notes:	If spill could potentially enter any waterway, including intermittent dry creeks, contact the local authorities. If in the U.S., contact the US COAST GUARD NATIONAL RESPONSE CENTER toll free number 800-424-8802. In case of accident or road spill notify: CHEMTREC IN USA at 800-424-9300; CANUTEC in Canada at 613-996-6666 CHEMTREC in other countries at (International code)+1-703-527-3887.
Comments:	See Section XIII for disposal information and Section XV for regulatory requirements. Large and small spills may have a broad definition depending on the user's handling system. Therefore, the spill category must be defined at the point of release by technically qualified personnel.

Section VII - Handling and Storage

Ventilation:	Provide ventilation sufficient to maintain exposure below TWA/TLV/PEL (based on ammonia).
Handling:	Avoid all contact of liquid with the body. Minimize gas contact. Good maintenance to prevent leaks. Keep away from heat and open flames. Use good process control.
Storage:	Preferably stored outside, otherwise in cool, dry well-ventilated non-combustible location, away from all possible sources of ignition and oxidizers. Protect containers from heat, corrosion. Storage and physical damage – in locating storage areas, consideration should be given to health and fire hazards, population density, and proximity of water supplies. Also, closed containers should be provided with safety relief valves, as necessary.

Section VIII - Exposure Controls/ Personal Protection

Engineering Controls:	Provide ventilation sufficient to maintain exposure below TWA/TLV/PEL (based on ammonia).
Personal Protection:	Wear hard hat, chemical safety goggles, full-face shield if eyes are not covered by respiratory device. Do not wear contact lenses
Eye Protection:	
Protective Clothing:	Wear rubber apron, impervious protective clothing and rubber boots for routine product use. Specialized handling – alkali-resistant gloves. For leak or spill or other emergency, use full protective clothing.
Respiratory Protection:	Use an approved NIOSH ammonia respirator. (Special: refers to a specific cartridge or canister for NH ₃ gas.) Up to 100 PPM chemical cartridge respirator, special, supplied-air respirator, or self-contained breathing apparatus. 100 to 300 PPM, chemical cartridge respirator, special with full-face piece. Supplied air respirator (gas mask, special supplied-air respirator, or self-contained breathing apparatus) required for exposure of 300 ppm or greater. Latter two types should have full-face piece.
Other Protective Clothing or Equipment:	Provide safety shower and eye wash facility at sites of handling and storage.

Section IX - Physical and Chemical Properties

Appearance/Color/Odor: This material at normal conditions is a clear liquid with a strong pungent ammonia odor.

Melting Point/Range: -77°C

Boiling Point: 36°C

Solubility in Water: 100%

Boiling Point/Range: Not Available

Specific Gravity: (H₂O = 1): 0.897 (28-30%) at 60° F

Vapor Pressure (mmHg): 2, 159 mmHg at 25°C

Vapor Density: (Air = 1): (NH₃ Gas) 0.596 (60° F, 15.6° C)

Molecular Weight: 35.05

Bulk Density: Not Applicable

%Volatiles: (at 20° C) 100%

pH: 11.6 in a 1.0 normal solution; 4.75 @ 25°C

Evaporation Rate: Not Applicable

Viscosity: Not applicable

Section XIV - Transportation Information

	USDOT	TDG - Canada
	for solutions with more than 10% but not more than 35%	for solutions with more than 10% but not more than 35%
Proper Shipping Name:	Ammonia Solutions	Ammonia Solutions
Hazard Class:	8	8, (9.2)
Identification Number:	UN2672	UN2672
Packing Group (Technical Name):	III	III
Labeling/ Placarding:	Corrosive	Corrosive
Authorized Packaging:	DOT103,104,105,109,111,112,114,115,120 Trucks: DOT 51, MC 306,307, 312,330,331, 407, 412	
Notes:	If product exceeds the CERCLA Reportable Quantity, the notation "RQ" shall be added before or after the basic shipping description	

European Transportation:

Section XV - Regulatory Information

UNITED STATES:

SARA Hazard Category: This product has been reviewed according to the EPA Hazard Categories promulgated under Section 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire: Yes Pressure Generating: Yes Reactivity: Yes Acute: Yes Chronic: No

40 CFR Part 355 - Extremely Hazardous Substances: None
40 CFR Part 370 - Hazardous Chemical Reporting: Applicable
All intentional ingredients listed on the TSCA inventory.

SARA Title III Information: This product contains the following substances subject to the reporting requirements of Title III (EPCRA) of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Chemical	CAS No.	Percent by Weight	CERCLA RQ (lbs.)	SARA (1986) Reporting		
				311	312	313
Ammonium Hydroxide (see Note (1))	1336-21-6	37.0 - 61.7 (as NH ₄ OH)	see Note (1) 1000 lbs. (100% Basis) 2700 lbs (18% wt. Solution As NH3) 1620 lbs. (30% wt. Solution As NH3)	Yes	Yes	Yes see Note (2)

Note: (1) CERCLA reports Aqua Ammonia as Ammonium Hydroxide (CAS 1336-21-6)
 (2) Reported as Aqueous Ammonia (CAS 7664-41-7) 18 - 30% (for SARA reporting)

CERCLA/Superfund, 40 CFR Parts 117,302: If this product contains components subject to substances designated as **CERCLA Reportable Quantity (RQ) Substances**, it will be designated in the above table with the **RQ** value in pounds. If there is a release of **RQ Substance** to the environment, notification to the National Response Center, Washington D.C. (1-800-424-8802) is required.

CANADA:

WHMIS Hazard Symbol and Classification: This product is WHMIS controlled. Class D1b,E
Ingredient Disclosure List: This product does contain ingredient(s) on this list.
Environmental Protection: All intentional ingredients are listed on the DSL (Domestic Substance List).

Section XVI - Other Information

NFPA Hazard Rating: Health 3 Fire 1 Reactivity 0 Special Hazards Corrosive

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

Comments:

Section(s) changed since last revision: All, New Format

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