

MATERIAL SAFETY DATA SHEET

Revision #: 02

Section 1 - Product Identification & Use

Product Name: **Aqua Ammonia 14%**
Synonyms: Ammonium Hydroxide, Ammonia Hydrate, Ammonia Water
WHMIS Classification: Class E, Class D.1B,
TDG Classification: Ammonium hydroxide, Class 8, UN 2672, III
Supplier: Advance Chemicals Ltd.
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Section 2 - Hazardous Ingredients

Hazardous Components	%(w/w)	C.A.S. No.	LD ₅₀ & LC ₅₀
Ammonium hydroxide	13-15	1336-21-6	(oral, rat) 350 mg/kg

Section 3 - Physical Data

Physical state: liquid Boiling point: n/a
Liquid density: 0.95 g/mL Freezing point: n/a
pH: 12 @ 20°C Solubility in water: 100%
Vapour pressure: 475 mmHg @ 15.5°C Evaporation rate: n/a
Odour & Appearance: Clear and colorless liquid with pungent, irritating odour.

Section 4 - Fire or Explosion Hazard

Flammability: The product is not considered to be flammable.
Extinguishing media: Take care not to splash or splatter the product. Wear full chemical protective clothing. Use an extinguishing media for surrounding the fire, or all-purpose foam by manufacturer's recommended techniques for large fires. Use water to cool fire exposed containers to prevent vapour build-up and rupture. Water may also be used to flush spills away from dangerous exposures.
Hazardous Combustion Products: Not available.

Section 5 - Reactivity Data

Stability: Stable
Incompatible substances: Strong oxidizing agents.
Polymerization: Will not occur.
Hazardous Combustion Products: None known.

Section 6 - Toxicological Properties

Carcinogenicity: Not available.
Reproductive Effects: No adverse effects are anticipated.
Teratogenicity: No adverse effects are anticipated.
Mutagenicity: No adverse effects are anticipated.
Toxicologically Synergistic Products: No adverse effects are anticipated.
Environmental Effects: Ammonia is harmful to aquatic life even at low concentrations (96 hour TLM - 1-10 ppm). Does not bioaccumulate.
Inhalation: Mists or ammonia gas may cause irritation and inflammation of the respiratory system resulting in hoarseness and tightness of the throat, laryngitis, bronchopneumonia and pulmonary edema which may be fatal. Productive cough with blood stained sputum may develop. Airway obstruction and diminished diffusion capacity and impaired ciliary function may result from overexposure.
Skin contact: Irritation and burns may occur.
Eye contact: Direct contact may cause irritation, lacrimation and may cause severe injury and blindness.
Ingestion: May cause severe pain in the mouth, chest, and abdomen leading to cough, vomiting, and collapse. Gastric or oesophageal perforation may occur and lung irritation or edema may occur as a delayed effect.
Exposure limits: ACGIH TLV 25 ppm (for Ammonia)

Section 7 - Preventative Measures

Personal Protective Equipment: Avoid contact with skin and eyes. Wear chemical protective gloves, goggles and face shield, rubber apron and boots. Eye wash fountains and safety shower facilities should be provided nearby for emergency use.
Respiratory protection: For vapours and mist, use an NIOSH/MSHA approved air purifying, dust, mist and particulate respirator equipped with a full-face piece. For unknown concentrations, or concentrations above 20 mg/m³, use a continuous supplied airline respirator with a safety hood.
Ventilation Requirements: This product should be used in a well-ventilated area at all times. If the solution is to be heated or a mist will be generated during product application, then local exhaust ventilation will be necessary.
Action to take for spills & leaks: Wear chemical protective clothing, rubber gloves and suitable respiratory protection. Small spills should be wiped up with

absorbent material and disposed of in government approved waste containers. The spilled product can be neutralized with a dilute solution of acetic acid to pH 6-8, then wet down with a little water to aid mixing. The spill area may then be flushed with large quantities of water. Larger spills should be contained by diking with sand, soil or other absorbent, non-combustible material, then transferred into approved waste containers for proper disposal. Do not allow spilled, or waste product to flow into waterways. Keep product out of sewers, storm drains, surface run-off water and soil. Restrict access to non-protected personnel. Comply with all government regulations on spill reporting, and handling and disposal of waste.

Disposal methods: Dispose of contaminated product and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, provincial and local regulatory agencies to ascertain proper disposal procedures.

Note: Empty containers can have residues, gasses and mists, and are subject to proper waste disposal as mentioned above.

Storage & Handling Precautions: Warning! Harmful or fatal if swallowed. Causes eye, skin and respiratory irritation. Avoid contact with eyes and repeated contact with skin and clothing. Do not ingest. Keep container tightly closed when not in use. Store upright in a cool, dry, well-ventilated place away from incompatible materials. Do not use pressure to empty container. Wash thoroughly after handling. Use with adequate ventilation.

Repair and Maintenance Precautions: Do not cut, grind, weld or drill in, on or near this container.

Section 8 - First Aid Measures

If inhaled: Remove victim to fresh air. Give artificial respiration if not breathing. Get immediate emergency medical attention. Keep patient warm and at rest.

In case of eye contact: Immediately flush eyes with clean water for at least twenty (20) minutes, lifting the upper and lower eyelids to ensure complete flushing action of the eyeball. Get immediate emergency medical attention. Do not transport victim until the recommended flushing period has been completed, unless eye flushing can be carried out during transport.

In case of skin contact: Immediately flush skin with plenty of clean running water for at least twenty (20) minutes. Remove contaminated clothing and shoes. Get immediate medical attention. Launder clothes before re-use.

In case of ingestion or swallowing: If victim is conscious, dilute stomach contents by giving large amounts of water or milk. DO NOT INDUCE VOMITING. Never give anything by mouth to an unconscious victim. GET IMMEDIATE EMERGENCY MEDICAL ATTENTION.

Section 9 - Preparation Information

Advance Chemicals Limited expressly disclaims all expressed or implied warranties of merchantability and fitness for a particular purpose with respect to the product provided. The information contained herein is offered only as a guide to the handling of this specific product, and has been prepared in good faith by technically knowledgeable personnel. This M.S.D.S. is not intended to be all-inclusive, and the manner and conditions of use may involve other and additional considerations.

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