AMMONIUM HYDROXIDE

PRODUCT IDENTIFICATION:

Synonyms: Aqua ammonia; ammonia water; ammonium hydrate

Formula CAS No.: 1336-21-6

Molecular Weight: 35.05

Chemical Formula: NH₄OH

Hazardous Ingredients: Ammonium hydroxide

PRECAUTIONARY MEASURES

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES BURNS.

Do not get in eyes, on skin, or on clothing.
Avoid breathing vapor.
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.
This substance is classified as a POISON under the Federal Caustic Poison Act.

EMERGENCY/FIRST AID

If swallowed, give several glasses of water to drink to dilute.
Vomiting may occur spontaneously, but DO NOT INDUCE!
If inhaled, remove to fresh air. If not breathing, give artificial respiration.
If breathing is difficult, give oxygen. In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. In all cases call a physician.

SECTION 1 Physical Data

Appearance: Clear, colorless solution.
Odor: Ammonia
Solubility: Infinite in water.
Boiling Point: ca. 36°C (97°F)
Melting Point: -72°C (-98°F)
Specific Gravity: 0.9
Vapor Density (Air = 1): 1.2
Vapor Pressure (mm Hg): 115 @ 20°C (68°F)
Evaporation Rate: No information found.

SECTION 2 Fire and Explosion Information

Fire:
Autoignition temperature 551°C (1204°F) as NH₄
Flammable limits in air volume % (as NH₄): loe: 16; uel: 27.

Explosion:
Not considered to be an explosion hazard.

Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire. Use water spray to blanket fire, cool fire exposed containers, and to flush non-ignited spills or vapors away from fire.

Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

SECTION 3 Reactivity Data

Stability:
Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:
Emits toxic fumes of ammonia and nitric oxides when heated to decomposition.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
Acids, acrolein, dimethyl sulfide, halogens, silver nitrate, propylene oxide, nitromethane, silver oxides, silver permanganate, oleum, beta-propiolactone.

SECTION 4 Leak/Spill Disposal Information

Ventilate and evacuate area. Clean-up personnel require protective clothing and respiratory protection from vapors. Allow only qualified personnel to handle the spill. Contain and recover liquid when possible. Spills may be neutralized with dilute hydrochloric acid or dilute sulfuric acid and discharged to sewer with large amounts of water. Regulations for pH, ammonia content and salts for effluents must be considered. Do not flush directly to sewers. Alternatively, spills may be absorbed with dry inert material and collected for disposal in a RCRA approved facility. Reportable Quantity (RQ) (CWA/CERCLA): 1000 lbs.

Ensure compliance with local, state and federal regulations.
SECTION 5  Health Hazard Information

EXPOSURE / HEALTH EFFECTS

Inhalation:
May cause irritation to the respiratory tract, symptoms may include coughing, sore throat, and labored breathing. High concentrations may cause laryngitis, tracheitis, pulmonary edema, chest pains, or pneumonitis.

Ingestion:
May cause corrosion to the esophagus and stomach with irritation and peritonitis. Symptoms may include pain in the chest, and abdomen, with coughing, vomiting, and collapse.

Eye Contact:
May cause skin burns with vesication.

Skin Contact:
May cause skin burns with vesication.

Reproduction:
No data available.

Aggravation of Pre-existing Conditions:
Persons with pre-existing eye disorders or impaired respiratory function may be more susceptible to the effects of this material.

B. FIRST AID

Inhalation:
Remove from fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:
Give several glasses of water to drink to dilute. Vomiting may occur spontaneously, but do not induce. Get medical attention immediately.

Skin Exposure:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician.

Eye Exposure:
Wash eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

C. TOXICITY DATA (RTECS, 1986)

Oral rat LD50: 350 mg/kg Mutation Effects cited
Irritation eye rabbit: 44ug Severe Aquatic Toxicity Rating: TLm 96: 100 - 10 ppm

SECTION 6  Occupational Control Measures

Airborne Exposure Limits:
-OSHA Permissible Exposure Limit (PEL):
  35 ppm (NH₃) (STEL)
-ACGIH Threshold Limit Value (TLV):
  25 ppm (NH₃) (TWA) 35 ppm (STEL)

SECTION 7  Storage and Special Information

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Separate from incompatibilities. Protect from direct sunlight.

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