

**1. IDENTIFICATION**

Product name Ammonium Hydroxide Solution 24.5%  
Common name Ammonium Hydroxide NH<sub>4</sub>OH  
Chemical type Strong base  
Recommended restrictions Use in accordance with supplier's recommendations  
Company Name CALAMCO  
1776 W. March Lane  
Suite 420  
Stockton, California 95207  
  
Corporate Office  
(209) 982-1000  
  
24 Hour / Emergency Contact  
(209) 466-9957  
  
Emergency Call CHEMTREC day or night  
1-800-424-9300

**2. HAZARD(S) IDENTIFICATION**

GHS Classification: Acute Toxicity Oral: 4  
Acute Toxicity inhalation: 3  
Skin Corrosion: 1  
Eye Effects: 1

Pictogram(s):



Signal Word: DANGER  
Hazard Statement: Harmful if swallowed. Causes severe skin burns and eye damage. Harmful if inhaled  
Precautionary Statement(s): Do not breathe gas/mist/vapors/spray. Do not get in eyes, skin, or on clothing. Wash thoroughly after handling. Do not eat, drink, or smoke when using this product. Wear protective gloves, clothing, eye, and face protection. If swallowed or if inhaled call a poison center or doctor if you feel unwell. Rinse mouth. Remove person to fresh air and keep comfortable for breathing. If on skin rinse skin with water/shower. Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. See first aid instructions and specific treatment on this label. If in eyes rinse cautiously with water for thirty minutes. Remove contact lenses, if present and easy to do so. Get medical attention.  
  
Other Hazard(s): Not listed

**3. COMPOSITION / INFORMATION INGREDIENTS**

This product contains a homogenous blend of the following ingredients:

Chemical Name and Synonyms	C.A.S. No.	Chemical Formula	WT%
Ammonium Hydroxide	1336-21-6	NH4OH	10-35%
Water	7732-18-5	H2O	65-90%

\*ingredients without WT% are considered proprietary based on trade secrets

**4. FIRST-AID MEASURES**

**Ingestion:** Harmful if swallowed. Cause gastrointestinal burns. Contact physician immediately for guidance.

**Inhalation:** Mist or vapor extremely irritating to the respiratory tract. REMOVE IMMEDIATELY FROM EXPOSURE AREA TO FRESH AIR. Support breathing and call a doctor.

**Eyes:** Can cause eye burns. IMMEDIATELY FLUSH EYES with fresh flowing water for a minimum of 30 minutes. Draw back eyelids and flush thoroughly. Call and take to a doctor.

**Skin:** REMOVE CONTAMINATED CLOTHING AND FLUSH SKIN THOROUGHLY WITH RUNNING WATER FOR 30 MINUTES AND CALL A DOCTOR. DO NOT USE SALVES OR OINTMENT ON SKIN. Take to a doctor.

**Notes to Physician:** Symptoms: salivation, nausea, and vomiting. Dyspnea 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. Consult standard literature. Treatment based on the sound judgment of the physician and the individual reactions of the patient.

**5. FIRE-FIGHTING MEASURES**

**Extinguishing Media:** Water spray, water fog. (Dry chemical or CO2 in small fire only.)

**Special Fire Fighting Procedures:** Stop the flow of gas or liquid. Use water to keep fire exposed containers cool and to protect persons affecting the shut-off. Wear self-contained breathing apparatus and full protective clothing. Approach fire upwind and evacuate area downwind

**Unusual Fire and Explosion Hazards** 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.

**6. ACCIDENTAL RELEASE MEASURES**

Personal Protection Precautions, Equipment and Emergency Procedures:	Wash hands after handling. Wear eye and face protection. Rinse thoroughly with water for 30 minutes and get medical attention if irritation continues.
Environmental Precautions:	Keep out of water supplies, lakes, ponds, streams and rivers. Toxic to fish and aquatic life.
Clean up methods:	Stop the flow. Wear self-contained breathing apparatus and full protective equipment and clothing. Approach spill upwind and evacuate area downwind. Prevent runoff from entering streams or drinking water supply or sewers. Dike around 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.

**7. HANDLING AND STORAGE**

Precautions to be taken in handling and storing:	Avoid heating containers of aqua ammonia. Avoid storing in close proximity to strong acids. Avoid contact with skin and eyes. Avoid inhalation of vapors.
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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Chemical Name and Synonyms TLV PEL	Ammonium Hydroxide 18 mg/M3 Not available
Engineering controls:	Not listed
Ventilation Protection:	Local exhaust 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 NH3 concentration below 25 ppm.
Respiratory Protection:	0-300 ppm--type "N" gas mask with full face piece. Over 300 ppm requires SCBA.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Boiling Point:	100oF @ 1 ATM
Solubility in Water:	Complete
Density:	Sp. Gr. .8955 @ 60oC %
Volatiles (by volume):	29.4-30.5%
Flashpoint:	Not listed
Vapor Pressure, mm Hg:	Not listed
Flammability:	Non-flammable
Partition Coefficient:	Not listed
Upper/Lower Flammability or Explosive limit:	Ammonia vapor (16% to 25% by weight in air) <b>Odor:</b> Pungent odor
Autoignition Temperature:	850oC; 1560oF
Odor Threshold:	Not listed
Decomposition Temperature:	Not listed
Melting Point:	Not listed

pH: +13  
 Reaction with Water: None  
 Appearance: Colorless liquid  
 Evaporation: Not listed  
 Vapor Density: Not listed  
 Relative Density: Not listed

**10. STABILITY AND REACTIVITY**

Chemical Stability (Normal Conditions): Stable  
 Reactivity (Normal Conditions): Ammonia is lightly reactive, easily undergoing oxidation, substitution and additional reactions.  
 Conditions to Avoid: Heat, open flames, and electrical equipment and fixtures which are not vapor-proof or grounded.  
 Incompatibility (Material to Avoid): Contact with mercury, chlorine, bromine, iodine, calcium, silver oxide, or hypochlorite can form explosive compounds.  
 Hazardous Decomposition Products: Combustion of ammonia will yield small amounts of nitrogen and water.  
 Hazardous Polymerization: Will not occur

**11. TOXICOLOGICAL INFORMATION**

Oral LD50 (rat) Dermal LD50 (rat) Inhalation (rat) Ammonium Hydroxide 350 mg/kg Not listed LClo: 5000 ppm  
 Symptoms: Salivation, nausea, and vomiting. Dyspnea 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.  
 Carcinogenicity: by IARC?: Yes ( ) No (X) by NTP?: Yes ( ) No (X)

**12. ECOLOGICAL INFORMATION**

Keep away from bodies of water.

**13. DISPOSAL CONSIDERATIONS**

Waste Disposal Procedures: Can be used as a fertilizer material. Consult local authorities for disposal. May be diluted with large amount of water and absorbed into soil.

**14. TRANSPORT INFORMATION**

Shipping name: RQ UN 2672, Ammonia Solutions III  
 Hazard Class: 8  
 C.A.S. Number: See "Ingredients"

Reportable Quantity (RQ): 1000 lbs/454 kg  
D.O.T. Number: UN2672  
Labels Required: Corrosive  
Haz Waste No: D002  
Placard: Corrosive  
EPA Regist No: None

**15. REGULATORY INFORMATION**

TSCA: Yes (X) No ( ) , SARA: Yes (X) No ( ) , Prop 65: Yes ( ) No (X) , CERCLA: Yes ( ) No (X)

This product contains ammonia, CAS No. 1336-21-6, which is subject to the reporting requirements of section 313 of Title III of the Superfund and Reauthorization Act of 1986 and 40 CFR Part 372.

**16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION**

Reviewed by: The Environmental Health & Safety Department July 14, 2014 (209) 982-1000