

MATERIAL SAFETY DATA SHEET

Page 1 of 4

SECTION I - PRODUCT INFORMATION

 MSDS Identity Number 11236
 MSDS prepared date: May 15, 1986
 MSDS revision date: Jun 19, 1989

 Manufacturers Name:
 Michlin Diazo Products Corporation
 10501 Haggerty St.
 Dearborn, MI 48126

 Emergency Phone No: (313) 846-5700
 Chemtrec 24 Hr. Emergency Number in U.S.A.: (800) 424-9300
 Canutec 24 Hr. Emergency Number in Canada: (613) 996-6666

 Product Name: Aqua Ammonia

 Chemical Name: Ammonium Hydroxide Solution #1

 Signature of Preparer Eric Nachlas
Section II - HAZARDOUS INGREDIENTS/IDENTIFY INFORMATION

Ingredients	OSHA	ACGIH	C.A.S. No.	PERCENT
Ammonium Hydroxide Gas dissolved in water	35 (STEL)	25 (T.W.A.) 35 (STEL)	1336-21-6	29.4
Water	None	None		70.6
Non-hazardous Corrosive Inhibitor	None	None		Trace

Section III - PHYSICAL CHARACTERISTICS

 Physical State: Liquid
 Appearance/Odor: Colorless liquid with pungent irritating odor
 Odor Threshold: Less than 5 ppm
 Specific Gravity (H₂O =1): 0.8974 @ 15.5 C
 Boiling Point (Deg. C): 27 C
 Melting/Freezing Point: Approximately -75 C

(CONT.) PHYSICAL CHARACTERISTICS

Vapor Pressure (mm Hg): 475 mmHg @ 15.5 C pH: 12.0
Bulk Density: N/A Sensitivity to Mechanical Impact: N/A
Evaporation Rate (Water =1): No data Rate of Burning: N/A
Percent Volatile by Volume: No data Explosive Power: N/A
Solubility in Water: 100% in water, Sensitivity to Static Discharge: N/A
also soluble in Methanol and Ethanol
Coefficient of Water/Oil Distribution: N/A

Section IV - FIRE AND EXPLOSION DATA

Flammability Yes No
Flash Point: Not applicable, not flammable
Flammable Limits: % LEL: 16 UEL: 25 (for ammonia)
Autoignition Temperature: for ammonia 651 C
Fire Extinguishing Media: CO2, Dry Chemical, Water Spray
Other Fire or Explosion Hazards: Contact with strong oxidizers will cause fires or explosions.

Special Fire Fighting Procedure: Not considered a primary fire hazard, but care should be taken to avoid exposure to liquid product involved in fire. Evacuate area of unprotected personnel. Wear protective clothing including a NIOSH - Approved self-contained breathing apparatus. Apply water from as far a distance as possible. Use water spray to knock down vapors.

Section V - REACTIVITY DATA

Stability: Unstable
 Stable

Conditions to Avoid: Excessive heat
Incompatibility (Materials to Avoid): Contact with calcium hypochlorite, bleaches, gold, mercury, and silver may form highly explosive products. Contact with iodine, bromine, chlorine may cause violent spattering.

Hazard Decomposition Products: Will liberate ammonia if heated.

Hazardous Polymerization: May Occur
 Will Not Occur

Section VI - TOXICOLOGICAL AND HEALTH INFORMATION

Route (s) of Entry:**Toxicological Data:** LD50 (oral, rat): 350 mg/kg**Mutagenicity Data:** N/A**Exposure Limit:** ACGIH TLV-TWA: 25 ppm as ammonia**Teratogenicity Data:** N/A

Carcinogenicity Data: The ingredients of this product are not listed as carcinogens by NTP, (National Toxicology Program), not regulated as carcinogens by OSHA, (Occupational Safety and Health Administration), and have not been evaluated by IARC, (International Agency for Research on Cancer) or ACGIH (American Conference of Governmental Industrial Hygienists).

Synergistic Materials: N/A**Reproductive Effects:** N/A

Acute Over Exposure: Irritation and destruction of tissue on any exposed part of the body due to freezing of tissue and caustic action produced by reaction of ammonia and body moisture. Severe coughing and bronchial spasms can occur.

Chronic Over Exposure: Ammonia is not accumulated in the body and there is no evidence of chronic effect.

Section VII - PREVENTION DATA

Personal Protective Equipment: Face shield, boots, resistant clothing.

Skin Protection: Rubber gloves are recommended.

Gloves: Rubber (Latex). Neoprene gloves must be worn to prevent skin contact.

Other personal protection: Eye wash station in area recommended.

Respiratory: Self-contained breathing apparatus (for large spills).

Engineering Controls: Local exhaust ventilation required to comply with the OSHA threshold limit.

Eye: Chemical splash goggles must be worn to prevent eye contact with liquid and vapor.

Section VIII - FIRST AID MEASURES

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. Keep patient warm and at rest. Obtain medical attention immediately.

Skin: Flush with abundance of water, remove contaminated clothing, remove patient to fresh air.

Eye: Flush with water for at least 15 minutes; if irritation persists, call physician.

Ingestion: Do not induce vomiting; call physician.

Section IX - SPILL, LEAK, DISPOSAL PROCEDURES

For Spills: (Large quantities) Stop the discharge if possible and contain by constructing barriers (dykes, lagoons) for release to land, reclaim product for reuse or treat with neutralizing agent and recover for disposal. For release to water, contain by damming and water diversion if possible, neutralize and recover for disposal. Use water spray to control vapors. Report significant spills to government environmental authorities when applicable. (E.P.A. Reportable Quantity: 1,000 lbs.)

Waste Disposal: Reclaim as fertilizer if possible. Otherwise dispose of in accordance with local, state or federal regulations.

Section X - SPECIAL PRECAUTIONS

Handling: Avoid contact with either liquid or vapors. Direct contact with mercury must be avoided.

Storage: Store in dry, well-ventilated area away from incompatible materials. Protect against physical damage. Keep out of direct sunlight and away from heat sources.

Other: Containers should be kept well sealed when not in use. Handle as a corrosive liquid. Material may attack zinc, copper, mercury, tin and their alloys.

The information, data, and recommendations in this material safety data sheet relate only to ammonia and its use in the ammonia developing diazo machines. The information, data and recommendations set fourth herein are believed by Michlin Diazo Products Corp. to be accurate. Michlin Diazo Products Corp. makes no warranties, either expressed or implied, with respect thereto and assumes no liability in connection with any use of such information, data, and recommendations.