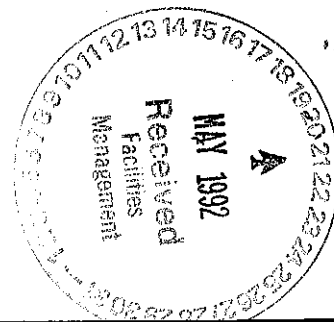




DIAZO PRODUCTS CORPORATION



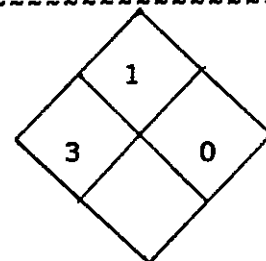
MANUFACTURERS OF CHEMICAL SPECIALTIES AND INSECTICIDES

10501 HAGGERTY STREET • DEARBORN, MICHIGAN 48126 • (800) 521-3240 • (313) 846-5700
MATERIAL SAFETY DATA SHEET

Section I - PRODUCT INFORMATION

MSDS Identity Number 19999
MSDS prepared date: May 15, 1986
MSDS revision date: June 16, 1989

NFPA HAZARD RATING
HEALTH 3
FIRE 1
REACTIVITY 0
SPECIFIC HAZARD



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: Anhydrous Ammonia

Chemical Name: Anhydrous Ammonia, Non-Flammable Gas UN 1005

Signature of Preparer Eric Nechlas

Section II - HAZARDOUS INGREDIENTS/IDENTIFY INFORMATION

Ingredients	OSHA	ACGIH	C.A.S. No.	PERCENT
Ammonium Hydroxide				
Anhydrous	35 STEL	25 PPM	7664-41-7	100
Anhydrous Ammonia is subject to the reporting requirements of SARA (1986, section 313 of Title III and 40 CFR Part 372.				

Section III - PHYSICAL CHARACTERISTICS

Physical State: Liquified Gas
Appearance/Odor: Colorless liquid or vapor with pungent odor.
Odor Threshold: Less than 5 ppm
Specific Gravity (H2O =1): .617
Boiling Point (Deg. C): -33 C
Melting/Freezing Point: -78 C



 (CONT.) PHYSICAL CHARACTERISTICS

Vapor Pressure (mm Hg): 47.6 psig	pH: greater than 13.0 (neat)
Bulk Density: N/A	Sensitivity to Mechanical Impact: N/A
Evaporation Rate (Ether =1): No data	Rate of Burning: N/A
Percent Volatile by Volume: 100%	Explosive Power: N/A
Solubility in Water: at 0 C 90 gms/100 ml	Sensitivity to Static Discharge: N/A
Coefficient of Water/Oil Distribution: N/A	

 Section IV - FIRE AND EXPLOSION DATA

Flammability Yes No

Flash Point: N/A

Flammable Limits: % LEL: 16 UEL: 25

Autoignition Temperature: 651 C

Fire Extinguishing Media: Water spray, fog, dry chemicals, carbon dioxide.

Other Fire or Explosion Hazards: Presence of oil or other combustible materials will increase fire hazard. Tank cars and trucks will vent in fire conditions or high pressure.

Special Fire Fighting Procedure: Stop flow of gas, move containers from fire zone if possible stay clear of tank heads, use water to keep fire exposed.

 Section V - REACTIVITY DATA

Stability: Unstable
 Stable

Conditions to Avoid: Excessive heat.

Incompatibility (Materials to Avoid): Contact with strong oxidizers will cause fire and explosions. Contact with Iodine, Bromine, Calcium, Hypo-chlorite Bleaches, Gold, Mercury, Silver and Chlorine may form high explosive mixtures. Contact with Halogens may cause violent spattering.

Hazard Decomposition Products: Hydrogen and Nitrogen on decomposition at very high temperatures.

Hazardous Polymerization: May Occur
 Will Not Occur

Section VI - TOXICOLOGICAL AND HEALTH INFORMATION

Toxicological Data: LC50 (inhalation, rat):
4837 ppm for 1 hr.

Mutagenicity Data: N/A

Exposure Limit: OSHA TLV-TWA: 50 ppm
STEL: 35 ppm

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 and safety shower 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

Route (s) of Entry:

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; Give 1 - 2 glasses of milk or water call physician.

Section VIII - FIRST AID MEASURES (CONT.)

Emergency Medical Care: Pulmonary edema may be delayed. Injury may be more severe than would be indicated on early presentation. Medical conditions that may be aggravated by exposure include asthma, bronchitis, emphysema and other lung diseases and chronic nose, sinus or throat conditions. In the event of skin or eye contact, rapid and thorough flushing is essential.

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. Reportable Quantity: 100 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 forth 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.

MATERIAL SAFETY DATA SHEET

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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