SENTRY INDUSTRIES INC.

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT & COMPANY IDENTIFICATION

Product Name: Aqua Ammonia
Chemical Name: Ammonia Solution (Ammonium Hydroxide) 29.4%
Manufacturer: Michlin Diazo Products Corp, 10501 Haggerty St., Dearborn, MI. 48126
Emergency Phone No.: (313) 846-5700
24 Hr. Emergency Number in U.S.A. & Canada: (800) 255-3924
Distributor: Sentry Industries 5687 N.W. 36th Ave. Miami Fl. 33142
Telephone: (305) 638-0800, (954) 527-4000, (800) 227-2047
Product Use: Fertilizer, pharmaceutical, household cleaners, diazo developer.

SECTION 2 HAZARDS IDENTIFICATION

Health Effects of Overexposure:

Eye Contact: Corrosive! Effects as a result of direct contact with aqua ammonia or exposure to ammonia gas may range from irritation to severe injury and blindness.

Skin Contact: Corrosive! Concentrated solutions may cause pain and deep and severe burns to the skin. Prolonged and repeated exposure to dilute solutions often causes irritation, redness, pain and drying and cracking of the skin.

Inhalation: Corrosive! Mist of 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.

Ingestion: Corrosive! May cause severe pain in the mouth, chest, and abdomen leading to cough, vomiting and collapse. Gastric or esophageal perforation may occur and lung irritation or edema may occur as a delayed effect.

Other Health Effects: Corrosive effects on the skin and eyes may be delayed, and damage may occur without the sensation or onset of pain.

SECTION 3 COMPOSITION / INGREDIENTS

Ingredient(s):	Percent by Weight	CAS #
Ammonia gas in water.	29.4 %	1336-21-6
Water	70.6 %	07732-18-5

SECTION 4 FIRST AID

NOTE: CALL A POISON CONTROL CENTER OR MEDICAL PHYSICIAN FOR ADVICE. HAVE THE PRODUCT LABEL OR MSDS WITH YOU WHEN CALLING OR GOING FOR MEDICAL TREATMENT.

Emergency First Aid Procedures:

Eye Contact: Immediately flush eyes with running water for a minimum of 20 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Obtain medical treatment IMMEDIATELY. Do not transport victim until the recommended flushing period is completed unless flushing can be continued during transport.

Skin Contact: Flush skin with running water for a minimum of 20 minutes. Start flushing while removing contaminated clothing. If irritation persists, repeat flushing. Obtain medical treatment IMMEDIATELY. Do not transport victim until the recommended flushing period is completed unless flushing can be continued during transport.

Inhalation: Move victim to fresh air. Give artificial respiration ONLY if breathing has stopped. Give cardiopulmonary resuscitation (CPR) if there is no breathing AND no pulse. Oxygen administration may be beneficial in this situation but should only be administered by personnel trained in its use. Obtain medical attention IMMEDIATELY.

Ingestion: If victim is alert and not convulsing, rinse out mouth and give glass of water to dilute material. DO NOT induce vomiting. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more water. IMMEDIATELY transport victim to an emergency facility

Other Health Effects: Corrosive effects on the skin and eyes may be delayed, and damage may occur without the sensation or onset of pain. Strict adherence to first aid measures following any exposure is essential.

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 5 FIRE FIGHTING MEASURES

Flammability:	No
Flash Point:	None Non-flammable
Flammable Limits:	N/A Non-flammable
Autoignition Temp:	For ammonia is 651^0C, 1204^0F
Extinguishing Media:	$C0_2$, Dry Chemical, Water Spray
Other hazards:	Contact with strong oxidizers will cause fires or explosions.

National Fire Rating System (NFPA):	
Health (Blue)	2
Fire (Red)	0
Reactivity (Yellow)	0
Specific Hazard (White)	COR

Special Fire Fighting Procedures: Use water to keep fire exposed containers cool. Use water fog to reduce vapor concentration if necessary. Full protective equipment including a self-contained breathing apparatus should be worn in a fire involving the material. Apply water from a distance. Avoid inhalation of fumes and body contact.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Steps to be taken in the event of a spill or leak: Stop the discharge if possible and contain by constructing barriers (dykes, lagoons) for release to land, reclaim product fir 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.
Deactivating Chemicals: Neutralize with weak acid to a pH of 6 to 9.

SECTION 7 HANDLING & STORAGE

Handling Procedures and Equipment: Avoid contact with either liquid or vapors. Direct contact with mercury must be avoided.
Storage Temperature: Ambient
Storage Requirements: 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 precautions: 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 and some forms of plastic, rubbers and coatings. Locate safety shower and eyewash station close to chemical handling area.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Local exhaust ventilation required.
Respiratory Protection: NIOSH/MSHA approved air-purifying respirator equipped with ammonia cartridges for concentration up to 250 ppm NH3. Air supplied respirator for concentrations that are higher or unknown.

Skin Protection: Nitrile rubber, neoprene, or PVC gloves and protective clothing should be used.
Eye Protection: Use gas-tight chemical safety goggles when there is a potential for eye contact.
Other Personal Protective Equipment: Face shield, rubber boots, resistant clothing.

SECTION 9 PHYSICAL DATA

Physical State:	Liquid	Appearance and Odor:	Colorless liquid with pungent irritating odor.
Odor Threshold:	< = 5 ppm	Spec Gravity:	0.8974@15.5^{0}C
Boiling Point:	80.6^0 F (27^{0}C)	Melting/Freezing Point:	Approximately -75^{0}C (-167^{0}F)
pH:	12.0		
Vapor Pressure:	475 mmHg @ 15.^{0}C	Vapor Density:	0.6 for ammonia (air = 1)
Sensitivity to Mechanical Impact:	N/A		
Evaporation Rate:	No Data	Explosive Power:	N/A
Solubility in Water	100%	Coefficient of Water/ Oil Distribution:	N/A

SECTION 10 STABILITY & REACTIVITY

Stability:	Stable when properly stored and handled. Will liberate ammonia.
Incompatibility (Materials to Avoid):	Strong acids, Ammonia reacts with chlorine, bromine, mercury, silver, silver solder. Avoid the use of non-ferrous metals.
Hazardous Decomposition Products:	High temperature decomposition products may include oxides of nitrogen.
Conditions to avoid:	Excessive heat.
Hazardous Polymerization:	Will not occur

SECTION 11 TOXILOGICAL INFORMATION

OSHA:	TWA 50 ppm as ammonia
ACGIH:	25 ppm (STEL) as ammonia
Toxicological Data:	LD50 (oral, rat) = 350 mg/ky, LC50 (inhalation, mouse) = 2115 ppm for 4 hours
Carcinogen Status:	No components of this product at concentrations greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as carcinogen.

SECTION 12 ECOLOGICAL INFORMATION

Environmental Effects: Do not allow to enter drinking water intakes. Ammonium hydroxide is harmful to aquatic life even at low concentration (96 hour TLm=10 – 100 ppm). Does not bioaccumulate.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Reclaim as fertilizer if possible. Otherwise dispose in accordance with local, provincial or federal regulations. Do not dispose of wastes to local sewage system.
If spill exceeds 125 gallons, report incident to EPA, STATE, and LEPC (Local Emergency Planning Committee)

SECTION 14 TRANSPORTATION INFORMATION

DOT Proper Shipping Name:	Ammonia Solution
DOT Hazard Class:	8 (Corrosive)
DOT Identification #:	UN2672
Packing Group:	III
RQ:	N/A

SECTION 15 REGULATORY INFORMATION

OSHA Hazard Communication (29 CFR 1910.1200) Classification: Toxic, Corrosive
DISPOSAL OF UNUSED AMMONIA SOLUTION: The EPA establishes the water standards that each city or township must meet before the water from their sewer system can be discharged into lakes or streams, often ammonia solution (ammonium hydroxide) can help meet their standards. Contact your local sewer department for approval before disposing of unused ammonia solution down the sewer, sink, drain, or toilet.

SECTION 16 OTHER INFORMATION

4/15/08 – Revise formatting to GHS standards.
5/20/04 – Previous MSDS revision

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