Material Safety Data Sheet

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MSDS # 1138
Date 05/30/06

Supercedes
MSDS # 1138 02/07/05

SECTION I - PRODUCT IDENTIFICATION

Trade Name(s): Urea – Ammonium Nitrate Solution

Synonyms: UAN 23%, 26%, 32%; Non-Pressure Nitrogen Fertilizer Solution; Nitrogen Solution 23%, 32%; 23-0-0; 32-0-0

Product Class: Ammonium Nitrate Solutions; Urea Solutions

Product Appearance & Odor: Colorless liquid, may be dyed blue, slight ammonia odor.

DOT Hazard Shipping Description: Not hazardous per DOT regulations.

NFPA Hazard Classification:
Health (Blue) = 1
Flammability (Red) = 0
Reactivity (Yellow) = 0

SECTION II - HAZARDOUS INGREDIENTS

			Occupational Exposure Limits	
Ingredients:	**CAS#**	**% (Range)**	**ACGIH TLV-TWA**	**OSHA PEL-TWA**
Urea	57-13-6	28 - 37%	None	None
Ammonium Nitrate	6484-52-2	24 - 46%	None	None

Ingredients, other than those mentioned above, as used in this product are not hazardous as defined under current Department of Labor regulations, or are present in deminimus concentrations (less than 0.1% for carcinogens, less than 1.0% for other hazardous materials).

SECTION III - PHYSICAL DATA

Boiling Point: 100°C (212°F) water
Vapor Pressure: Not applicable
Vapor Density: Not applicable
Specific Gravity: 1.29 – 1.33 g/cc (10.8 – 11.1 lb/gal)
Percent Volatile by Volume: Not applicable
Solubility in Water: soluble
Crystallization Temperature: -11°C (12°F) for 32.5% and 0°C (32°F) for 40% solution

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point: Not applicable **Flammable Limits:** Not applicable
Extinguishing Media: Not applicable
Special Fire Fighting Procedures: Cool containing vessels with flooding quantities of water until well after fire is out. Firefighters should wear self-contained breathing apparatus and full protective clothing if Urea-Ammonium Nitrate solution reaches decomposition temperature.
Unusual Fire and Explosion Hazards: Material will not burn but thermal decomposition may result in flammable/toxic gases being formed if evaporated to near dryness. Dry residue may form explosive mixtures with organic materials. Avoid temperatures above 100°C (212°F) which may result in evaporation, thermal decomposition or explosion. May explode by detonation, heat or shock when evaporated to near dryness. Solution may detonate if subjected to heat and pressure. If evaporated to dryness, acts as an oxidizing agent, supports combustion by liberating oxygen even if smothered.

SECTION V - HEALTH HAZARD DATA

Effects of Overexposure

Eyes: Dried salts or liquid may cause redness, pain and irritation to eye.
Skin: Dried salts or liquid may irritate skin resulting in reddening of the skin and possible dermatitis. Frequent or prolonged contact may promote an allergic reaction.
Ingestion: Dried salts or liquid may cause gastric irritation, nausea, abdominal spasms, vomiting and faintness. Large doses may cause systemic acidosis and methemoglobinemia.
Inhalation: Dried salts may be irritating to mucous membranes, respiratory tract, causing sore throat, coughing, difficult breathing and severe lung congestion. Delayed reactions may result in pulmonary edema and chemical pneumonitis.
Systemic or Other Effects: The smell of ammonia, in the vapor space above the liquid, or dried salt may aggravate preexisting dermatitis and lung conditions.
Carcinogenicity: NTP: No IARC Monographs: No OSHA Regulated: No

Emergency and First Aid Procedures

Eyes: Immediately flush with large amounts of water, including under the eyelids. If discomfort persists contact a physician, preferably an Ophthalmologist. Speed and thoroughness in rinsing eyes are important to avoid permanent injury.
Skin: Immediately remove contaminated clothing and shoes. Wash the affected area with soap and flush with large amounts of water. Get medical attention if discomfort persists.
Ingestion: Do not induce vomiting. If vomiting occurs, keep head below hips to help prevent aspiration. Get immediate medical attention. Treat for methemoglobinemia.
Inhalation: Remove to fresh air. If breathing has stopped, apply artificial respiration. Keep warm and at rest. Get immediate medical attention.
Special Considerations: None.

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SECTION VI - REACTIVITY DATA

Stability: Stable.
Conditions to Avoid: Avoid exposing containers to heat or flame. Keep separated from incompatible materials.
Materials to Avoid (Incompatibility): Concentrated acids, strong bases, and heat.
Hazardous Decomposition Products: Ammonia and Nitrogen Oxides (Nitric Oxide and Nitrogen Dioxide).
Hazardous Polymerization: Will not occur.

SECTION VII - SPILL OR LEAK PROCEDURES

Steps to be taken in Case Material is Released or Spilled: Remove sources of heat or ignition. Contain spills as much as possible. Do not flush to surface water. Spilled chemical can be used as fertilizer. Follow applicable Federal, State and local reporting requirements.
Waste Disposal Method: Dispose through a licensed waste disposal company. Follow federal, state and local regulations. Contaminated dirt may be spread as a fertilizer.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Ventilation: Provide adequate general and local exhaust ventilation to attain occupational exposure limits, particularly in a confined space area.
Respiratory Protection: Dried salt or aerosol solution will dissolve with mucosal membrane contact (lungs). Use approved respiratory protective equipment for cleaning large spills or upon entry into large tanks, vessels, and other designated confined space areas or in any situations where airborne concentrations may exceed occupational exposure limits. (15 mg/m^3, dust)
Protective Clothing: UAN 32% is an aqueous salt solution and will dissolve with perspiration contact. Wearing of appropriate protective clothing and gloves is suggested if epidermal sensitivity develops.
Eye Protection: UAN 32% is an aqueous salt solution and will dissolve with mucosal membrane contact (eyes). Remove contact lenses and wear safety glasses, chemical goggles or face shield where contact with liquid or dried salt may occur.
Other Precautions Required: None.

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be taken in handling and storage: Store in compliance with all Federal, State, and local regulations. Store in a well ventilated area, away from incompatible materials or sources of heat and ignition. Empty containers may contain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flames, sparks or other sources of ignition; they may evolve noxious fumes.
Other Precautions: Never heat a dried UAN solution, especially when confined. Never combine with nitric acid.

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SECTION X - SPECIAL INFORMATION

EPCRA Section 311/312 Hazard Categorization:

Acute	Chronic	Fire	Pressure	Reactive
X				

This product contains the following substances that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Chemical Name	CAS Number (Use Toxic Chemical Category Code)	% By Weight
Nitrate Compounds (Water dissociable reportable only when in aqueous solution)	N511	24 – 46%
Ammonia (Aqueous from dissociable salts)	7664-41-7	6 – 13%

Slightly toxic to aquatic organisms as defined by USEPA.

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