

# Material Safety Data Sheet

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**MSDS # 1140**  
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1140 5/30/06

## SECTION I - PRODUCT IDENTIFICATION

**Trade Name(s):** Ammonium Nitrate 10% N Liquid Fertilizer

**Chemical Name:** Ammonium Nitrate, NH<sub>4</sub>NO<sub>3</sub>

**Synonyms:** AN 14% to 35%, Weak Ammonium Nitrate Solution, 5% to 12% Nitrogen Solution, 5-0-0 to 11-0-0, Non-Pressure Nitrogen Fertilizer Solution)

**Product Appearance & Odor:** Clear to brown liquid. Slight ammonia odor.

**DOT Hazard Shipping Description:** None

Label: None

### NFPA Hazard Classification:

Health (Blue)	1
Flammability (Red)	0
Reactivity (Yellow)	0
Specific Hazard (White)	None

### HMIS (III) Classification:

Health	1
Flammability	0
Physical Hazard	0
PPE	E

## SECTION II - HAZARDOUS INGREDIENTS

Ingredients:	CAS#	% (Range)	Occupational Exposure Limits	
			ACGIH TLV-TWA	OSHA PEL-TWA
Ammonium Nitrate	6484-52-2	14 – 35%	Not Established	Not Established

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) @ 1 atmosphere  
Decomposes between 179-210°C (350-410°F)

**Vapor Pressure:** 182 mm Hg (85% AN @ 200°F)

**Crystallization Temperature:** <0°C (32°F)  
**Percent Volatile by Volume:** 68 – 86% (Water)  
**Evaporation Rate (Butyl Acetate = 1):** Not Applicable

**Density:** 1.07 – 1.10 g/cc  
**Solubility in Water:** 118 g (dry) / 100 g @ 0°C (32°F)  
**pH:** 5.5 – 7.5

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## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

**Flash Point:** Not Applicable

**Flammable Limits:** Not Applicable

**Extinguishing Media:** Use water only. Do not attempt to smother. Do not use salt water, dry chemical, carbon dioxide, steam or foam.

**Special Fire Fighting Procedures:** Use large quantities of water to cool. If possible, plug drains or dike channels to prevent water runoff from entering storm drains or surface waters. Firefighters should wear self-contained breathing apparatus (SCBA) and full turnout gear.

**Unusual Fire and Explosion Hazards:** Aqueous solutions of Ammonium Nitrate will not burn or support combustion, but will decompose into noxious, poisonous gases when exposed to the high temperatures of a fire. The solutions may explode under fire conditions if confined and dried to a low percentage of water. Dried or concentrated AN may explode more readily or detonate under confinement and fire conditions if contaminated with organic materials or other fuels. Ammonium nitrate emits toxic nitrogen oxides when heated to decomposition and will release ammonia to air upon reaction with strong alkalis.

## SECTION V - HEALTH HAZARD DATA

**Carcinogenicity:** NTP: No IARC Monographs: No OSHA Regulated: No

### Effects of Overexposure

Not found to be toxic by oral, dermal and inhalation exposure as defined by OSHA.

**Eyes:** Dried salts, liquid or vapors may cause irritation, redness and tearing.

**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, abdominal spasms, nausea, pain and faintness. Large amounts may be harmful if swallowed, potentially causing systemic acidosis and methemoglobinemia.

**Inhalation:** Dried salts or vapor may be irritating to mucous membranes and respiratory tract, and may cause sore throat, coughing, difficult breathing and severe lung congestion, and may also aggravate pre-existing lung conditions. Inhalation of dust may also lead to ingestion effects. Delayed reactions may result in pulmonary edema and chemical pneumonitis.

**Systemic or Other Effects:** Decomposition of AN solution at high temperatures produces highly toxic Nitrogen Oxides ( $\text{NO}_x$ ). High level exposure to  $\text{NO}_x$  can cause serious injury or death. Chronic exposure to  $\text{NO}_x$  can produce respiratory and/or kidney damage.

### Emergency and First Aid Procedures

**Eyes:** Immediately irrigate with running water for at least fifteen minutes, including under the eyelids. If discomfort persists, seek medical attention.

**Skin:** Immediately remove contaminated clothing and wash with soap and flush with large amounts of water. Seek medical attention if discomfort persists.

**Ingestion:** Do not induce vomiting. Seek immediate medical attention. Treat for methemoglobinemia.

**Inhalation:** Remove to fresh air. If symptoms persist or worsen, seek prompt medical attention.

**Special Considerations:** If an exposure to toxic  $\text{NO}_x$  vapors occurs, restore or support breathing as necessary, seek medical attention. Observe for delayed reactions to  $\text{NO}_x$  exposure that may involve pulmonary edema.

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## SECTION VI - REACTIVITY DATA

**Stability:** Stable under normal conditions.

**Conditions to Avoid:** Keep away from excessive heat, flame and ignition sources.

**Materials to Avoid (Incompatibility):** Corrosives (strong acids and bases).

**Hazardous Decomposition Products:** Nitrogen Oxides (NO<sub>x</sub>), Ammonia (NH<sub>3</sub>), Nitric Acid (HNO<sub>3</sub>).

**Hazardous Polymerization:** Does 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. Dike and contain spill, do not flush to surface water. Follow applicable federal, state, and local spill reporting requirements. Contact of this product with water may result in a reportable release.

**Waste Disposal Method:** Disposal must comply with any applicable State and local regulations. Ammonium Nitrate is used as a fertilizer and, in some cases, recovered material and contaminated soil may be put to beneficial use.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

**Ventilation:** General room ventilation is normally adequate.

**Respiratory Protection:** None normally required. Dried salt or aerosol solution will dissolve with mucosal membrane contact (lungs). Use approved respiratory protective equipment for cleaning dried out 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<sup>3</sup>, dust).

**Protective Clothing:** Chemical resistant gloves and work clothing that reduce skin contact (preferably tightly woven, non-porous or splash resistant) are recommended, especially if skin sensitivity develops.

**Eye Protection:** Safety glasses with side shields, goggles or face shield. Eye baths should be provided when direct eye contact is likely.

**Other Precautions Required:** None.

## SECTION IX - SPECIAL PRECAUTIONS

**Precautions to be Taken in Handling and Storage:** Keep separate from other chemicals and combustible material. 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 without first thoroughly decontaminating the containers; they may evolve poisonous gas and cause injury or death. Avoid letting AN solutions dry out.

**Other Precautions:** AN is corrosive to carbon steel and some other materials. Stainless steel or aluminum is preferred construction. Avoid mixing with basic materials that cause evolution of ammonia vapors. Never heat a dried AN solution, especially when confined.

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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.

<u>Chemical Name</u>	<u>CAS Number</u> (Use Toxic Chemical Category Code)	<u>% By Weight</u>
Nitrate Compounds	N511 (Water dissociable reportable only when in aqueous solution)	11 – 27%
Ammonia	7664-41-7 (Aqueous from dissociable salts)	3 – 8%

Slightly toxic to aquatic organisms as defined by USEPA.

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