



MATERIAL SAFETY DATA SHEET  
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MSDS# 1138

DATE: 01/23/04

Supersedes MSDS  
Coastal UAN Solns

## Urea - Ammonium Nitrate Solution: Product Identification

**Trade Name:** Urea - Ammonium Nitrate Solution  
**Synonyms:** UAN 23%, 26%, 32%; Non-Pressure Nitrogen Fertilizer Solution; Nitrogen Solution 23%, 26%, 32%; 23-0-0; 26-0-0; 32-0-0  
**Chemical Family:** Aqueous inorganic salt solution  
**Chemical I.D. No.:** None  
**Chemical Formula:** Urea, CO(NH<sub>2</sub>)<sub>2</sub> and Ammonium Nitrate, NH<sub>4</sub>NO<sub>3</sub>  
**DOT Hazard Class:** None  
**Label Required:** None

## Urea - Ammonium Nitrate Solution: Composition

| Ingredients      | CAS Number | Wt%       | OSHA PEL <sup>1</sup> | ACGIH STEL <sup>2</sup> | NIOSH IDLH <sup>3</sup> | Units |
|------------------|------------|-----------|-----------------------|-------------------------|-------------------------|-------|
| Urea             | 0057-13-6  | 28.0-37.0 | N.A.                  | N.A.                    | N.A.                    | N.A.  |
| Ammonium Nitrate | 6484-52-2  | 24.0-46.0 | N.A.                  | N.A.                    | N.A.                    | N.A.  |
| Water            | 7732-18-5  | 20.0-43.0 | N.A.                  | N.A.                    | N.A.                    | N.A.  |

1 = Permissible Exposure Limit (8-Hr. Time Weighted Average).

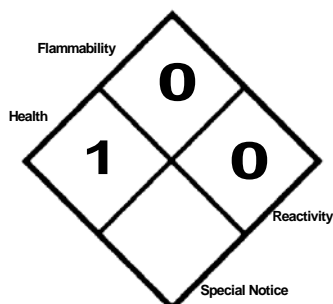
2 = Short Term Exposure Limit (15 Minute Exposure).

3 = Immediately Dangerous to Life and Health.

N.A. = Not Available

## Urea - Ammonium Nitrate Solution: NFPA Code

- 1 Health Hazard (Blue):**  
Can cause irritation if not treated.
- 0 Flammability Hazard (Red):**  
Will not burn.
- 0 Reactivity Hazard (Yellow):**  
Normally stable. Not reactive with water.
- NONE Special Notice (White):**  
None



## Urea - Ammonium Nitrate Solution: Physical and Chemical Properties

|                                      |  |
|--------------------------------------|--|
| <b>Boiling Point:</b>                | 212°F (100°C) @ 1 atmosphere                     |
| <b>Decomposition Temperature:</b>    | 237°F (114°C)                                    |
| <b>Crystallization Temperature:</b>  | 32°F (0°C) (minimum)                             |
| <b>Solubility in H<sub>2</sub>O:</b> | 118g/100g @ 32°F (0°C)                           |
| <b>Specific Gravity:</b>             | 10.8 - 11.1 lb/gal @ 60°F (0°C) 1.29 – 1.33 g/cc |
| <b>pH:</b>                           | 5.5-7.5  |
| <b>Odor:</b>                         | Slight Ammonia Odor                              |
| <b>Appearance:</b>                   | Clear liquid / Dyed blue                         |

## Urea - Ammonium Nitrate Solution: Fire and Explosion Data

|  |                          |
|--|--------------------------|
| <b>Flash Point:</b>                    | N.A.                     |
| <b>Flammable Limits in Air %/Vol.:</b> | Lower: N.A., Upper: N.A. |
| <b>Autoignition Temperature:</b>       | N.A.                     |
| <b>Extinguishing Media:</b>            | N.A.                     |

N.A. (Not Available)

**Special Fire Fighting Procedure:** Firefighters should wear self-contained breathing apparatus and full protective clothing.

**Unusual Fire or Explosion Data:** Aqueous solutions of Urea- 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 become explosive if combined with a flammable substance and/or dried to a low percentage of water.

## Urea - Ammonium Nitrate Solution: Reactivity Data

|   |  |
|---|--|
| <b>Stability:</b>                             | Stable unless heated to decomposition.                       |
| <b>Hazardous Polymerization:</b>              | Will not occur.  |
| <b>Conditions to avoid / Incompatibility:</b> | Concentrated acids, strong bases, and heat.                  |
| <b>Hazardous Decomposition Products:</b>      | Ammonia, oxidized further to Nitric Oxide, Nitrogen Dioxide. |

## Urea - Ammonium Nitrate Solution: Health Hazard Data

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

### Occupational Exposure Limits:

**OSHA Permissible Exposure Limit (PEL):** None established for Urea - Ammonium Nitrate.  
**ACGIH Short-term Exposure Limit (STEL):** None established for Urea - Ammonium Nitrate.

**NIOSH Immediately Dangerous to Life and Health (IDLH):** None established for Urea - Ammonium Nitrate.

### Effects of Overexposure:

#### Acute:

**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.

**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.

**Ingestion:** Dried salts or liquid may cause gastric irritation, nausea, abdominal spasms, vomiting and faintness. Large doses may cause systemic acidosis and methemoglobinemia.

#### Chronic:

None known for Ammonium Nitrate. None known for Urea.

### Additional Medical and Toxicological Information:

Dried salt may aggravate preexisting dermatitis and lung conditions.

## Urea - Ammonium Nitrate Solution: Emergency First Aid Procedures

- Eye contact:** 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 Contact:** 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.
- Inhalation:** Remove to fresh air. If breathing has stopped, apply artificial respiration. Keep warm and at rest. Get immediate medical attention.
- Ingestion:** Do not induce vomiting. If vomiting occurs, keep head below hips to help prevent aspiration. Get immediate medical attention. Treat for methemoglobinemia.

## Urea - Ammonium Nitrate Solution: Suggested Protection

- 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.
- Skin Protection:** 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.
- Inhalation:** 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<sup>3</sup>, dust)
- Ventilation:** Provide adequate general and local exhaust ventilation to attain occupational exposure limits, particularly in a confined space area.

## Urea - Ammonium Nitrate Solution: Spill or Leak

- Spill Procedures:** Remove sources of heat or ignition. Clean-up spill but do not flush to surface water. Contaminated soil can be spread as if it were fertilizer.

## Urea - Ammonium Nitrate Solution: Waste Disposal

- Procedure:** Dispose of through a licensed waste disposal company. Follow federal, state and local regulations.

## Urea - Ammonium Nitrate Solution: Special Precautions

**Storage Precautions:** Store 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 poisonous gas and cause injury or death.

**Comment:** Never heat a dried UAN solution, especially when confined.  
 Never combine with Nitric Acid.

## Urea-Ammonium Nitrate Solution: SARA Title III Information

### EPCRA Section 311/312 Hazard Categorization:

| Acute | Chronic | Fire | Pressure | Reactive |
|-------|---------|------|----------|----------|
| X     |         |      |          |          |

### EPCRA & CAA Hazardous Substances:

| Ingredient                  | CAS No.   | % / wt.   | CAA 112(r) | 302 TPQ lb. | 304 RQ lb. | 313 TRI |
|-----------------------------|-----------|-----------|------------|-------------|------------|---------|
| Ammonium Nitrate (Solution) | 6484-52-2 | 24 – 46 % |            |             |            | X       |

**Key:** CAA 112(r) = Toxic Substance with potential for airborne release  
 Sec. 302 TPQ = Extremely Hazardous Substances (EHS) Threshold Planning Quantity  
 Sec. 304 RQ = EHS and CERCLA Reportable Quantity if spilled  
 Sec. 313 TRI = Toxic Chemicals to be reported on Toxic Release Inventory if spilled

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