



**SAFETY DATA SHEET
UAN Solution (28-32%)**

Section 1. IDENTIFICATION

Product Name: Urea Ammonium Nitrate (UAN) Solution (28-32 % wt nitrogen)

Recommended use: Fertilizer

Restrictions on use: Use only as directed

Manufacturer: Iowa Fertilizer Company, LLC
3550 180th St.
Wever, IA 52658
319-376-4500
319-376-4700 (24 hour)

Emergency phone number: 800-424-9300 (Chemtrec)

Section 2. HAZARD(S) IDENTIFICATION

Classification:

Physical	Health	Environmental
Not Hazardous	Eye Irritation Category 2A	Not Hazardous

Label Elements:



Warning!

Causes serious eye irritation.

Wash thoroughly after handling.

Wear eye protection.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

If eye irritation persists: Get medical attention.

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Concentration
Ammonium Nitrate	6484-52-2	36-48 % wt
Urea	57-13-6	29-38 % wt
Water	7732-18-5	Balance
Free Ammonia	7664-41-7	100-500 ppm
Corrosion inhibitor	Proprietary	90-140 ppm

Section 4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If irritation occurs or breathing is difficult, get medical attention.

Skin contact: Wash with soap and water. If irritation develops and persists, get medical attention.

Eye contact: Flush eyes with water for several minutes while lifting the upper and lower lids. Get medical attention if irritation develops or persists.

Ingestion: Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to a person who is unconscious or convulsing. Get medical attention.

Most important symptoms/effects, acute and delayed: Causes eyes irritation. Prolonged skin contact irritation with redness and itching. Inhalation of mists may cause upper respiratory tract irritation. Swallowing large amounts may cause gastric upset.

Indication of immediate medical attention and special treatment, if necessary: Immediate medical attention is not required under normal use conditions.

Section 5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media: Use media appropriate for the surrounding fire.

Specific hazards arising from the chemical: When water evaporates from this product residues may contain ammonium nitrate. Solid ammonium nitrate when sensitized during decomposition may become unstable and explosive. Once the water has evaporated, decomposition of dried material may produce oxides of carbon and nitrogen, ammonium cyanate and ammonia.

Special protective equipment and precautions for fire-fighters: Firefighters should wear full emergency equipment and NIOSH approved positive pressure self-contained breathing apparatus. Cool fire exposure containers with water.

Section 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Avoid inhalation of vapors and spray mist and contact with skin and eyes. Wear appropriate protective clothing and equipment, see section 8 of the SDS for further information.

Environmental hazards: Report spill as required by local, state, and federal regulations.

Methods and materials for containment and cleaning up: Collect spilled material with inert material and place into a closable, labeled container for disposal. Wash spill area with water.

Section 7. HANDLING AND STORAGE

Precautions for safe handling: Avoid eye contact and prolonged skin contact. Avoid breathing mists or spray. Use with adequate ventilation. Wash thoroughly after handling.

Avoid welding on pipes or tanks which have contained UAN solution until they have been thoroughly flushed with water. Residual ammonium nitrate may explode under conditions of confinement and high temperatures.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed. Store in a cool, dry, well-ventilated area. Protect storage container from physical damage.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure guidelines:

Ammonium Nitrate	None Established
Urea	10 mg/m ³ TWA AIHA WEEL
Water	None Established
Ammonia	50 ppm TWA OSHA PEL 25 ppm TWA, 35 ppm STEL ACGIH TLV
Corrosion inhibitor	None Established

Appropriate engineering controls: If use generates mists, use general ventilation or local exhaust as required to maintain exposures below the occupational exposure limits.

Individual protection measures, such as personal protective equipment:

Respiratory protection: In operations where the occupational exposure limits exceeded, an approved respirator with dust/mist cartridges or supplied air respirator should be used. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable regulations and good Industrial Hygiene practice.

Skin protection: Rubber gloves are recommended for prolonged skin contact.

Eye/Face protection: Chemical safety goggles should be worn if contact is possible.

Other: Appropriate protective clothing as needed to minimize skin contact. Suitable washing facilities should be available in the work area.



Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Colorless liquid.

Odor: Little or no detectable ammonia odor.

Odor threshold: None	pH: 6.5-7.8
Melting point/freezing point: 0°F (-18°C) for 28%N; 16°F (-9°C) for 30%N; 32°F (0°C) for 32%N (salt out temperature)	Boiling point: >212°F (>100°C)
Flash point: None	Evaporation rate: Not available
Flammability (solid, gas): Not applicable	
Flammable limits: LEL: Not applicable	UEL: Not applicable
Vapor pressure: 0.11 - 0.06 (28%, 32% respectively) @60°F (15.6°C) due to water component	Vapor Density (air =1): Not available
Relative density: 1.281 (28%N); 1.304 (30%N); 1.330 (32%N) @60°F (16°C)	Solubility in Water: Miscible
Partition coefficient: n-octanol/water: Urea: -1.59, Ammonium Nitrate: -3.1	Auto-ignition temperature: Not applicable
Decomposition temperature: >554°F (>290°C)	Viscosity: 3.6 cP (28%N); 6.1 cP (32%N) @40°F (4.4°C)

Section 10. STABILITY AND REACTIVITY

Reactivity: Not expected to be reactive.

Chemical stability: Stable.

Possibility of hazardous reactions: None known.

Conditions to avoid: Urea nitrate may be formed in contact with nitric acid. Urea nitrate has excellent explosive properties and is also friction and mechanical shock sensitive.

Incompatible materials: Avoid reducing agents, strong oxidizing agents, strong acids, strong alkalis, metal powders, combustible materials, chromates, zinc, copper and copper alloys and chlorates.

Hazardous decomposition products: Thermal decomposition may produce oxides of carbon and nitrogen and ammonia.

Section 11. TOXICOLOGICAL INFORMATION

Inhalation: High concentrations of mists may cause nose, throat, and upper respiratory tract irritation.

Ingestion: Swallowing large amounts may cause gastrointestinal irritating and nausea.

Skin contact: Prolonged skin contact may cause irritation with redness and itching.

Eye contact: Causes eye irritation with redness, tearing, and pain.

Chronic effects: None known.

Reproductive Toxicity: None of the components have been shown to cause reproductive or developmental toxicity.

Mutagenicity: None of the components have been shown to cause mutagenic activity.

Carcinogenicity: None of the ingredients are listed as a carcinogen by IARC, NTP or OSHA.

Acute Toxicity Values:

Ammonium Nitrate: Oral rat LD50 2950 mg/kg, Dermal rat LD50 >5000 mg/kg
Urea: Oral rat LD50 8471 mg/kg

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity:

Ammonium Nitrate: 48 hr LD50 Cyprinus carpio 447 mg/L, 48 hr EC50 daphnia magna 490 mg/L,
Urea: 96 hr LC50 Leuciscus idus >6810 mg/L, 24 hr EC50 daphnia magna >10000 mg/L

Persistence and degradability: Urea is rapidly hydrolyzed to ammonia and carbon dioxide in environmental systems. Ammonium nitrate will be taken up by bacteria.

Bioaccumulative potential: The potential for bioconcentration in aquatic organisms is expected to be low.

Mobility in soil: Urea is highly mobile in soil. Ammonium nitrate will spread on the surface and penetrate into soil at a rate dependent on the soil type and water content.

Other adverse effects: None known.

Section 13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all local, state, and federal regulations.

Section 14. TRANSPORT INFORMATION

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
DOT	None	Not Regulated			
TDG	None	Not Regulated			
IMDG	None	Not Regulated			
IATA	None	Not Regulated			

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable – product is transported only in packaged form.

Special precautions: None known.

Section 15. REGULATORY INFORMATION

Safety, health, and environmental regulations specific for the product in question.

CERCLA: This product is not subject to CERCLA reporting requirements, however, many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA Hazard Category (311/312): Acute Health.

SARA 313: This product contains the following Chemical Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372).

Nitrate Compounds (Ammonium Nitrate)	6484-52-2	36-48%
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EPA TSCA Inventory: All of the components of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

Canadian CEPA: All of the ingredients are listed on the Canadian Domestic Substances List.

Section 16. OTHER INFORMATION

NFPA Rating: Health = 2

Flammability = 0

Instability = 0

HMIS Rating: Health = 2

Flammability = 0

Physical Hazard = 0

SDS Revision History: Section 2 Classification; Section 5 Specific hazards arising from the chemical; Section 7 Precautions for safe handling; Section 8 PPE pictograms; Section 9 Odor, Melting Point, Vapor pressure, Relative density, Partition coefficient: n-octanol/water, pH, Solubility in Water, Viscosity; Section 10 Incompatible materials, Hazardous decomposition products

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