

Material Safety Data Sheet

Ouachita Fertilizer Company, LLC

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Monroe, Louisiana 71211

318-388-0400

Product Name:

Uan (Nitrogen Fertilizer Solution)

Emergencies (800) 424-9300 (CHEMTREC)
Health Emergencies, Contact Your Local Poison Center

Urea Ammonium CO(NH₂)₂ Nitrogen Fertilizer
Common Name: Nitrate Solution Formula: NH₄NO₃ Synonym: Solution

Section II . Composition/Information On Ingredients

CHEMICAL NAME(S)	CAS No.	Exposure Limits						% by Weight
		OSHA PEL	TLV .TWA	STEL CEIL				
		mg/rn ³	ppm mg/rn ³	ppm mg/rn ³	ppm mg/rn ³	ppm mg/rn ³	ppm	
Total Nitrogen	Uan						27.8-32.2	
Ammonium Nitrate	6484-52-2						37.1-47.3	
Urea 57-1	3-6						29.0-36.8	
Water							20.1 -30.0	

None Established by OSHA. No TLV (Threshold Limit Value) established by ACGIH for Urea Ammonium Nitrate Solution.

Section III . Hazard Identification

Potential Acute May cause irritation

Health Effects:

Eyes and Skin: Eyes: Liquid contact may irritate slightly. If mist is formed, mild irritation may result. Skin: Prolonged or repeated liquid contact may irritate slightly.

Inhalation: in the unlikely event that mist is formed, this would irritate respiratory tract.

Ingestion: Ingestion may cause blood disorders (Methemoglobinemia) in infants. (This means loss of efficiency in the red blood cells and is evidenced by blue skin.) Apart from this, symptoms may include excessive action of the kidneys

Potential Chronic

Health Effects: See ingestion by infants, above

Carcinogenicity Lists: IARC Monograph: No NTP: No OSHA: No

Section IV . First Aid Measures

Eyes: Immediately flush with water, continuing for at least 15 minutes. If irritation persists, get prompt medical attention.

Skin: Immediately flush thoroughly with water. If irritation persists, get prompt medical attention.

Ingestion: If conscious, immediately give two (2) to four (4) glasses of water, and induce vomiting by touching finger to back of throat, get prompt medical attention.

Inhalation: Remove to fresh air.

Section V . Fire Fighting Measures

Flash Point: None Autoignition Temperature: Not Applicable

Lower Explosive Limit: Not Applicable Upper Explosive Limit: Not Applicable

Unusual Fire and See problem with heating in pipes and other confined spaces, Section VII, Handling.

Explosion Hazards:

Extinguishing Media: Water

Special Firefighting

Procedures and Wear self-contained breathing apparatus approved by NIOSH. Use Water spray to keep containers cool.

Equipment:

Section VI Accidental Release Measures

Small Spill: Contain and mop up or pump spilled material into metal or plastic drums as soon as possible. Material is a fertilizer.

Large Spill: Contain and mop up or pump spilled material into metal or plastic drums as soon as possible.

Release Notes: If spill could potentially enter any waterway, including intermittent dry creeks, contact the local authorities. If in the U.S., contact the US COAST GUARD NATIONAL RESPONSE CENTER toll free number 800-424-8802. In case of accident or road spill notify: CHEMTREC IN USA at 800-424-9300

Comments: See Section XIII for disposal information and Section XV for regulatory requirements. Large and small spills may have a broad definition depending on the user's handling system. Therefore, the spill category must be defined at the point of release by technically qualified personnel.

Section VII Handling and Storage

Ventilation: Unless heated, sprayed or agitated to produce mist, natural ventilation should be adequate.

Handling: Avoid breathing mist. Minimize contact with eyes, skin and clothing. Do not evaporate in enclosed spaces. Avoid *welding on pipes or tanks which have contained Uan solution until they have been thoroughly washed out with water*. Residual Ammonium Nitrate may explode under conditions of confinement and high temperature. Avoid containers, piping, or fittings made of brass, bronze, or other copper containing alloys or galvanized metals. Do not run pumps with the discharge or suction valves closed; pump must be on circulation. If material is evaporated to dryness, special hazards are involved and special fire fighting precautions and methods are recommended.

Storage: Keep away from heat.

Section VIII Exposure Controls/Personal Protection

Engineering Controls: Unless heated, sprayed or agitated to produce mist, natural ventilation should be adequate.

PERSONAL PROTECTION:

Eye Protection: Wear chemical safety goggles. Do not wear contact lenses.

Protective Clothing: Wear rubber gloves and protective clothing if there is prolonged or repeated contact with liquid.

Respiratory Protection: Respirators are not required for normal ventilation. If a misty condition prevails due to heat spraying or agitation, a mist respirator approved by NIOSH should be worn. If heated to decomposition or in fire situation, utilize a self-contained breathing apparatus.

Other Protective Clothing or Equipment: Respirators are not required for normal ventilation. If misty condition prevails due to heat, spraying or agitation, a mist respirator approved by NIOSH should be worn.

Section IX Physical and Chemical Properties

Appearance/Color/Odor: This material at normal conditions is a clear or golden liquid, slight ammonia odor.

Melting Point Range:	Type	(°F)	(°C)	Boiling Point:	242.5°F for 60% Solution
	Uan 32	29	-2	Boiling Point Range:	Not Available
	Uan 30	15	9	Vapor Pressure(mmHg):	Not Applicable
	Uan 28	1	-17		

Solubility in Water: 100%

Specific Gravity:	Uan 32	1.326	Molecular Weight	Ammonium Nitrate	80.06
	Uan 30	1.303		Urea	60.07
	Uan28	1.280	%Volatiles	Not Applicable	
Vapor Density:	Not Applicable			Evaporation Rate	Not Applicable
Bulk Density:	Uan 32	11.04 lbs/gal			
	Uan 30	10.85 lbs/gal			
	Uan 28	10.66 lbs/gal			
pH:	Typically 6.3 - 7.2				
Viscosity:	Uan 32	5.5 Centipoise			
	Uan 28	3.4 Centipoise			

Section X. Stability and Reactivity**Stability:** This product is stable under normal ambient conditions of temperature and pressure.**Hazardous Polymerization:** Will not occur**Conditions to Avoid:** Avoid welding on pipes or tanks which have contained Uran® solution until they have been thoroughly washed out with water. Avoid containers, piping, or fittings made of brass, bronze, or other copper containing alloys or galvanized metals.**Materials to Avoid (Incompatibilities):** Strong oxidants, (e.g. Chlorine, Hypochlorites). Easily oxidizable materials, including most organics. Water-reactive materials, such as Oleum.**Hazardous****Decomposition Products:** Thermal decomposition, particularly of the residue from evaporation, would yield Ammonia, Hydrogen Sulfide, Oxides of Nitrogen.**Section XI. Toxicological Information****Significant Routes****of Exposure:** Eyes, Digestive System, Respiratory System, Skin**Toxicity to Animals:** Oral, OECD Guideline 425 (rat): LD₅₀ = >2000 mg/kg. Found non-lethal to rats at 20.2 Mg/L in one-hour exposure.

Uan Solution is a blend of Urea, Ammonium Nitrate and water. Following is the individual toxicity information for Ammonium Nitrate and Urea:

Ammonium Nitrate:Acute Oral Toxicity: (rat): LD₅₀ = 2,800 —4,500 mg/kg bw. Acute Inhalation Toxicity: 4-h: (rat): LC₅₀ > 88.8 mg/L. Acute Toxicity: Other Routes: Minimum lethal dose (rat) 0.065mg NH₄NO₃-N. Acute Dermal Toxicity: (Sprague Dawley rat, albino): LD₅₀ > 5,000 mg/kg. Repeated Dose Toxicity: Inhalation: 2 weeks: NOAEL (rat) 185 mg/rn³. Inhalation: 4 weeks: NOAEL = 1 mg/rn³ Eye Irritation/Corrosion: No data available. Skin Irritation/Corrosion: 48 hr (rabbit): Moderately irritating**Urea:**Acute Oral Toxicity: (rat): LD₅₀ = 14,300—15,000 mg/kg; (mouse) 11,500 – 13,000 mg/kg; LD50(cattle): 510 mg/kg. Repeated Dose: (rat) 12 —month carcinogenicity screening – NOAEL = 2250 mg/kg. Skin Irritation/Corrosion: Mouse – Not irritating (10% solution) Eye Irritation/Corrosion: Rabbit – Not irritating (50% solution)

Not found to be toxic by oral exposure as defined by OSHA. Based on toxicity data for another compound (i.e., ammonium nitrate), not expected to be toxic by dermal and Inhalation exposure as defined by OSHA

Special Remarks on Ammonium Nitrate:**Toxicity to Animals:** Developmental Toxicity/Teratogenicity: Not teratogenic to rats at 57 mg/kg bw (NOAEL > 57 mg/kg/day).**Bacterial Genetic Toxicity In-vitro:** (*Salmonella typhimurium*): Bacterial reverse mutation assay: Negative**Urea:****Bacterial Genetic Toxicity in vitro:** (*Salmonella typhimurium*) – Bacterial reverse mutation assay- Negative; Chinese Hamster – Chromosomal aberration test – Positive (very high dose); Mouse – Positive (very high dose). Genetic**Toxicity In vivo: Mouse** – Bone marrow cytogenetic test – Positive (extremely high dose) : Toxicity to **Reproduction:** No toxic effects on mouse gonads up to 6,750-mg/kg day. No toxic effects on rat gonads up to 2,250-mg/kg day. Developmental Toxicity / Teratogenicity. Not teratogenic.**Other Effects on Humans.** Symptoms may include excessive action of the kidneys and perhaps bowels**Ammonium Nitrate:** No other effects known.**Urea:**

Despite extensive medical use, no significant side effects on humans have been noted.

Special Remarks on**Chronic Effects on****Humans:** Ingestion may cause blood disorders (Methemoglobinemia) in infants. (This means loss of efficiency in the red blood cells and is evidenced by blue skin).**Ammonium Nitrate:**

Large amounts, 15 to 25 grams, may have serious or even fatal effects. Small repeated doses may lead to weakness, general depression, headache and mental impairment. Symptoms of over exposure, acute cyanosis, nausea, vertigo, collapse, vomiting/abdominal pain, and tachycardia (rapid heartbeat), coma, convulsion and death can occur.

Urea:

No other effects known.

Special Remarks on Ammonium Nitrate:**Other Effects on** Nitrate formation in intestine may cause methemoglobinemia.**Humans:****Urea:**

May be irritating at > 10% concentration; not a skin sensitizer.

Section XII Ecological Information

Ecotoxicity: Aquatic toxicity considerations indicate Uan⁵ solution is of a low order of toxicity to the species tested. Since Uan solution is a fertilizer, it may promote eutrophication in waterways.

Ammonium Nitrate:

Acute Toxicity to Fish (*Cyprinus carpio* L): 48-h: LC₅₀ 1.15—1.72 mg NH₃L; (Chinook Salmon, rainbow trout, bluegill) 96-h: LC₅₀= 420 – 1360 mg NO₃/L Chronic Toxicity to Fish: No data available. Acute Toxicity to Aquatic Invertebrates: (*Daphnia magna*) EC₅₀ = 555 mg/L. Chronic Toxicity to Aquatic invertebrates: (*Bullia digitalis*) Up to 7 days: NOEC = 300 mg/L.

Urea:

Acute Toxicity to Fish: 96-h LC₅₀ > 9,100 mg/L. Acute Toxicity to Daphnia Aquatic invertebrates: (*Daphnia magna*) 24 . h EC50: > 10,000 mg/L. Toxicity to Aquatic Plants: (*Scenedesmus quadricauda*) 192 hr cell multiplication inhibition test – Ti> 10,000 mg/L. Toxicity to Other Non-Mammalian Terrestrial Species: (Pigeon) – Subcutaneous – LOLO = 16,000 mg/kg.

Non-toxic to aquatic organisms as defined by USEPA.

Environmental Fate: Ammonium Nitrate:

Stability in water: Stable to hydrolytic degradation. **Stability in Soil:** Ammonium ions bind to clay particles and leach slowly or not at all to ground water, whereas the nitrate can leach significantly. **Monitoring Data:** NH₄ background: 0.01- 10mg NIL. NO₃ background: 0.3- 100mg N/L. Transport: Worldwide loss after application 0.004 . 1.2 Tglyr.

Distribution: 0.251% to air; 45.4% to water; 54.2% to soil; 0.0757% to sediment

Urea:

Stability in water: T₁₁₂> 1 year. Transport: 0.16% in air; 99.84% in water

Toxicity: No known toxicity.

Degradation No degradation products known

Products:

Section XIII Disposal Considerations

Product Disposal: Disposal of Uan fertilizer may be subject to federal, state and local laws and regulations.

General Comments: Users of this product should review their operations in terms of applicable federal, state and local laws and regulations, then consult with appropriate regulatory agencies before discharging or disposing of waste material.

Section XIV Transportation Information

	USDOT	
Proper Shipping Name:	Not Regulated	
Hazard Class:		
identification Number:		
Packing Group (Technical Name):		
Labeling / Placarding:		
Authorized Packaging:		

Notes Uan (Nitrogen Fertilizer Solution) is classified by the USCG as an NLS under 33 CFR 154 per reference 46

CFR 153 (and Marpol)

Section XV Regulatory Information

UNITED STATES:

SARA Hazard Category: This product has been reviewed according to the EPA Hazard Categories promulgated under Section 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories

Pressure Generating: No **Reactivity:** No **Acute:** Yes **Chronic:** No
Fire: No
40 CFR Part 355-Extremely Hazardous Substances: None
40 CFR Part 370 Hazardous Chemical Reporting: Applicable
All intentional ingredients listed on the TSCA inventory.

SARA Title III Information: This product contains the following substances subject to the reporting requirements of Title III (EPCRA) of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372

Chemical	CAS No.	Percent by Weight	CERCLA RQ (lbs)	SARA (1986) Reporting		
				311	312	313
Uan	---	-	See Note(1)	Yes	Yes	See Note (2)
Aqueous Ammonia	1336-21-6	7.87- 10.1	NA	NA	NA	Yes
Nitrate Compounds	N/A	28.7 -36.8	NA	NA	NA	Yes

NOTE:(1) There is no RQ reporting requirement for UAN but local and state requirements may apply. Check local and state Laws. Uan solutions contain alkalinity as ammonia as high as .05% by weight (as ammonia). Any spill that exceeds 1,000,000 lbs. May exceed the 1000 lb. RQ for Ammonium Hydroxide. (2) UAN contains ammonium nitrate which is a source of aqueous ammonia and water dissociable nitrate.

CERCLA / Superfund 40 CFR Parts 117, 302: If this product contains components subject to substances designated as CERCLA Repertable Quantity (RA) Substances, it will be designated in the above table with the RQ value in pounds. If there is a release of RQ substances to the environment, notification to the National Response Center, Washington, D.C. (1-800-424-8802) is required

EINECS# (Ammonium Nitrate) 229-347-8

(Urea) 200-315-5

California: Prop 65: This is not a chemical known to cause cancer, nor is it listed.

Section XVI Other Information

NFPA Hazard Ratings: **Health:** 1 **Fire:** 0 **Reactivity:** 3 **Special Hazards:** OX

0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 Extreme

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