

MATERIAL NAME: UREA AMMONIUM NITRATE (UAN) 28% AND 32%	COFFEYVILLE RESOURCES NITROGEN FERTILIZERS	SDS #: 240-002
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SAFETY DATA SHEET

SECTION 1 ◆ IDENTIFICATION

Coffeyville Resources Nitrogen Fertilizers P.O. Box 5000 Coffeyville, Kansas 67337	FOR EMERGENCY SOURCE INFORMATION CONTACT: ➤ SDS Assistance: (620) 251-4000 ➤ Information (620) 252-4265 ➤ CHEMTREC: (800) 424-9200 (24 hour contact)
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GHS PRODUCT IDENTIFIER: Urea Ammonium Nitrate (UAN) 28% and 32%	CHEMICAL FAMILY: Inorganic and Organic Nitrogen Compound	PRODUCT USES: Used primarily as fertilizer
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SECTION 2 * HAZARDS IDENTIFICATION

GHS CLASSIFICATIONS

Serious eye damage/eye irritation - Category 2A

GHS LABEL ELEMENTS

Urea Ammonium Nitrate (28 and 32%)

GHS PICTOGRAM	SIGNAL WORD
	Warning

HAZARD STATEMENTS

Causes serious eye irritation

PRECAUTIONARY STATEMENTS

Prevention

Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

Response

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.	If eye irritation persists: Get medical advice/attention.
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Storage

Keep container tightly closed and store away from incompatible materials.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

SUPPLIER INFORMATION

Coffeyville Resources Nitrogen Fertilizers	P.O. Box 5000	Coffeyville, Kansas 67337
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SECTION 3 ▼ COMPOSITION/INFORMATION OF INGREDIENTS

INGREDIENT	CAS NUMBER	PERCENTAGE (%)
Ammonium Nitrate	6484-52-2	37.9-47.6
Urea	57-13-6	28.7-36.1

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NITRATE (UAN) 28% AND 32%**



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SECTION 4 + FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids, Get medical aid.

SKIN: If material comes in contact with the skin, promptly wash the contaminated skin with water. If material penetrates the clothing, promptly remove the clothing and wash the skin with water. If irritation persists after washing, get medical attention.

INGESTION: Rinse mouth with water and afterwards drink plenty of water. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention.

INHALATION: If a person breathes in large amounts of this material, move the exposed person to fresh air at once. Other measures are usually unnecessary. If not breathing, give cardiopulmonary resuscitation

NOTE TO PHYSICIAN: TREAT SYMPTOMATICALLY AND SUPPORTIVELY

SECTION 5 % FIRE-FIGHTING MEASURES

Slight fire hazard. When water evaporates from this product residues may contain ammonium nitrate. Solid ammonium nitrate when sensitized during decomposition may become unstable and explosive.

SUITABLE EXTINGUISHING MEDIA: Use fire extinguishing media appropriate for surrounding materials.

HAZARDOUS REACTIONS/DECOMPOSITION: Material will not burn, but thermal decomposition may result in flammable/toxic gases being formed after material evaporates to dryness. These products include nitrogen oxides, ammonia, ammonium cyanate and carbon monoxide.

SPECIAL PROTECTIVE ACTIONS FOR FIREFIGHTERS: For fires involving this material, do not enter any enclosed or confined space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of combustion products and oxygen deficiencies. If firefighters cannot work upwind of the fire, respiratory protective equipment must be worn. Cool tanks and containers exposed to fire with water. Notify appropriate authorities if liquid enters sewer/waterways.

SEE SECTION 9 FOR FLAMMABILITY PROPERTIES

SECTION 6 ❖ ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	Ensure adequate ventilation. Stop leak if you can do so without risk. Use personal protective equipment as necessary as recommended in section 8 of the SDS.
METHODS FOR CONTAINMENT AND METHODS FOR CLEANING UP	Collect or recover any reusable product and prevent entry into waterways, drains and sewers. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Dike far ahead of liquid spill for later use or disposal.
OTHER INFORMATION	None

SECTION 7 % HANDLING AND STORAGE

Prior to working with this product workers should be trained on its proper handling and storage.

PRECAUTIONS FOR SAFETY HANDLING	<ul style="list-style-type: none"> ➤ Avoid contact with skin and eyes. ➤ Keep away from heat, sparks, and open flame!
STORAGE PROCEDURES	<ul style="list-style-type: none"> ➤ Store 28% UAN at temperatures above 1 °F. ➤ Store 32% UAN at temperatures above 35 °F. ➤ Keep container tightly closed and in a well-ventilated place. Store away from incompatible materials. ➤ Keep this material away from food, drink and animal feed.
INCOMPATIBILITIES	<ul style="list-style-type: none"> ➤ Incompatible with strong reducing agents or other oxidizer. Possible incompatibility with finely powdered metals (cadmium, copper, lead, cobalt, nickel, bismuth, chromium, magnesium, zinc, sodium, potassium and aluminum). ➤ May explode by detonation, heat or shock when evaporated to near dryness. ➤ Solution may detonate if subjected to heat and pressure.

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SECTION 8 ☩ EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	ACGIH TLV (2013)	OSHA PEL	NIOSH IDLH
Ammonium Nitrate	TWA: Not Applicable STEL: Not Applicable	TWA: Not Applicable STEL: Not Applicable	Not Applicable
Urea	TWA: Not Applicable STEL: Not Applicable	TWA: Not Applicable STEL: Not Applicable	Not Applicable

ENGINEERING CONTROLS: Use adequate ventilation, as needed.

PERSONAL PROTECTIVE EQUIPMENT

- **EYES:** ANSI Z87.1 approved eye protection should be worn whenever there is a likelihood of any type of exposure. Suitable eyewash station should be available. Contact lenses must not be worn.
- **SKIN/BODY:** Chemical protective clothing may be recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for specific information.
- **HAND PROTECTION:** Gloves constructed of PVC, nitrile or equivalent is recommended. Consult manufacturer specifications for specific information.
- **RESPIRATORY PROTECTION:** Generally not required.
- **OTHER HYGIENIC AND WORK PRACTICES:** Safety shower and eyewash or equivalent should be available for emergency use. Use good personal hygiene practices. In case of skin contact, wash with mild soap and water or a waterless hand cleaner. Immediately remove soaked clothing and wash thoroughly before reuse.

SECTION 9 ⚡ PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT (760 MM HG): ~236 °F/ ~113 °C	PERCENT VOLATILE BY VOLUME: Not applicable
SPECIFIC GRAVITY (H₂O = 1): 28%=1.28 32%=1.33	VISCOSITY UNITS, TEMP: Not Applicable
EVAPORATION RATE (BuAc = 1): Not applicable	VAPOR DENSITY (AIR =1): Not Applicable
VAPOR PRESSURE AT 100 °F: 24-39 mm Hg	SOLUBILITY IN WATER: Soluble
APPEARANCE AND ODOR: Clear liquid material, slight ammonia (pungent) odor.	
FLASH POINT: (Method Used) Not Applicable	FLAMMABLE LIMITS: LEL: Not Applicable UEL: Not Applicable
AUTOIGNITION TEMPERATURE: Not Applicable	VOC CONTENT: Not Applicable

SECTION 10 ⚡ STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal temperatures and pressures
HAZARDOUS REACTION POTENTIAL: Will not occur
CONDITIONS TO AVOID: Contact with incompatible materials. Heat, sparks, flames, elevated temperatures. UAN will form urea nitrate when mixed with nitric acid at low pH. Urea nitrate may become unstable and/or explosive under certain conditions.
INCOMPATIBLE PRODUCTS: Incompatible with strong reducing agents or other oxidizers. Possible incompatibility with finely powdered metals (cadmium, copper, lead, cobalt, nickel, bismuth, chromium, magnesium, zinc, sodium, potassium and aluminum).
MATERIALS TO AVOID: Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.
HAZARDOUS DECOMPOSITION PRODUCTS: These products include nitrogen oxides, ammonia, ammonium cyanate and carbon monoxide.
HAZARDOUS POLYMERIZATION: Has not been reported

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SECTION 11 ☼ TOXICOLOGICAL INFORMATION

UAN

UAN as a product may cause irritation to eyes, skin, nose and throat.

AMMONIUM NITRATE

Toxicity

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LD ₅₀ (oral)	Rat	2,217 mg/Kg	LC ₅₀ (inh)	Rat (15 minute)	No data available	LC ₅₀ (inh)	Rat (4 hours)	No data available
Specific organ toxicity, single exposure: No data available					Specific organ toxicity, repeated exposure: No data available			

CARCINOGENICITY

IARC	Not Listed		
NTP	Not Listed		
California (Prop 65): Not Listed	NIOSH: Not Listed	ACGIH: Not Listed	OSHA: Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: No data available	Serious eye damage: No data available
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: BR9050000	

UREA

Toxicity

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LD ₅₀ (oral)	Rat	8,471 mg/Kg	LC ₅₀ (inh)	Rat (15 minute)	No data available	LC ₅₀ (inh)	Rat (4 hours)	No data available
Specific organ toxicity, single exposure: No data available					Specific organ toxicity, repeated exposure: No data available			

CARCINOGENICITY

IARC	Not Listed		
NTP	Not Listed		
California (Prop 65): Not Listed	NIOSH: Not Listed	ACGIH: Not Listed	OSHA: Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: No data available	Serious eye damage: No data available
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: YR6250000	

SECTION 12 ☼ ECOLOGICAL INFORMATION


UAN

UAN as a product is considered to be of low toxicity to aquatic organisms as defined by the Environmental Protection Agency. It is soluble in water. Avoid spills or releases in the waterways. Not listed as a marine pollutant.

AMMONIUM NITRATE

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
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LC ₅₀	<i>Daphnia magna</i>	No data available Studies based on ammonia	LC ₅₀	Fathead Minnow	No data available Studies based on ammonia
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PERSISTENCE AND DEGRADABILITY/BIOACCUMULATIVE POTENTIAL/ MOBILITY IN SOIL

Can degrade to ammonia in the environment. Can be toxic to aquatic life and spills may cause increased biochemical oxygen demand (BOD).

UREA

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
EC ₅₀	<i>Daphnia magna</i>	3,910 mg/L (96 hours)	LC ₅₀	Fathead Minnow	100 - 500 mg/L (96 hours)

PERSISTENCE AND DEGRADABILITY/BIOACCUMULATIVE POTENTIAL/ MOBILITY IN SOIL

In soil, urea degrades rapidly, usually within 24 hours. May degrade to ammonia.

SECTION 13 * DISPOSAL CONSIDERATIONS

Dispose of in accordance with local regulations.

Waste Disposal Method: Should not be released into the environment.

Contaminated Packaging: Dispose of in accordance with local regulations.

SECTION 14 ☐ TRANSPORTATION INFORMATION

Not Meant To Be All Inclusive - Check Local, State, And Federal Laws And Regulations

Element	U.S. DOT	IMDG	IATA
UN Number	Not Regulated	Not Regulated	Not Regulated
UN Proper Shipping Name			
Hazard Class			
Placard/Label			
Environmental Hazard			
Packing Group			

SECTION 15) REGULATORY INFORMATION

Agency	Listing
	Guidance only, consult specific regulations
OSHA	Not Listed
40 CFR Part 355 (EPCRA)	Not Listed
40 CFR Part 302 (CERCLA)	Not Listed
40 CFR Part 370 (Hazardous Chemical Reporting: Community Right to Know SARA 304/311/312: Extremely hazardous substance	Listed
40 CFR Part 372 (Toxic Chemical Release Reporting: Community Right to Know) SARA 313	Listed
TSCA Inventory	Listed
EPA Form R Toxic Chemical Release Inventory	A nitrate compound is covered by TRI regulations only when in water and only if dissociated.
Clean Air Act Section 112 Hazardous Air Pollutants (HAPs)	Not Listed
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Listed based on free ammonia
State Regulations: Massachusetts, California, New Jersey, and Pennsylvania	Ammonium Nitrate

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State Regulations: California

Not Listed

SECTION 16 ☒ OTHER INFORMATION



NFPA LABEL



HMIS III LABEL

Personal Protection Index
National Paint and Coatings Association recommends that PPE codes be determined by the employer, who is familiar with the actual conditions under which chemicals in the facility are used.

Acronym List

°F=degrees Fahrenheit	°C=degrees Celsius	ACGIH= American Conference of Industrial Hygienists
APR=Air Purifying Respirator	BCF= Bioconcentration Factor	BuAc=Butyl Acetate
CAS=Chemical Abstract Service	CERCLA= Comprehensive Environmental Response, Compensation, and Liability Act	
CHEMTREC= Chemical Transportation Emergency Center	CNS=Central Nervous System	CWA=Clean Water Act
DOT=Department of Transportation	EC50= Effective Concentration Fifty	EPA=Environmental Protection Agency
g/Kg=Grams per Kilogram	g/M ³ =Grams per Cubic Meter	GHS=Global Harmonization System
H ₂ O=Water	HAP=Hazardous Air Pollutants	HMIS= Hazardous Materials Identification System
IARC= International Agency for Research on Cancer	IATA= International Air Transport Association	IMDG= International Maritime Dangerous Goods
LC ₅₀ =Lethal Concentration Fifty	LD ₅₀ =Lethal Dose Fifty	LEL=Lower Explosive Limit
Log P _{ow} =Octanol/water partition coefficient	mg/Kg=Milligrams per Kilogram	mg/L=Milligrams per Liter
mL/Kg=Milliliters per Kilogram	mm HG=millimeters of mercury	NFPA=National Fire Protection Association
NIOSH= National Institute for Occupational Safety and Health	NTP=National Toxicology Program	OSHA=Occupational Safety and Health Administration
PEL=Permissible Exposure Limit	ppm=Parts per Million	RCRA=Resource Conservation and Recovery Act
RQ=Reportable Quantities	RTECS=Registry of Toxic Effects of Chemical Substances	SARA= Superfund Amendments and Reauthorization Act
SDS=Safety Data Sheet	STEL=Short Term Exposure Limit	
TLV=Threshold Limit Value	TPQ=Threshold Planning Quantity	TSCA=Toxic Substance and Control Act
TWA=Time Weighted Average	UEL=Upper Explosive Limit	VOC=Volatile Organic Compounds

SDS REVISIONS: Reformatted to meet GHS Requirements

SDS CREATION DATE: 11/01/13

REVISION #0: 11/11/13

DISCLAIMER

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SDS DEVELOPER: Cass Willard
Cass Willard, CIH

DATE: 11/01/13