

**MATERIAL NAME: UREA AMMONIUM
NITRATE (UAN) 28% AND 32%**



SDS #: 240-002

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)

GHS PRODUCT IDENTIFIER: Urea Ammonium Nitrate (UAN) 28% and 32%

CHEMICAL FAMILY: Inorganic and Organic Nitrogen Compound

PRODUCT USES: Used primarily as fertilizer

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.

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

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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|---|---|-----------------------|

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

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| 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 |
|------------------|----------------------|---|------------------|----------------|---|

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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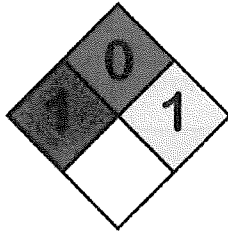


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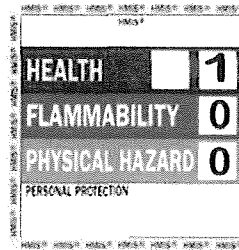
State Regulations: California

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

The information in this SDS was obtained from sources which we believe are reliable. **HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED, REGARDING ITS ACCURACY.** Some conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. **FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.** All product measurements such as flash point, etc. are considered approximate values. All data provided by Coffeyville Resources Nitrogen Fertilizers. This SDS was prepared and is to be used only for this product.

SDS DEVELOPER: Cass Willard
Cass Willard, CIH

DATE: 11/01/13