

# Liquid Fertilizer

## Safety Data Sheet

According to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012 and the Hazardous Products Regulations (HPR) WHMIS 2015

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### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
 Product name : UAN 32-0-0 UAN 29-0-0  
 UAN 30-0-0 UAN 28-0-0

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Agricultural application

#### 1.3. Details of the supplier of the safety data sheet

##### Manufacturer

MacroSource LLC  
 5 Skidaway Village Walk  
 Savannah, GA 31411 - USA  
 T 1-912-598-8392  
[www.MacroSource.com](http://www.MacroSource.com)

#### 1.4. Emergency telephone number

Emergency number : CHEMTREC 1 (800) 424-9300

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

##### GHS classification

Eye Irrit. 2A

#### 2.2. Label elements

##### GHS labelling

Hazard pictograms (GHS) :



GHS07

Signal word (GHS) : Warning  
 Hazard statements (GHS) : Causes serious eye irritation.  
 Precautionary statements (GHS) : Wash hands, forearms and face thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face 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 advice/attention.

#### 2.3. Other hazards

No additional information available

#### 2.4. Unknown acute toxicity

Not applicable

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

Name	Product identifier	%
Ammonium nitrate	(CAS-No.) 6484-52-2	38 – 45
Urea	(CAS-No.) 57-13-6	30 – 36
Water	(CAS-No.) 7732-18-5	20 – 31

Comments : This Safety Data Sheet is not a guarantee of product specification or NPK value(s). NPK content is on specified sales orders, customer invoices, or product specification sheets obtained from the supplier.  
 All concentrations are in percent weight.

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### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures

- First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact : If skin irritation occurs: wash skin with plenty of water. Obtain medical attention if irritation persists.
- First-aid measures after eye contact : 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 advice/attention.
- First-aid measures after ingestion : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

#### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/effects after inhalation : May cause irritation to the respiratory tract.
- Symptoms/effects after skin contact : May cause skin irritation. Repeated exposure may cause skin dryness or cracking.
- Symptoms/effects after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
- Symptoms/effects after ingestion : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ammonium Nitrate: Ingestion may cause methemoglobinemia. Initial manifestation of methemoglobinemia is cyanosis, characterized by navy lips, tongue and mucous membranes, with skin colour being slate grey. Further manifestation is characterized by headache, weakness, dyspnea, dizziness, stupor, respiratory distress and death due to anoxia. If ingested, nitrates may be reduced to nitrites by bacteria in the digestive tract. Signs and symptoms of nitrite poisoning include methemoglobinemia, nausea, dizziness, increased heart rate, hypotension, fainting and possibly shock.
- Chronic Symptoms : Overexposure to this material may result in methemoglobinemia.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Hot Ammonium Nitrate burns skin, allowing rapid absorption of Ammonium Nitrate through the skin and toxic effects can occur quite rapidly. Causes methemoglobinemia – emergency response should treat appropriately, such as by intravenous administration of methylene blue.

### SECTION 5: Fire-fighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Powder. Foam. Carbon dioxide (CO<sub>2</sub>).
- Unsuitable extinguishing media : Do not use water jet.

#### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : Contains substances that are oxidizers when in solid form. May cause fire or explosion if allowed to dry. Products of combustion may include, and are not limited to: oxides of carbon, acids, chlorates, nitrogen oxides, ammonia, toxic vapours.
- Explosion hazard : May be explosive in contact with flammable or organic substances and confinement during fire.
- Reactivity : Accelerates the rate of burning materials. Oxidizer if allowed to dry.

#### 5.3. Advice for firefighters

- Firefighting instructions : Move containers away from the fire area if this can be done without risk. Cool closed containers exposed to fire with water spray.
- Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

##### 6.1.1. For non-emergency personnel

No additional information available

##### 6.1.2. For emergency responders

No additional information available

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters.

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### 6.3. Methods and material for containment and cleaning up

- For containment : Stop leak if safe to do so. Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment.
- Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Provide ventilation.

### 6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Additional hazards when processed : When the water in UAN evaporates, residue may include solid ammonium nitrate and urea. When sensitized or during decomposition, solid ammonium nitrate may become unstable and/or explosive. UAN pumps operated with blocked discharge have been known to detonate. Smothering, contact with organic material, or combustible material may cause an explosive situation. Thoroughly wash out pipes, tanks, or valves before welding or burning. Residual solidified ammonium nitrate may explode under high temperatures and confinement. Heating above 140°F will promote hydrolysis. Extreme cold (< 32 °F) may cause crystallization of the product. Do not allow liquid to evaporate, as solid ammonium nitrate residue can explode.
- Precautions for safe handling : Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Ventilate confined spaces before entering.
- Hygiene measures : Wash contaminated clothing before reuse. Wash hands, forearms and face thoroughly after handling.

### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep out of the reach of children. Keep container tightly closed. Store in a dry, cool and well-ventilated area. Keep in fireproof place. Store away from direct sunlight or other heat sources. Protect containers from physical damage.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

<b>Urea (57-13-6)</b>
Not applicable
<b>Ammonium nitrate (6484-52-2)</b>
Not applicable
<b>Water (7732-18-5)</b>
Not applicable

### 8.2. Exposure controls

- Appropriate engineering controls : Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits. Provide readily accessible eye wash stations and safety showers.
- Hand protection : Wear suitable gloves.
- Eye protection : Wear eye/face protection.
- Skin and body protection : Wear suitable protective clothing.
- Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Environmental exposure controls : Avoid release to the environment.
- Other information : Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Appearance : Clear liquid
- Colour : Clear
- Odour : Mild ammonia

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Odour threshold	: No data available
pH	: 7 – 7.5
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Not flammable
Vapour pressure	: No data available
Relative vapour density at 20 °C (68 °F)	: No data available
Relative density	: No data available
Density (lb/gal)	: 11.06 (32%); 10.89 (30%), 10.81 (29%); 10.66 (28%)
Solubility	: Completely soluble.
Partition coefficient n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Accelerates the rate of burning materials. Oxidizer if allowed to dry.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Excessive heat or cold. Incompatible materials.

### 10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizers. Chlorine. Hypochlorites. Metallic powders. Combustible materials. zinc. Copper and its alloys. Chlorates.

### 10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon, acids, nitrogen oxides, ammonia, toxic vapours. When the water in UAN evaporates, residue may include solid ammonium nitrate and urea. When sensitized or during decomposition, solid ammonium nitrate may become unstable and/or explosive. UAN pumps operated with blocked discharge have been known to detonate. Smothering, contact with organic material, or combustible material may cause an explosive situation. Thoroughly wash out pipes, tanks, or valves before welding or burning. Residual solidified ammonium nitrate may explode under high temperatures and confinement. Heating above 40 °C / 140°F will promote hydrolysis. Extreme cold (< 0 °C / 32 °F) may cause crystallization of the product. Do not allow liquid to evaporate, as solid ammonium nitrate residue can explode.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified.
Acute toxicity (dermal)	: Not classified.
Acute toxicity (inhalation)	: Not classified.

Urea (57-13-6)	
LD50 oral rat	8471 mg/kg
Ammonium nitrate (6484-52-2)	
LD50 oral rat	2217 mg/kg
LC50 inhalation rat	> 88.8 mg/l/4h

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<b>Water (7732-18-5)</b>	
LD50 oral rat	> 90 ml/kg
Skin corrosion/irritation	: Not classified. pH: 7 – 7.5
Serious eye damage/irritation	: Causes serious eye irritation. pH: 7 – 7.5
Respiratory or skin sensitisation	: Not classified.
Germ cell mutagenicity	: Not classified.
Carcinogenicity	: Not classified.
Reproductive toxicity	: Not classified.
STOT-single exposure	: Not classified.
STOT-repeated exposure	: Not classified.
Aspiration hazard	: Not classified.
Symptoms/effects after inhalation	: May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	: May cause skin irritation. Repeated exposure may cause skin dryness or cracking.
Symptoms/effects after eye contact	: Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Symptoms/effects after ingestion	: May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ammonium Nitrate: Ingestion may cause methemoglobinemia. Initial manifestation of methemoglobinemia is cyanosis, characterized by navy lips, tongue and mucous membranes, with skin color being slate grey. Further manifestation is characterized by headache, weakness, dyspnea, dizziness, stupor, respiratory distress and death due to anoxia. If ingested, nitrates may be reduced to nitrites by bacteria in the digestive tract. Signs and symptoms of nitrite poisoning include methemoglobinemia, nausea, dizziness, increased heart rate, hypotension, fainting and possibly shock.
Chronic Symptoms	: Overexposure to this material may result in methemoglobinemia.
Other information	: Likely routes of exposure: ingestion, inhalation, skin and eye.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

<b>Urea (57-13-6)</b>	
LC50 fish 1	16200 – 18300 mg/l (Exposure time: 96 h - Species: Poecilia reticulata)
EC50 Daphnia 1	3910 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

### 12.2. Persistence and degradability

<b>Liquid Fertilizer</b>	
Persistence and degradability	Not established.

### 12.3. Bioaccumulative potential

<b>Liquid Fertilizer</b>	
Bioaccumulative potential	Not established.
<b>Urea (57-13-6)</b>	
BCF fish 1	< 10
Partition coefficient n-octanol/water	-1.59 (at 25 °C)
<b>Ammonium nitrate (6484-52-2)</b>	
BCF fish 1	(no bioaccumulation expected)
Partition coefficient n-octanol/water	-3.1 (at 25 °C)

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Other information : No other effects known.

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### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### SECTION 14: Transport information

#### Department of Transportation (DOT) and Transportation of Dangerous Goods (TDG)

In accordance with DOT/TDG

Not regulated

### SECTION 15: Regulatory information

#### 15.1. Federal regulations

##### Urea (57-13-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### Ammonium nitrate (6484-52-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### Water (7732-18-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

The mixture is subject to reporting under SARA Section 313:

- For aqueous ammonia compounds due to the presence of ammonium compounds: 1.0 % de minimis concentration (10% of total aqueous ammonia is reportable under this listing)
- For nitrate compounds due to the presence of ammonium nitrate

All components of this product are listed, or excluded from listing, on the Canadian DSL (Domestic Substances List) and NDSL (Non-Domestic Substances List) inventories.

#### 15.2. International regulations

No additional information available

#### 15.3. US State regulations

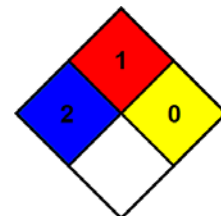
California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

### SECTION 16: Other information

Revision date : 01/09/2023  
Other information : None.  
Prepared by : Nexreg Compliance Inc.  
[www.Nexreg.com](http://www.Nexreg.com)



NFPA health hazard : 2  
NFPA fire hazard : 1  
NFPA reactivity : 0



HMIS Rating  
Health : 2 Moderate Hazard  
Flammability : 1 Slight Hazard  
Physical : 0 Minimal Hazard

SDS HazCom 2012 - WHMIS 2015 (NexReg)

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