



**Shane C. DeGross**  
Manager  
Environmental Remediation

**BNSF Railway Company**  
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November 1, 2018

Ms. Jennifer Lind  
Site Manager  
Toxics Cleanup Program  
Department of Ecology  
1250 W. Alder Street  
Union Gap, WA 98903-0009

Re: Nachurs Alpine Solutions Site  
101 N. 1st Street, Sunnyside, WA  
Facility Side ID No. 29243

Dear Ms. Lind:

BNSF Railway Company received your Early Notice Letter dated July 10, 2018, and a copy of Nachurs Alpine Solutions LLC's (Nachurs) legal counsel's letter dated August 6, 2018 addressed to your office. As you know, Nachurs is BNSF's tenant at the above Site. BNSF recently sent Nachurs a notice of default with respect to the lease agreement between BNSF and Nachurs.

As already explained by Nachurs, it leased and occupied the subject property for over 40 years. As described in the lease, Nachurs' use of the property included constructing, maintaining, and operating three fertilizer storage tanks. To ensure that Ecology has more complete information relevant to this site, we investigated Nachurs' assertion that "Nachurs does not manufacture, handle, sell or carry any nitrate-containing fertilizers at its production plant or terminals ...." Specifically, we reviewed Washington State Department of Agriculture's website for the list of fertilizers that Nachurs is registered to distribute in the State of Washington. We also reviewed the Safety Data Sheets (SDS) available on Nachurs' website.

Attached is the list we found on the Department of Agriculture's website as of August 13, 2018 (Exhibit A). A majority of fertilizers that Nachurs is registered to distribute in the State of Washington contain nitrogen. For example, Nachurs N-Rage<sup>®</sup> is advertised to contain 23% nitrogen and Nachurs SNR<sup>®</sup> is advertised to contain 28 percent nitrogen. Also attached are copies of three SDS from Nachurs website (Exhibit B). Each of these products contains an unknown amount of Urea. This information belies Nachurs' assertion that its products cannot possibly be a source of nitrogen found in the soil and groundwater at the Site. We invite Nachurs to share with Ecology SDS sheets specific to materials it stored and handled at the subject property to the extent those differ from what we have referenced here.

Please let me know if you have any questions or need additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read "Shane DeGross", with a stylized, cursive script.

Shane DeGross

cc: Brooke Kuhl, BNSF  
Craig Trueblood, K&L Gates  
Chris Kim Kahn, Frost Brown Todd, LLC – Counsel for Nachurs

## **EXHIBIT A**

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## Commercial Fertilizer

**REGISTRANT: NACHURS ALPINE SOLUTIONS CORP**

Mailing Address	421 LEADER ST.
Post Office Box	
City	MARION
State	OH
Postal Code	43302
Telephone Number	740-382-5701
Fax Number	740-383-2615

**PRODUCTS:**

WSDA Product No.	Product Name
0216-0004	<u>NACHURS K-THIO 0-0-25</u>
0216-0006	<u>NACHURS DOUBLE-OK 0-0-30</u>
0216-0013	<u>NACHURS SRN 28-0-0</u>
0216-0014	<u>NACHURS N-RAGE 23-4-2</u>
0216-0022	<u>NACHURS G22 6-22-2</u>
0216-0037	<u>NACHURS FORTIFIED FOLIAR 12-9-6</u>
0216-0038	<u>NACHURS AQUA-TECH 2-0-20</u>
0216-0039	<u>NACHURS RHYZO-LINK 0-0-15</u>
0216-0040	<u>NACHURS AQUA-TECH 7-20-4</u>
0216-0041	<u>NACHURS CORN GROW</u>
0216-0042	<u>NACHURS 0-0-29</u>
0216-0043	<u>NACHURS 9-18-9 WITH SULFUR</u>
0216-0044	<u>NACHURS 6-24-6</u>
0216-0045	<u>NACHURS 9-18-9</u>
0216-0046	<u>NACHURS 3-18-18 WITH SULFUR</u>
0216-0047	<u>NACHURS 3-18-18</u>
0216-0050	<u>NACHURS TRIPLE OPTION 4-13-17</u>
0216-0051	<u>NACHURS FINISH LINE 8-4-6</u>
0216-0054	<u>NACHURS RHYZO-LINK 9-15-3</u>
0216-0055	<u>NACHURS RHYZO-LINK 3-10-3</u>
0216-0059	<u>NACHURS K-FLEX WITH ZN 0-0-19</u>
0216-0060	<u>NACHURS K-FUEL 0-0-24</u>
0216-0061	<u>NACHURS K-FLEX 0-0-19</u>
0216-0062	<u>NACHURS N-RAGE MAX 21-1-3</u>
0216-0065	<u>ALPINE MICROBOLDT CU 4-0-0</u>
0216-0066	<u>ALPINE MICROBOLT MN 0-0-9</u>
0216-0067	<u>ALPINE CRN-S 21-0-0</u>
0216-0068	<u>ALPINE MICROBOLDT ZN 4-0-0</u>

0216-0069	<u>ALPINE CRN-B 25-0-0</u>
0216-0070	<u>ALPINE MICROBOLT B</u>
0216-0071	<u>NACHURS 10% BORON</u>
0216-0072	<u>NACHURS 2.5% MG EDTA 0-0-9</u>
0216-0073	<u>NACHURS 3% CA EDTA 0-0-7</u>
0216-0074	<u>NACHURS 4.5% FE EDTA 6-0-0</u>
0216-0075	<u>NACHURS 6% MN EDTA 0-0-10</u>
0216-0076	<u>NACHURS 7.5% CU EDTA 3-0-0</u>
0216-0077	<u>NACHURS 9% ZN EDTA 4-0-0</u>
0216-0078	<u>ALPINE FORTIFIED FOLIAR 10-10-10</u>
0216-0079	<u>ALPINE MICROBOLT MO</u>
0216-0080	<u>ALPINE G20 2-20-18</u>
0216-0081	<u>ALPINE G22 6-22-2</u>
0216-0082	<u>NACHURS IMPULSE 10-18-4</u>
0216-0083	<u>ALPINE K20-S 3-0-20</u>
0216-0084	<u>NACHURS SOYGROW</u>
0216-0085	<u>NACHURS K FUSE 6-0-12</u>

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## Commercial Fertilizer

### Select Fertilizer Products Fertilizer Product Information

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**PRODUCT: NACHURS SRN 28-0-0**

Product #:0216-0013

GUARANTEED ANALYSIS	(%)	REPORTED METALS	(ppm)
Total Nitrogen (N)	28.0000	Arsenic	10.0000
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )		Cadmium	2.0000
Soluble Potash (K <sub>2</sub> O)		Cobalt	2.0000
Calcium (Ca)		Mercury	0.0500
Magnesium (Mg)		Molybdenum	2.0000
Sulfur (S)		Nickel	2.0000
Boron (B)		Lead	10.0000
Chlorine (Cl)		Selenium	10.0000
Cobalt (Co)		Zinc	15.0000
Copper (Cu)		The symbol "<" indicates that the metal was NOT FOUND at or above the minimum detection limit.	
Iron (Fe)			
Manganese (Mn)			
Molybdenum (Mo)		Waste-Derived?	
Sodium (Na)		Micronutrient Fertilizer?	
Zinc (Zn)			
GYPSUM & LIMING MATERIALS	(%)		(%)
Calcium Carbonate (CaCO <sub>3</sub> )		Magnesium Carbonate (MgCO <sub>3</sub> )	
Calcium Carbonate Equivalent (CaCO <sub>3</sub> )		Calcium Sulfate (CaSO <sub>4</sub> 2H <sub>2</sub> O)	

### COMPANY: NACHURS ALPINE SOLUTIONS CORP

Mailing Address	421 LEADER ST.
Post Office Box	
City	MARION
State	OH
Postal Code	43302
Telephone Number	740-382-5701
Fax Number	740-383-2615

The **"Reported Metals"** is the maximum claimed concentration of each listed heavy metal based on the results of the lab analysis required by WSDA of a representative sample. The results are reported in parts per million (ppm).

The **"minimum detection limit"** is determined by the lab performing the test and may be different for each product.

The **Washington Standards for Metals** are based on the Reported Metals and the maximum application rate of the product. To accurately compare products, the use rates need to be considered.

**WAC 16-200-7064** [\[external link\]](#)

**Washington Standards For Metals**

<b>Metals</b>	<b>Lbs./acre/yr.</b>
Arsenic (As)	0.297
Cadmium (Cd)	0.079
Cobalt (Co)	0.594
Mercury (Hg)	0.019
Molybdenum (Mo)	0.079
Nickel (Ni)	0.713
Lead (Pb)	1.981
Selenium (Se)	0.055
Zinc (Zn)	7.329

Questions concerning the registration of the fertilizer product displayed on this page can be directed to [fertreg@agr.wa.gov](mailto:fertreg@agr.wa.gov) via email.

You can also view the Washington State Department of Ecology's [database of waste-derived & micronutrient fertilizers](#) [\[external link\]](#).

**For product information other than metals, please contact the company directly. If you are unable to find the address or telephone number on the label, refer to the company information on this database.**

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## Commercial Fertilizer

### Select Fertilizer Products Fertilizer Product Information

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**PRODUCT: NACHURS N-RAGE 23-4-2****Product #:0216-0014**

GUARANTEED ANALYSIS	(%)	REPORTED METALS	(ppm)
Total Nitrogen (N)	23.0000	Arsenic	10.0000
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )	4.0000	Cadmium	2.0000
Soluble Potash (K <sub>2</sub> O)	2.0000	Cobalt	2.0000
Calcium (Ca)		Mercury	0.0500
Magnesium (Mg)		Molybdenum	2.0000
Sulfur (S)		Nickel	2.0000
Boron (B)		Lead	10.0000
Chlorine (Cl)		Selenium	10.0000
Cobalt (Co)		Zinc	15.0000
Copper (Cu)		The symbol "<" indicates that the metal was NOT FOUND at or above the minimum detection limit.	
Iron (Fe)			
Manganese (Mn)	0.0500		
Molybdenum (Mo)		Waste-Derived?	
Sodium (Na)		Micronutrient Fertilizer?	
Zinc (Zn)			
GYPSUM & LIMING MATERIALS	(%)		(%)
Calcium Carbonate (CaCO <sub>3</sub> )		Magnesium Carbonate (MgCO <sub>3</sub> )	
Calcium Carbonate Equivalent (CaCO <sub>3</sub> )		Calcium Sulfate (CaSO <sub>4</sub> 2H <sub>2</sub> O)	

### COMPANY: NACHURS ALPINE SOLUTIONS CORP

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**WAC 16-200-7064** [external link]

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**For product information other than metals, please contact the company directly. If you are unable to find the address or telephone number on the label, refer to the company information on this database.**

## **EXHIBIT B**



# NACHURS Rhyzo-Link 3-10-13 (3-10-13-1S-.1Zn) NACHURS Rhyzo-Link 9-15-3 (9-15-3-1S-.25Zn)

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Revision Date: 03/01/2016 Date of issue: 03/01/2016

Version: 1.0

### SECTION 1: IDENTIFICATION

#### 1.1. Product Identifier

**Product Form:** Mixture

**Product Name:** NACHURS Rhyzo-Link 3-10-13 (3-10-13-1S-.1Zn); NACHURS Rhyzo-Link 9-15-3 (9-15-3-1S-.25Zn)

#### 1.2. Intended Use of the Product

**Use of the substance/mixture:** Agriculture

#### 1.3. Name, Address, and Telephone of the Responsible Party

##### Company

Nachurs Alpine Solutions

421 Leader St.

Marion, OH 43302

740-382-5701

#### 1.4. Emergency Telephone Number

**Emergency Number** : CHEMTREC: 1-800-424-9300

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1. Classification of the Substance or Mixture

##### GHS-US classification

Not classified

#### 2.2. Label Elements

##### GHS-US Labeling

No labeling applicable

#### 2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

#### 2.4. Unknown Acute Toxicity (GHS-US)

No data available

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. Substance

Not applicable

#### 3.2. Mixture

Name	Product Identifier	%	GHS-US classification
Water	(CAS No) 7732-18-5	Proprietary	Not classified
Dipotassium phosphate	(CAS No) 7758-11-4	Proprietary	Not classified
Diammonium phosphate	(CAS No) 7783-28-0	Proprietary	Aquatic Acute 3, H402
Urea	(CAS No) 57-13-6	Proprietary	Not classified
Phosphoric acid, potassium salt (1:1)	(CAS No) 7778-77-0	Proprietary	Not classified
Ammonium thiosulfate	(CAS No) 7783-18-8	Proprietary	Not classified
Monoammonium phosphate	(CAS No) 7722-76-1	Proprietary	Not classified

The specific chemical identity and/or exact percentage of composition have been withheld as a trade secret [29 CFR 1910.1200].

Full text of H-phrases: see section 16

### SECTION 4: FIRST AID MEASURES

#### 4.1. Description of First Aid Measures

**First-aid Measures General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

**First-aid Measures After Inhalation:** When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

**First-aid Measures After Skin Contact:** Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.

**First-aid Measures After Eye Contact:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

**First-aid Measures After Ingestion:** Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

# NACHURS Rhyzo-Link 3-10-13 (3-10-13-1S-.1Zn); NACHURS Rhyzo-Link 9-15-3 (9-15-3-1S-.25Zn)

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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

**Symptoms/Injuries:** Not expected to present a significant hazard under anticipated conditions of normal use.

**Symptoms/Injuries After Inhalation:** Prolonged exposure may cause irritation.

**Symptoms/Injuries After Skin Contact:** Prolonged exposure may cause skin irritation.

**Symptoms/Injuries After Eye Contact:** May cause slight irritation to eyes.

**Symptoms/Injuries After Ingestion:** Ingestion may cause adverse effects.

**Chronic Symptoms:** None expected under normal conditions of use.

### 4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** Use extinguishing media appropriate for surrounding fire.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Not considered flammable.

**Explosion Hazard:** Product is not explosive.

**Reactivity:** Hazardous reactions will not occur under normal conditions.

### 5.3. Advice for Firefighters

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Do not breathe fumes from fires or vapors from decomposition. Use water spray or fog for cooling exposed containers.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Avoid prolonged contact with eyes, skin and clothing. Avoid breathing (vapor, mist, spray).

#### 6.1.1. For Non-emergency Personnel

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

#### 6.1.2. For Emergency Responders

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Ventilate area. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

### 6.2. Environmental Precautions

Prevent entry to sewers and public waters.

### 6.3. Methods and Material for Containment and Cleaning Up

**For Containment:** Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

**Methods for Cleaning Up:** Clean up spills immediately and dispose of waste safely. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

### 6.4. Reference to Other Sections

See Heading 8. Exposure controls and personal protection. See Section 13, Disposal Considerations.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for Safe Handling

**Precautions for Safe Handling:** Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing vapors, mist, spray.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures.

### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Comply with applicable regulations.

**Storage Conditions:** Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

**Incompatible Products:** Strong acids, strong bases, strong oxidizers.

### 7.3. Specific End Use(s)

Agriculture

# NACHURS Rhyzo-Link 3-10-13 (3-10-13-1S-.1Zn); NACHURS Rhyzo-Link 9-15-3 (9-15-3-1S-.25Zn)

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), or OSHA (PEL).

Urea (57-13-6)		
USA AIHA	WEEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>

### 8.2. Exposure Controls

#### Appropriate Engineering Controls

: Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

#### Personal Protective Equipment

: Gloves. Protective clothing. Protective goggles.



#### Materials for Protective Clothing

: Chemically resistant materials and fabrics.

#### Hand Protection

: Wear protective gloves.

#### Eye Protection

: Chemical safety goggles.

#### Skin and Body Protection

: Wear suitable protective clothing.

#### Respiratory Protection

: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation or where exposure levels are not known wear approved respiratory protection.

#### Other Information

: When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Clear, nearly colorless
Odor	: None
Odor Threshold	: No data available
pH	: 6.5 - 8
Evaporation Rate	: No data available
Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: No data available
Flash Point	: No data available
Auto-ignition Temperature	: No data available
Decomposition Temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor Pressure	: No data available
Relative Vapor Density at 20 °C	: No data available
Relative Density	: 1.25 - 1.28 (Water = 1)
Density	: 10.4 - 10.7 lb/gal
Solubility	: Completely in water
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: No data available

### 9.2. Other Information

No additional information available

## SECTION 10: STABILITY AND REACTIVITY

**10.1. Reactivity:** Hazardous reactions will not occur under normal conditions.

**10.2. Chemical Stability:** Stable under recommended handling and storage conditions (see Section 7).

**10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

# NACHURS Rhyzo-Link 3-10-13 (3-10-13-1S-.1Zn); NACHURS Rhyzo-Link 9-15-3 (9-15-3-1S-.25Zn)

## Safety Data Sheet

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**10.4. Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, and incompatible materials.

**10.5. Incompatible Materials:** Strong acids, strong bases, strong oxidizers.

**10.6. Hazardous Decomposition Products:** Thermal decomposition generates : Carbon oxides (CO, CO<sub>2</sub>). Nitrogen oxides. Ammonia. Potassium oxides. Sulfur oxide. Irritating or toxic vapors.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information On Toxicological Effects

**Acute Toxicity:** Not classified

<b>Urea (57-13-6)</b>	
LD50 Oral Rat	8471 mg/kg
<b>Ammonium thiosulfate (7783-18-8)</b>	
LD50 Oral Rat	1950 mg/kg
<b>Monoammonium phosphate (7722-76-1)</b>	
LD50 Oral Rat	5750 mg/kg
LD50 Dermal Rabbit	> 7940 mg/kg
<b>Dipotassium phosphate (7758-11-4)</b>	
LD50 Oral Rat	> 2000 mg/kg
<b>Diammonium phosphate (7783-28-0)</b>	
LD50 Oral Rat	6500 mg/kg
LD50 Dermal Rabbit	> 7950 mg/kg

**Skin Corrosion/Irritation:** Not classified

**pH:** 6.5 - 8

**Serious Eye Damage/Irritation:** Not classified

**pH:** 6.5 - 8

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Carcinogenicity:** Not classified

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Specific Target Organ Toxicity (Repeated Exposure):** Not classified

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** Prolonged exposure may cause irritation.

**Symptoms/Injuries After Skin Contact:** Prolonged exposure may cause skin irritation.

**Symptoms/Injuries After Eye Contact:** May cause slight irritation to eyes.

**Symptoms/Injuries After Ingestion:** Ingestion may cause adverse effects.

**Chronic Symptoms:** None expected under normal conditions of use.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecology - General** : Not classified.

<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])
<b>Diammonium phosphate (7783-28-0)</b>	
LC50 Fish 1	26.5 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
LC 50 Fish 2	24.8 - 29.4 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])

### 12.2. Persistence and Degradability

<b>NACHURS Rhyzo-Link 3-10-13 (3-10-13-1S-.1Zn); NACHURS Rhyzo-Link 9-15-3 (9-15-3-1S-.25Zn)</b>	
<b>Persistence and Degradability</b>	Not established.

### 12.3. Bioaccumulative Potential

<b>NACHURS Rhyzo-Link 3-10-13 (3-10-13-1S-.1Zn); NACHURS Rhyzo-Link 9-15-3 (9-15-3-1S-.25Zn)</b>	
<b>Bioaccumulative Potential</b>	Not established.

# NACHURS Rhyzo-Link 3-10-13 (3-10-13-1S-.1Zn); NACHURS Rhyzo-Link 9-15-3 (9-15-3-1S-.25Zn)

## Safety Data Sheet

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<b>Urea (57-13-6)</b>	
BCF fish 1	< 10
Log Pow	-1.59 (at 25 °C)
<b>Monoammonium phosphate (7722-76-1)</b>	
BCF fish 1	(no bioaccumulation expected)
<b>Diammonium phosphate (7783-28-0)</b>	
BCF fish 1	(no bioaccumulation expected)

**12.4. Mobility in Soil** No additional information available

### 12.5. Other Adverse Effects

**Other Information** : Avoid release to the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

**Waste Disposal Recommendations:** Dispose of contents/container in accordance with local, regional, national, and international regulations.

## SECTION 14: TRANSPORT INFORMATION

**14.1. In Accordance with DOT** Not regulated for transport

**14.2. In Accordance with IMDG** Not regulated for transport

**14.3. In Accordance with IATA** Not regulated for transport

## SECTION 15: REGULATORY INFORMATION

### 15.1 US Federal Regulations

<b>Urea (57-13-6)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Ammonium thiosulfate (7783-18-8)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Water (7732-18-5)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Monoammonium phosphate (7722-76-1)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Dipotassium phosphate (7758-11-4)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Phosphoric acid, potassium salt (1:1) (7778-77-0)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Diammonium phosphate (7783-28-0)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

### 15.2 US State Regulations

<b>Ammonium thiosulfate (7783-18-8)</b>	
U.S. - Massachusetts - Right To Know List	
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List	
U.S. - Pennsylvania - RTK (Right to Know) List	

## SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

**Revision Date** : 03/01/2016

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

### GHS Full Text Phrases:

Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
H402	Harmful to aquatic life

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

SDS US (GHS HazCom)



# NACHURS 7-22-5; NACHURS 8-19-3; NACHURS Aqua-Tech 7-20-4

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations  
Revision Date: 11/09/2016 Date of Issue: 01/25/2016

Version: 1.0

### SECTION 1: IDENTIFICATION

#### 1.1. Product Identifier

**Product Form:** Mixture

**Product Name:** NACHURS 7-22-5; NACHURS 8-19-3; NACHURS Aqua-Tech 7-20-4

#### 1.2. Intended Use of the Product

**Use of the Substance/Mixture:** Agriculture

#### 1.3. Name, Address, and Telephone of the Responsible Party

##### Company

Nachurs Alpine Solutions

421 Leader St.

Marion, OH 43302

740-382-5701

#### 1.4. Emergency Telephone Number

**Emergency Number** : CHEMTREC: 1-800-424-9300

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1. Classification of the Substance or Mixture

##### GHS-US Classification

Not classified

#### 2.2. Label Elements

##### GHS-US Labeling

No labeling applicable

#### 2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

#### 2.4. Unknown Acute Toxicity (GHS-US)

No data available

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. Substance

Not applicable

#### 3.2. Mixture

Name	Product Identifier	%	GHS-US classification
Water	(CAS No) 7732-18-5	Proprietary	Not classified
Monoammonium phosphate	(CAS No) 7722-76-1	Proprietary	Not classified
Diammonium phosphate	(CAS No) 7783-28-0	Proprietary	Aquatic Acute 3, H402
Urea	(CAS No) 57-13-6	Proprietary	Not classified

Full text of H-phrases: see section 16

The specific chemical identity and/or exact percentage of composition have been withheld as a trade secret [29 CFR 1910.1200]

### SECTION 4: FIRST AID MEASURES

#### 4.1. Description of First-aid Measures

**First-aid Measures General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

**First-aid Measures After Inhalation:** When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

**First-aid Measures After Skin Contact:** Rinse immediately with plenty of water for 5 minutes. Obtain medical attention if irritation develops or persists.

**First-aid Measures After Eye Contact:** Rinse cautiously with water for at least 5 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

**First-aid Measures After Ingestion:** Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

#### 4.2. Most Important Symptoms and Effects Both Acute and Delayed

**Symptoms/Injuries:** Not expected to present a significant hazard under anticipated conditions of normal use.

**Symptoms/Injuries After Inhalation:** Prolonged exposure may cause irritation.

**Symptoms/Injuries After Skin Contact:** Prolonged exposure may cause skin irritation.



# NACHURS 7-22-5; NACHURS 8-19-3; Aqua-Tech 7-20-4

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

**Symptoms/Injuries After Eye Contact:** May cause slight irritation to eyes.

**Symptoms/Injuries After Ingestion:** Ingestion may cause adverse effects.

**Chronic Symptoms:** None known.

### 4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** Water spray, dry chemical, alcohol-resistant foam, carbon dioxide.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Not considered flammable but may burn at high temperatures.

**Explosion Hazard:** Product is not explosive.

**Reactivity:** Hazardous reactions will not occur under normal conditions.

### 5.3. Advice for Firefighters

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Use water spray or fog for cooling exposed containers.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** Carbon oxides (CO, CO<sub>2</sub>). Nitrogen oxides. Ammonia. Sodium oxides. Potassium oxides.

Phosphorus oxides. When heated, urea releases ammonia and when heated to decomposition it emits toxic fumes of nitrogen oxides (NO<sub>x</sub>), ammonia, and cyanuric acid.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Avoid prolonged contact with eyes, skin and clothing. Avoid breathing (vapor, mist, spray).

#### 6.1.1. For Non-Emergency Personnel

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

#### 6.1.2. For Emergency Personnel

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Ventilate area. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

### 6.2. Environmental Precautions

Prevent entry to sewers and public waters.

### 6.3. Methods and Materials for Containment and Cleaning Up

**For Containment:** Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

**Methods for Cleaning Up:** Clean up spills immediately and dispose of waste safely. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

### 6.4. Reference to Other Sections

See Heading 8. Exposure controls and personal protection. See Section 13, Disposal Considerations.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for Safe Handling

**Precautions for Safe Handling:** Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing vapors, mist, spray.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures.

### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Comply with applicable regulations.

**Storage Conditions:** Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

**Incompatible Products:** Strong acids, strong bases, strong oxidizers. Water reactive materials.

### 7.3. Specific End Use(s)

Agriculture

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), or OSHA (PEL).

# NACHURS 7-22-5; NACHURS 8-19-3; Aqua-Tech 7-20-4

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Urea (57-13-6)		
USA AIHA	WEEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>

### 8.2. Exposure Controls

#### Appropriate Engineering Controls

: Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

#### Personal Protective Equipment

: Gloves. Protective clothing. Protective goggles.



#### Materials for Protective Clothing

: Chemically resistant materials and fabrics.

#### Hand Protection

: Wear protective gloves.

#### Eye Protection

: Chemical safety goggles.

#### Skin and Body Protection

: Wear suitable protective clothing.

#### Respiratory Protection

: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

#### Other Information

: When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Clear, opaque / translucent green
Odor	: None to slight ammonia
Odor Threshold	: No data available
pH	: 5.5 - 7
Evaporation Rate	: No data available
Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: > 200 °F (> 93.33 °C)
Flash Point	: No data available
Auto-ignition Temperature	: No data available
Decomposition Temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor Pressure	: No data available
Relative Vapor Density at 20°C	: No data available
Relative Density	: 1.25 - 1.35 kg/L
Specific Gravity	: 10.35 - 11.25 lb/gal
Solubility	: Complete
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: No data available

### 9.2. Other Information

No additional information available

## SECTION 10: STABILITY AND REACTIVITY

- 10.1. **Reactivity:** Hazardous reactions will not occur under normal conditions.
- 10.2. **Chemical Stability:** Stable under recommended handling and storage conditions (see section 7).
- 10.3. **Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. **Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, and incompatible materials.
- 10.5. **Incompatible Materials:** Strong acids, strong bases, strong oxidizers.
- 10.6. **Hazardous Decomposition Products:** None known.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on Toxicological Effects

Acute Toxicity: Not classified

# NACHURS 7-22-5; NACHURS 8-19-3; Aqua-Tech 7-20-4

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>Monoammonium phosphate (7722-76-1)</b>	
LD50 Oral Rat	5750 mg/kg
LD50 Dermal Rabbit	> 7940 mg/kg
<b>Diammonium phosphate (7783-28-0)</b>	
LD50 Oral Rat	> 2000 mg/kg
LD50 Dermal Rabbit	> 5000 mg/kg
<b>Urea (57-13-6)</b>	
LD50 Oral Rat	8471 mg/kg

**Skin Corrosion/Irritation:** Not classified

**pH:** 5.9 - 7

**Serious Eye Damage/Irritation:** Not classified

**pH:** 5.9 - 7

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Carcinogenicity:** Not classified

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Specific Target Organ Toxicity (Repeated Exposure):** Not classified

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** Prolonged exposure may cause irritation.

**Symptoms/Injuries After Skin Contact:** Prolonged exposure may cause skin irritation.

**Symptoms/Injuries After Eye Contact:** May cause slight irritation to eyes.

**Symptoms/Injuries After Ingestion:** Ingestion may cause adverse effects.

**Chronic Symptoms:** None known.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecology - General** : Not classified.

<b>Diammonium phosphate (7783-28-0)</b>	
LC50 Fish 1	26.5 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
LC50 Fish 2	24.8 - 29.4 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
<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>NACHURS 7-22-5; NACHURS 8-19-3; Aqua-Tech 7-20-4</b>	
<b>Persistence and Degradability</b>	Not established.

### 12.3. Bioaccumulative Potential

<b>NACHURS 7-22-5; NACHURS 8-19-3; Aqua-Tech 7-20-4</b>	
<b>Bioaccumulative Potential</b>	Not established.
<b>Monoammonium phosphate (7722-76-1)</b>	
<b>BCF Fish 1</b>	(no bioaccumulation expected)
<b>Diammonium phosphate (7783-28-0)</b>	
<b>BCF Fish 1</b>	(no bioaccumulation expected)
<b>Urea (57-13-6)</b>	
<b>BCF Fish 1</b>	< 10
<b>Log Pow</b>	-1.59 (at 25 °C)

**12.4. Mobility in Soil** No additional information available

### 12.5. Other Adverse Effects

**Other Information**

: Avoid release to the environment. This product is water soluble and eventually biodegrades into elemental nitrogen. Excess nitrogen and nitrates in a body of water will contribute to eutrophication with visible effects such as toxic algae bloom.

# NACHURS 7-22-5; NACHURS 8-19-3; Aqua-Tech 7-20-4

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 13: DISPOSAL CONSIDERATIONS

#### 13.1. Waste Treatment Methods

**Waste Disposal Recommendations:** Dispose of contents/container in accordance with local, regional, national, and international regulations.

**Additional Information:** Container may remain hazardous when empty. Continue to observe all precautions.

**Ecology - Waste Materials:** Avoid release to the environment.

### SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

**14.1. In Accordance with DOT** Not regulated for transport

**14.2. In Accordance with IMDG** Not regulated for transport

**14.3. In Accordance with IATA** Not regulated for transport

### SECTION 15: REGULATORY INFORMATION

#### 15.1. US Federal Regulations

##### Monoammonium phosphate (7722-76-1)

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

##### Diammonium phosphate (7783-28-0)

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

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

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

**15.2. US State Regulations** Neither this product nor its chemical components appear on any US state lists.

### SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

**Revision Date** : 11/09/2016

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200

#### GHS Full Text Phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
H302	Harmful if swallowed
H402	Harmful to aquatic life

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

SDS US (GHS HazCom)



# NACHURS 3-18-18; NACHURS 5-20-5; NACHURS 8-16-8; NACHURS 9-18-9; NACHURS 9-20-3; NACHURS 10-10-10

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Revision Date: 02/17/2016 Date of issue: 02/17/2016

Version: 1.0

### SECTION 1: IDENTIFICATION

#### 1.1. Product Identifier

**Product Form:** Mixture

**Product Name:** NACHURS 3-18-18; NACHURS 5-20-5; NACHURS 8-16-8; NACHURS 9-18-9; NACHURS 9-20-3; NACHURS 10-10-10

#### 1.2. Intended Use of the Product

**Use of the substance/mixture:** Agriculture

#### 1.3. Name, Address, and Telephone of the Responsible Party

##### Company

Nachurs Alpine Solutions

421 Leader St.

Marion, OH 43302

740-382-5701

#### 1.4. Emergency Telephone Number

**Emergency Number** : CHEMTREC: 1-800-424-9300

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1. Classification of the Substance or Mixture

##### GHS-US classification

Not classified

#### 2.2. Label Elements

##### GHS-US Labeling

No labeling applicable

#### 2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

#### 2.4. Unknown Acute Toxicity (GHS-US)

No data available

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. Substance

Not applicable

#### 3.2. Mixture

Name	Product Identifier	%	GHS-US classification
Water	(CAS No) 7732-18-5	Proprietary	Not classified
Dipotassium phosphate	(CAS No) 7758-11-4	Proprietary	Not classified
Urea	(CAS No) 57-13-6	Proprietary	Not classified
Diammonium phosphate	(CAS No) 7783-28-0	Proprietary	Aquatic Acute 3, H402
Monoammonium phosphate	(CAS No) 7722-76-1	Proprietary	Not classified
Phosphoric acid, potassium salt (1:1)	(CAS No) 7778-77-0	Proprietary	Not classified

The specific chemical identity and/or exact percentage of composition have been withheld as a trade secret [29 CFR 1910.1200].

Full text of H-phrases: see section 16

### SECTION 4: FIRST AID MEASURES

#### 4.1. Description of First Aid Measures

**First-aid Measures General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

**First-aid Measures After Inhalation:** When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

**First-aid Measures After Skin Contact:** Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.

**First-aid Measures After Eye Contact:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

**First-aid Measures After Ingestion:** Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

# NACHURS 3-18-18; NACHURS 5-20-5; NACHURS 8-16-8; NACHURS 9-18-9; NACHURS 9-20-3; NACHURS 10-10-10

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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

**Symptoms/Injuries:** Not expected to present a significant hazard under anticipated conditions of normal use.

**Symptoms/Injuries After Inhalation:** Prolonged exposure may cause irritation.

**Symptoms/Injuries After Skin Contact:** Prolonged exposure may cause skin irritation.

**Symptoms/Injuries After Eye Contact:** May cause slight irritation to eyes.

**Symptoms/Injuries After Ingestion:** Ingestion may cause adverse effects.

**Chronic Symptoms:** None known.

### 4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** Use extinguishing media appropriate for surrounding fire.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Not considered flammable.

**Explosion Hazard:** Product is not explosive.

**Reactivity:** Hazardous reactions will not occur under normal conditions. May react vigorously with incompatible materials. May release toxic and corrosive fumes including ammonia, nitrogen oxides, and phosphorus oxides.

### 5.3. Advice for Firefighters

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Do not breathe fumes from fires or vapors from decomposition. Use water spray or fog for cooling exposed containers.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Avoid prolonged contact with eyes, skin and clothing. Avoid breathing (vapor, mist, spray).

#### 6.1.1. For Non-emergency Personnel

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

#### 6.1.2. For Emergency Responders

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Ventilate area. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

### 6.2. Environmental Precautions

Prevent entry to sewers and public waters.

### 6.3. Methods and Material for Containment and Cleaning Up

**For Containment:** Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

**Methods for Cleaning Up:** Clean up spills immediately and dispose of waste safely. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

### 6.4. Reference to Other Sections

See Heading 8. Exposure controls and personal protection. See Section 13, Disposal Considerations.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for Safe Handling

**Precautions for Safe Handling:** Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing vapors, mist, spray.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures.

### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Comply with applicable regulations.

**Storage Conditions:** Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

**Incompatible Products:** Strong acids, strong bases, strong oxidizers.

### 7.3. Specific End Use(s)

# NACHURS 3-18-18; NACHURS 5-20-5; NACHURS 8-16-8; NACHURS 9-18-9; NACHURS 9-20-3; NACHURS 10-10-10

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Agriculture

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), or OSHA (PEL).

Urea (57-13-6)		
USA AIHA	WEEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>

### 8.2. Exposure Controls

#### Appropriate Engineering Controls

: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

#### Personal Protective Equipment

: Gloves. Protective clothing. Protective goggles.



#### Materials for Protective Clothing

: Chemically resistant materials and fabrics.

#### Hand Protection

: Wear protective gloves.

#### Eye Protection

: Chemical safety goggles.

#### Skin and Body Protection

: Wear suitable protective clothing.

#### Respiratory Protection

: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation or where exposure levels are not known wear approved respiratory protection.

#### Other Information

: When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

#### Physical State

: Liquid

#### Appearance

: Clear, nearly colorless  
8-16-8: Clear pale yellow

#### Odor

: None  
8-16-8: Mild ammonia

#### Odor Threshold

: No data available

#### pH

: 6.5 - 7.8

#### Evaporation Rate

: No data available

#### Melting Point

: No data available

#### Freezing Point

: No data available

#### Boiling Point

: No data available

#### Flash Point

: > 93.3 °C (200°F)

#### Auto-ignition Temperature

: No data available

#### Decomposition Temperature

: No data available

#### Flammability (solid, gas)

: No data available

#### Vapor Pressure

: No data available

#### Relative Vapor Density at 20 °C

: No data available

#### Relative Density

: No data available

#### Specific Gravity

: 1.26 - 1.38

#### Density

: 10.5 - 11.7 lb/gal

#### Solubility

: Completely soluble in water

#### Partition Coefficient: N-Octanol/Water

: No data available

#### Viscosity

: No data available

# NACHURS 3-18-18; NACHURS 5-20-5; NACHURS 8-16-8; NACHURS 9-18-9; NACHURS 9-20-3; NACHURS 10-10-10

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 9.2. Other Information No additional information available

## SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:** Hazardous reactions will not occur under normal conditions. May react vigorously with incompatible materials. May release toxic and corrosive fumes including ammonia, nitrogen oxides, and phosphorus oxides.
- 10.2. Chemical Stability:** Stable under recommended handling and storage conditions (see Section 7).
- 10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, and incompatible materials.
- 10.5. Incompatible Materials:** Strong acids, strong bases, strong oxidizers.
- 10.6. Hazardous Decomposition Products:** Thermal decomposition generates: Carbon oxides (CO, CO<sub>2</sub>). Potassium oxides. Nitrogen oxides. Irritating or toxic vapors.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information On Toxicological Effects

**Acute Toxicity:** Not classified

<b>Urea (57-13-6)</b>	
<b>LD50 Oral Rat</b>	8471 mg/kg
<b>Dipotassium phosphate (7758-11-4)</b>	
<b>LD50 Oral Rat</b>	> 2000 mg/kg
<b>Diammonium phosphate (7783-28-0)</b>	
<b>LD50 Oral Rat</b>	6500 mg/kg
<b>LD50 Dermal Rabbit</b>	> 7950 mg/kg
<b>Monoammonium phosphate (7722-76-1)</b>	
<b>LD50 Oral Rat</b>	5750 mg/kg
<b>LD50 Dermal Rabbit</b>	> 7940 mg/kg

**Skin Corrosion/Irritation:** Not classified

**pH:** 6.5 - 7.8

**Serious Eye Damage/Irritation:** Not classified

**pH:** 6.5 - 7.8

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Carcinogenicity:** Not classified

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Specific Target Organ Toxicity (Repeated Exposure):** Not classified

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** Prolonged exposure may cause irritation.

**Symptoms/Injuries After Skin Contact:** Prolonged exposure may cause skin irritation.

**Symptoms/Injuries After Eye Contact:** May cause slight irritation to eyes.

**Symptoms/Injuries After Ingestion:** Ingestion may cause adverse effects.

**Chronic Symptoms:** None known.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecology - General** : Not classified.

<b>Urea (57-13-6)</b>	
<b>LC50 Fish 1</b>	16200 - 18300 mg/l (Exposure time: 96 h - Species: Poecilia reticulata)
<b>EC50 Daphnia 1</b>	3910 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
<b>Diammonium phosphate (7783-28-0)</b>	
<b>LC50 Fish 1</b>	26.5 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
<b>LC 50 Fish 2</b>	24.8 - 29.4 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])

### 12.2. Persistence and Degradability

<b>NACHURS 3-18-18; NACHURS 5-20-5; NACHURS 8-16-8; NACHURS 9-18-9; NACHURS 9-20-3; NACHURS 10-10-10</b>	
<b>Persistence and Degradability</b>	Not established.



# NACHURS 3-18-18; NACHURS 5-20-5; NACHURS 8-16-8; NACHURS 9-18-9; NACHURS 9-20-3; NACHURS 10-10-10

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

## 12.3. Bioaccumulative Potential

NACHURS 3-18-18; NACHURS 5-20-5; NACHURS 8-16-8; NACHURS 9-18-9; NACHURS 9-20-3; NACHURS 10-10-10	
Bioaccumulative Potential	Not established.
Urea (57-13-6)	
BCF fish 1	< 10
Log Pow	-1.59 (at 25 °C)
Diammonium phosphate (7783-28-0)	
BCF fish 1	(no bioaccumulation expected)
Monoammonium phosphate (7722-76-1)	
BCF fish 1	(no bioaccumulation expected)

12.4. Mobility in Soil No additional information available

## 12.5. Other Adverse Effects

Other Information : Avoid release to the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

**Waste Disposal Recommendations:** Dispose of contents/container in accordance with local, regional, national, and international regulations.

## SECTION 14: TRANSPORT INFORMATION

14.1. In Accordance with DOT Not regulated for transport

14.2. In Accordance with IMDG Not regulated for transport

14.3. In Accordance with IATA Not regulated for transport

## SECTION 15: REGULATORY INFORMATION

### 15.1 US Federal Regulations

Urea (57-13-6)	
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	
Dipotassium phosphate (7758-11-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Phosphoric acid, potassium salt (1:1) (7778-77-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Diammonium phosphate (7783-28-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Monoammonium phosphate (7722-76-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2 US State Regulations Neither this product nor its chemical components appear on any US state lists.

## SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 02/17/2016

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

### GHS Full Text Phrases:

Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
H402	Harmful to aquatic life

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

SDS US (GHS HazCom)