



AQUA-YIELD®

## AQUA YIELD OPERATIONS

### Safety Data Sheet NanoRange™

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#### SECTION 1: Identification

##### 1.1 GHS Product identifier

Product name	NanoRange™
Brand	Turf Nano Tech™

##### 1.3 Recommended use of the chemical and restrictions on use

Soil and foliar nutrient for turf management. Do not exceed the recommended application rates.

##### 1.4 Supplier's details

Name	Aqua Yield Operations
Address	9180 Sandy Parkway Suite D Sandy Utah 84070 United States
Telephone	(801) 449-9220
email	info@aquayield.com

##### 1.5 Emergency phone number

ChemTel Inc.  
+1(800)255-3924 (North America)  
+1(813)248-0585 (International)

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#### SECTION 2: Hazard identification

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

**GHS classification in accordance with: OSHA (29 CFR 1910.1200)**

Not a hazardous substance or mixture.

##### 2.2 GHS label elements, including precautionary statements

Not a hazardous substance or mixture.

##### 2.3 Other hazards which do not result in classification

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Not a hazardous substance or mixture.

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### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

##### Hazardous components

###### 1. Urea

Concentration 49 % (weight)  
CAS no. 57-13-6

###### 2. Potassium acetate hydrate

Concentration 23 % (weight)  
CAS no. 254966-93-3

###### 3. Fe EDTA

Concentration 23 % (weight)  
CAS no. 15275-07-7

###### 4. Ammonium thiosulfate

Concentration 4 % (weight)  
EC no. 231-982-0  
CAS no. 7783-18-8

###### 5. Water

Concentration Not specified, Trade secret\*  
EC no. 231-791-2  
CAS no. 7732-18-5

###### 6. Silicon dioxide

Concentration Not specified, Trade secret\*  
CAS no. 14808-60-7

##### Trade secret statement (OSHA 1910.1200(i))

\*The specific chemical identities and/or actual concentrations or actual concentration ranges for one or more listed components are being withheld as trade secrets under the US regulation 29 CFR 1910.1200(i).

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### SECTION 4: First-aid measures

#### 4.1 Description of necessary first-aid measures

General advice In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

If inhaled If large amounts are inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if irritation develops or persists.

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In case of skin contact	Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Wash contaminated clothing before reuse. Obtain medical attention if irritation develops or persists.
In case of eye contact	Immediately flush eyes with water for at least 15 minutes. Remove contact lenses, if present and easy to do so. Obtain medical attention if irritation develops or persists.
If swallowed	Rinse mouth. Induce vomiting. Drink plenty of water. Call a Poison Center or get medical attention immediately. If irritation persists, receive medical treatment.

### 4.2 Most important symptoms/effects, acute and delayed

Prolonged or repeated skin contact may cause irritation. Causes burns by all exposure routes. Product is corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically. If medical advice is needed, have product container or label at hand.

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## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Use extinguishing media appropriate for surrounding fire.

### 5.2 Specific hazards arising from the chemical

Ammonium thiosulfate: Not readily combustible. When heated to decomposition (as in fires) emits toxic fumes of ammonia, hydrogen sulfide, nitrogen oxides and sulfur oxides.

### 5.3 Special protective actions for fire-fighters

Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires.

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## SECTION 6: Accidental release measures

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

Avoid inhalation of spray mist and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing, gloves, and eye/face protection. Stop leak if safe to do so. Eliminate ignition sources. Evacuate unnecessary personnel. For personal protection, see section 8 of the SDS.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not contaminate water. Do not allow to enter drains, sewers, or watercourses. Do not flush into surface water or sanitary sewer system.

### 6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal. Never return spills to original container for re-use.

#### Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

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Proper PPE should be worn while handling. Avoid inhalation of vapors/sprays and contact with skin and eyes. Use only with adequate ventilation. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Keep out of reach of children.

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

Store in a dry, cool and well-ventilated place. Protect containers from physical damage. Keep container tightly closed. Do not store above 25°C (77°F) for maximum storage life. Protect from freezing. Store away from food and feed.

#### Specific end use(s)

Industrial uses: None identified

Professional uses: Foliar and Soil Nutrient

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### 1. Potassium hydroxide (CAS: 1310-58-3 EC: 215-181-3)

PEL-C (Inhalation): 2 mg/m<sup>3</sup>; USA (ACGIH)

Upper Respiratory Tract irritation, Eye irritation, Skin irritation

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PEL-C (Inhalation): 2 mg/m<sup>3</sup>; USA (NIOSH)

PEL-C (Inhalation): 2 mg/m<sup>3</sup>; USA (Cal/OSHA)

### 8.2 Appropriate engineering controls

No relevant information available.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Follow relevant national guidelines concerning the use of protective eyewear.

#### Skin protection

Proper PPE required.

#### Body protection

Body protection:

Wear suitable protective clothing.

Wear appropriate protective gloves, chemical resistant. Frequent change is advisable.

Eye protection:

Wear appropriate protect eyeglasses of chemical safety goggles.

#### Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

#### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

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## SECTION 9: Physical and chemical properties and safety characteristics

### Basic physical and chemical properties

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Physical state	Liquid
Appearance	clear/liquid
Odor	
Odor threshold	Not determined
Melting point/freezing point	Not determined
Boiling point or initial boiling point and boiling range	100°C (212°F)
Flammability	Not applicable
Lower and upper explosion limit/flammability limit	Not determined
Flash point	Not determined
Auto-ignition temperature	Not determined
Decomposition temperature	Not determined
pH	
Kinematic viscosity	Not determined
Solubility	Soluble with water
Partition coefficient n-octanol/water (log value)	Not determined
Vapor pressure	Not determined
Evaporation rate	Not determined
Density and/or relative density	1.2145 g/mL
Relative vapor density	Not determined

### Particle characteristics

Not determined

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Stable and non-reactive under normal conditions.

### 10.2 Chemical stability

Stable under normal temperatures and pressures. Can be moisture and air sensitive.

### 10.3 Possibility of hazardous reactions

No dangerous or hazardous reaction under normal conditions.

### 10.4 Conditions to avoid

No relevant information available.

### 10.5 Incompatible materials

Potassium hydroxide: Nitro compounds, Organic materials, Magnesium, Copper, Water, reacts violently with: Metals, Light metals, Contact with aluminum, tin and zinc liberates hydrogen gas. Contact with nitromethane and other similar nitro compounds causes formation of shock-sensitive salts., vigorous reaction with: Alkali metals, Halogens, Azides, Anhydrides

Ammonium thiosulfate: Seriously corrodes copper-based alloy.

### 10.6 Hazardous decomposition products

Potassium hydroxide: Other decomposition products - No data available

Hazardous decomposition products formed under fire conditions. - Potassium oxides

In the event of fire: see section 5

Ammonium thiosulfate: Emits toxic fumes of ammonia, hydrogen sulfide, nitrogen oxides and sulfur oxides.

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## SECTION 11: Toxicological information

### Information on toxicological effects

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### Acute toxicity

Ammonium thiosulfate: Skin: May cause skin irritation.

Eyes: Causes eye irritation.

Inhalation: Causes respiratory tract irritation.

Ingestion: May cause gastrointestinal tract irritation with diarrhea.

May affect behavior/central nervous system (somnolence, convulsions, ataxia). respiration (emphysema), Kidneys (acute renal failure, acute tubular necrosis), blood (hemorrhage). The toxicological properties of this substance have not been fully investigated.

### Skin corrosion/irritation

Prolonged exposure may cause skin irritation.

May cause severe burns by all exposure routes.

### Serious eye damage/irritation

Based on available data, the classification criteria are not met.

### Respiratory or skin sensitization

Based on available data, the classification criteria are not met.

### Germ cell mutagenicity

Based on available data, the classification criteria are not met.

### Carcinogenicity

Based on available data, the classification criteria are not met.

### Reproductive toxicity

Based on available data, the classification criteria are not met.

### STOT-single exposure

Based on available data, the classification criteria are not met.

### STOT-repeated exposure

Based on available data, the classification criteria are not met.

### Aspiration hazard

Based on available data, the classification criteria are not met.

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## SECTION 12: Ecological information

### Toxicity

Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Contains a substance which is harmful to aquatic organisms.

### Persistence and degradability

Ammonium thiosulfate: Hazardous short term degradation products are not likely to form. However, long term degradation products may arise. The material itself and its products of degradation are not toxic.

### Bioaccumulative potential

No relevant information available.

### Mobility in soil

This product is water soluble and may disperse in soil.

### Results of PBT and vPvB assessment

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No relevant information available.

### Endocrine disrupting properties

No relevant information available.

### Other adverse effects

No relevant information available.

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## SECTION 13: Disposal considerations

### Disposal methods

#### Product disposal

Dispose of waste material in accordance with local, regional, national, provincial, territorial, and international regulations. Do not allow this material to drain into sewers/water supplies.

#### Packaging disposal

Since emptied containers may retain product residue, follow label warnings even after container is emptied.

#### Waste treatment

Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

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## SECTION 14: Transport information

- 14.1 UN Number
- 14.2 UN Proper Shipping Name
- 14.3 Transport hazard class(es)
- 14.4 Packing group

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## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

#### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

#### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### HMIS Rating

NanoRange™	
HEALTH	1
FLAMMABILITY	
PHYSICAL HAZARD	
PERSONAL PROTECTION	A

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## SECTION 16: Other information

### 16.2 Preparation information

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This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. This safety data sheet provides health and safety information. The product is to be used in applications consistent with best farming practice. Individuals handling this product should be informed under COSHH of the recommended safety precautions and should have access to this information. The product information data sheet is to the best of Aqua-Yield's knowledge correct as at the date of publication. Neither Aqua-Yield, importer or local supplier accepts liability for any loss or damage resulting from reliance on this information. Further information on this product may be obtained from the supplier whose name, address and telephone number will be found on the product container. The information provided herein is offered solely for your consideration, investigation and verification. This information herein is provided by Aqua-Yield in good faith as accurate at the time of writing but without guarantee. This information includes information which has been generated by other parties and provided to Aqua-Yield and which Aqua-Yield has not independently verified. The information provided herein relates only to the specific product designated and may not be valid if the product is used in combination with any other materials or in any process.

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