



### TETRA Micronutrients

### Material Safety Data Sheet

This MSDS complies with the style format specified by ANSI Z400.1 - 1993

## SECTION 1: CHEMICAL PRODUCT - COMPANY IDENTIFICATION

### **TETRA Micronutrients**

230 Spring Hill Dr., Suite 310  
The Woodlands, Texas 77386  
(281) 419-9430  
(800) 521-9979

**(800) 424-9300 - CHEMTREC (24 Hour Emergency Response)**

**SUBSTANCE:** Chelated Zinc Sulfate Solution

**TRADE NAMES/SYNONYMS:** None

**CHEMICAL FAMILY:** Inorganic Salt

**MSDS CREATION DATE:** 17 Dec 2002

**MSDS REVISION DATE:** 28 Oct 2009

## SECTION 2: COMPOSITION, INFORMATION ON INGREDIENTS

The composition of this product is proprietary. This product or one or more of its components is/are hazardous as defined in 29 CFR 1910.1200. In the event of a medical emergency, spill or fire, compositional information will be revealed to responding emergency personnel.

**COMPONENTS:** Zinc Sulfate, Ammonium Hydroxide, Proprietary Organic Acid, and Water

**CAS NUMBER:** 7646-19-7 (Zinc Sulfate), 1336-21-6 (Ammonium Hydroxide), Proprietary (Proprietary Organic Acid), 7732-18-5 (Water)

**RTECS NUMBER:** ZH5300000 (Zinc Sulfate), BQ9625000 (Ammonium Hydroxide), Proprietary (Proprietary Organic Acid), ZC0110000 (Water)

**PERCENTAGE:** Proprietary

**PROBABLE CONTAMINANT:** Not known

## SECTION 3: HAZARDS IDENTIFICATION

**NFPA RATINGS:** (SCALE 0-4): HEALTH=2, FIRE=0, REACTIVITY=0

**EMERGENCY OVERVIEW:** Clear yellow to light amber liquid with slight ammonia odor. Maybe harmful if ingested. Liquid or mist may be irritating to the respiratory tract. Contact with eyes can cause burns. Exposure to the skin can cause burns and/or dryness with possible irritation. Avoid contact with eyes and/or skin. Wash thoroughly after handling. Work in well ventilated area.



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#### POTENTIAL HEALTH EFFECTS:

##### INHALATION:

**Short Term Effects:** May cause irritation of the nasal membranes and upper respiratory tract. Additional effects may include difficulty breathing, low blood pressure, dizziness, bluish skin color and lung congestion.

**Long Term Effects:** In addition to short term exposure, digestive disorders may occur.

##### SKIN CONTACT:

**Short Term Effects:** May cause burns and/or dryness and irritation, possibly severe.

**Long Term Effects:** Same effects as short term exposure.

##### EYE CONTACT:

**Short Term Effects:** Contact may cause burns, possibly severe. Additional effects may include irritation, tearing and/or blurred vision.

**Long Term Effects:** Same effects as short term exposure.

##### INGESTION:

**Short Term Effects:** May be fatal if swallowed. May cause burns. Additional effects may include fever, nausea, vomiting, diarrhea, stomach pain, blood in the stool, inability to urinate, low blood pressure, kidney damage, liver damage and convulsions.

**Long Term Effects:** Same effects as reported in short term ingestion.

##### CARCINOGEN STATUS:

**OSHA:** No    **NTP:** No    **IARC:** No

### SECTION 4: FIRST AID MEASURES

**INHALATION:** Remove from exposure area to fresh air immediately. If breathing is difficult, give oxygen. Oxygen must be administered by properly trained personnel. If breathing has stopped, perform artificial resuscitation. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.

**SKIN CONTACT:** Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of product remains (at least 15-20 minutes). If burns occur, proceed with the following: cover affected area securely with sterile, dry, loose-fitting dressing. Treat symptomatically and supportively. Get medical attention immediately.

**EYE CONTACT:** Flush eyes immediately with large amounts of water or normal saline solution occasionally lifting upper and lower lids until no evidence of product remains (approximately 15-20 minutes). Cover with sterile bandages. Get medical attention immediately.



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**INGESTION:** Dilute the product immediately with reasonable amounts of water or milk, if the person is conscious and capable of drinking fluids safely. If vomiting occurs, keep head lower than hips to prevent aspiration. Treat symptomatically and supportively. Get medical attention immediately.

**NOTE TO PHYSICIAN:** This product contains zinc salts.

### SECTION 5: FIRE FIGHTING MEASURES

**FIRE AND EXPLOSION HAZARD:** Negligible fire and explosion hazard when exposed to heat or flame.

**EXTINGUISHING MEDIA:** Dry chemical, carbon dioxide, water spray or foam, as appropriate for surrounding material. For larger fires, use water spray, fog or regular foam (2008 North American Emergency Response Guidebook, Guide Number 171).

**FIREFIGHTING:** Move product from fire area if you can without risk. Extinguish fire using agent suitable for type of surrounding fire and/or chemicals. Do not use water directly on material. Avoid breathing vapors; keep upwind. Dike area to prevent runoff and contamination of water resources.

**HAZARDOUS COMBUSTION PRODUCTS:** Thermal decomposition may include toxic and hazardous oxides of zinc, sulfur, nitrogen and carbon.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

**OCCUPATIONAL SPILL:** Do not touch spilled material. Stop leak if you can without risk. For small spills, take-up with sand or other absorbent material and place in containers for disposal. For larger spills, dike far ahead of spill for later disposal. Move containers from spill area if possible. Wear protective equipment appropriate for volume of spill. Deny entry to nonessential personnel and isolate hazard. Wash thoroughly after handling. Use with adequate ventilation.

### SECTION 7: HANDLING AND STORAGE

Observe all federal, state and local regulations when storing this product. Avoid outdoor storage. It is recommended that storage and transfers of this product be done on an impervious surface. Store in a tightly closed, compatible, corrosion resistant container. Store away from incompatible materials. Keep away from children, pets, and wildlife.



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## SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

**EXPOSURE LIMITS** (as Pro Zinc 10 + Foliar Chelate): No occupational exposure limits have been established by OSHA/ACGIH/NIOSH.

**EXPOSURE LIMITS** (components):

- No occupational exposure limits have been established by OSHA/ACGIH/NIOSH for Proprietary Organic Acid.
- Exposure limits for Ammonia:
  - 50 ppm (35 mg/m<sup>3</sup>) OSHA TWA
  - 35 ppm (27 mg/m<sup>3</sup>) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)
  - 25 ppm (18 mg/m<sup>3</sup>) ACGIH TWA
  - 35 ppm (27 mg/m<sup>3</sup>) ACGIH STEL
  - 25 ppm (18 mg/m<sup>3</sup>) NIOSH recommended TWA 10 hour(s)
  - 35 ppm (27 mg/m<sup>3</sup>) NIOSH recommended STEL
  - 25 ppm (18 mg/m<sup>3</sup>) UK OES TWA
  - 35 ppm (25 mg/m<sup>3</sup>) UK OES STEL

**VENTILATION:** Provide local exhaust or process enclosure ventilation.

**EYE PROTECTION:** Wear safety glasses with splash shields or safety goggles/shield to prevent contact with this product.

**EMERGENCY WASH FACILITIES:** Where there is any possibility that an employee's eyes and/or skin may be exposed to this product the employer should provide an eye wash fountain and quick drench shower within the immediate work area for emergency use.

**CLOTHING:** Wear appropriate protective clothing and equipment to prevent repeated or prolonged skin contact with this product. Although skin contamination is not generally a problem, it increases the possibility of ingestion through poor personnel hygiene. Contaminated work clothing and shoes should not be taken from the workplace.

**GLOVES:** Wear appropriate protective gloves to prevent contact with this product.

**RESPIRATOR:** The respirator selected must be based on contamination levels found in the work place and specific to the job assignment. Do not exceed the working limits of the respirator. Respirators must be approved by the National Institute for Occupational Safety and Health (NIOSH).

**FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:** Any self-contained breathing apparatus that has a full facepiece and is operated in a positive-pressure mode. Any supplied-air respirator that has a full facepiece and is operated in a positive-pressure mode.



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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**DESCRIPTION:** Clear yellow to light amber liquid with slight ammonia odor.

**pH:** 9.5m -10.0

**MELTING POINT:** Not applicable

**BOILING POINT:** Not determined

**WATER SOLUBILITY:** 100%

**SPECIFIC GRAVITY (water = 1.0):** 1.32 @ 68°F (20°C)

## SECTION 10: STABILITY AND REACTIVITY

**REACTIVITY:** Stable under normal temperatures and pressures.

**CONDITIONS TO AVOID:** Avoid contact with strong oxidizers, acids and/or excessive heat. Dangerous gases may accumulate in confined spaces.

**INCOMPATIBILITIES:** Oxidizing materials, acids, metals, and metal oxides.

**HAZARDOUS DECOMPOSITION:** Thermal decomposition products may include toxic and hazardous oxides of zinc, sulfur, nitrogen and carbon.

**POLYMERIZATION:** Has not been reported to occur under normal temperatures and pressures.

## SECTION 11: TOXICOLOGICAL INFORMATION

**Toxicological information for Pro Zinc 10 + Foliar Chelate is not available.**

**CARCINOGEN STATUS:** Data not available.

**LOCAL EFFECTS:** Irritant: Inhalation, skin, eye, ingestion.

**ACUTE TOXICITY LEVEL:** Toxic by ingestion.

**TARGET EFFECTS:** Poisoning may affect the liver and kidneys.



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#### HEALTH EFFECTS:

##### INHALATION:

**Acute Exposure:** Inhalation of mist/dust may cause irritation of the respiratory tract with sore throat, coughing, shortness of breath, labored breathing, pain in the nose, mouth, and throat, and burns of the mucous membranes. If sufficient quantities are inhaled, pulmonary edema may develop, often with a latent period of 5 - 72 hours. The symptoms may include tightness in the chest, dyspnea, frothy sputum, cyanosis, and dizziness. Physical findings may include weak, rapid pulse, hypotension, hemoconcentration, and moist rales.

**Chronic Exposure:** Depending on the concentration and duration of exposure, repeated or prolonged exposure may cause inflammatory and ulcerative changes in the mouth and possibly bronchial and gastrointestinal disturbances.

##### SKIN CONTACT:

**Acute Exposure:** Direct contact may cause severe irritation, redness, pain, and possibly burns.

**Chronic Exposure:** Effects depend on concentration and duration of exposure. Repeated or prolonged contact with metal salts may result in dermatitis with erythematous, papular, and granulomatous reactions in susceptible individuals or effects similar to acute exposure.

##### EYE CONTACT:

**Acute Exposure:** Direct contact may cause severe irritation, redness, pain, blurred vision, and burns, possibly severe. The degree of injury depends on the concentration and duration of contact. The full extent of the injury may not be immediately apparent.

**Chronic Exposure:** Effects depend on concentration and duration of exposure. Repeated or prolonged contact may result in conjunctivitis or effects as in acute exposure.

##### INGESTION:

**Acute Exposure:** Ingestion may cause a burning pain in the mouth and throat, fever, nausea, violent vomiting with severe abdominal pain, watery or bloody diarrhea, prostration, tenesmus, retching, hyperglycemia, anuria, liver damage, kidney damage with albuminuria, acetonuria, and glycosuria, hypotension, sudden collapse, and convulsions.

**Chronic Exposure:** Depending on the concentration, repeated ingestion may cause effects as with acute ingestion. Reproductive effects have been reported in animals (anhydrous).



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## SECTION 12: ECOLOGICAL INFORMATION

**ENVIRONMENTAL IMPACT RATING (0-4):** No data available for this product

**ACUTE AQUATIC TOXICITY:** No data available for this produce

**DEGRADABILITY:** No data available for this product

**LOG BIOCONCENTRATION FACTOR (BCF):** No data available for this product

**LOG OCTANOL/WATER PARTITION COEFFICIENT:** No data available for this product

## SECTION 13: DISPOSAL INFORMATION

Observe all federal, state and local regulations when disposing of this product.

## SECTION 14: TRANSPORT INFORMATION

**DOT Shipping Name:** Environmentally hazardous substances, liquid, n.o.s. (Ammonium Hydroxide),  
Class 9, UN 3082, PG III, RQ

**DOT Hazard Class or Division:** 9

**DOT Identification Number:** UN 3082

**DOT Packing Group:** III

**DOT Reportable Quantity:** 3,425 lb/1,556 kg (Based on Ammonium Hydroxide)

**DOT Labeling Requirements:** Class 9

**DOT Packaging Authorizations:** Refer to

**Exceptions:** 49 CFR 173.155

**Non-Bulk Packaging:** 49 CFR 173.203

**Bulk Packaging:** 49 CFR 173.241

(2008 North American Emergency Response Guidebook, Guide Number 171.)



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## SECTION 15: REGULATORY INFORMATION

	TSCA STATUS (components):	Yes
40 CFR 302.4	CERCLA SECTION 103:	Yes
40 CFR 355.30	SARA SECTION 302:	Yes
40 CFR 355.40	SARA SECTION 304:	Yes
40 CFR 372.65	SARA SECTION 313:	Yes
29 CFR 1910.119	OSHA Process Safety:	No
	California Proposition 65:	No
40 CFR 370.21	SARA HAZARD CATEGORIES, SARA SECTIONS 311/312	
	ACUTE HAZARD:	Yes
	CHRONIC HAZARD:	No
	FIRE HAZARD:	No
	REACTIVITY HAZARD:	No
	SUDDEN RELEASE HAZARD:	No

## SECTION 16: OTHER INFORMATION

Individuals handling this product should be informed of the recommended safety precautions and should have access to this information.

This information relates to the specific product designated and may not be valid for such product used in combination with any other materials or in any other processes. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability, or completeness by TETRA Micronutrients or the MSDS preparer. It is the user's responsibility to satisfy themselves as to the suitability and completeness of such information for their own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

TETRA Micronutrients, reserves the right to refuse shipment of this product to any consumer who fails to demonstrate the ability to consistently handle and use it safely and in compliance with all applicable laws, rules and regulations. Such demonstration may require on-site inspection of any or all storage, processing, packaging and other handling systems that come in contact with it. Customers are responsible for compliance with local, state and federal regulations that may be pertinent in the storage, application and disposal of this product.