



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: Boric Acid ($H_3B O_3$) Compound with Monoethanolamine

TRADE NAMES/SYNONYMS: None

CHEMICAL FAMILY: Micronutrient Aqueous Polyborate Solution

MSDS CREATION DATE: 06 June 05

MSDS REVISION DATE: 14 NOV 08

SECTION 2: COMPOSITION, INFORMATION ON INGREDIENTS

The composition of this product is proprietary.

COMPONENTS: Boric Acid, Monoethanolamine and Water

CAS NUMBER: 26038-87-9 (Boric Acid), 141-43-5 (Monoethanolamine)

RTECS NUMBER: ZH5260000 (Zinc Sulfate), ZH1400000 (Zinc Chloride), BQ9625000 (Ammonium

PERCENTAGE: Proprietary

PROBABLE CONTAMINANT: Not known

SECTION 3: HAZARDS IDENTIFICATION

NFPA RATINGS: (SCALE 0-4): HEALTH=1, FIRE=0, REACTIVITY=0

EMERGENCY OVERVIEW: Clear to straw colored liquid with a strong ammonia odor. Maybe harmful if ingested but not expected to be a pathway in an agricultural/industrial environment. 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.

POTENTIAL HEALTH EFFECTS:

INHALATION:

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Short Term Effects: May cause irritation of the nasal membranes and upper respiratory tract.

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: Not expected to be a pathway in an agricultural/industrial environment. 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, jewelry, 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.

INGESTION: Dilute the product immediately with large amounts of water or milk and remove by gastric lavage unless the victim is already vomiting (Dreisbach, Handbook of Poisoning, 12th Ed.). Administration of gastric lavage should be performed by qualified medical personnel. If vomiting occurs, keep head lower than hips to prevent aspiration. Treat symptomatically and supportively. Get medical attention immediately.

SECTION 5: FIRE FIGHTING MEASURES

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

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or regular foam, as appropriate for surrounding material. For larger fires, use water spray, fog or regular foam (1996 North American Emergency Response Guidebook, RSPA P 5800.7, 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 sources.

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

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 personal protective equipment. Deny entry to nonessential personnel and isolate hazard. Wash thoroughly after handling. Use with adequate ventilation.

SECTION 7: HANDLING AND STORAGE

HANDLING: Wear goggles and gloves when handling. Keep from children, food and feed products.

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 container. Store away from incompatible materials.

SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

ENGINEERING CONTROLS: Not normally required.

RESPIRATORY PROTECTION: Not normally required. If vapors or dusts exceed acceptable levels, wear a MSHA/NIOSH approved pesticide respirator.

EYE PROTECTION: Chemical goggles or shielded safety glasses.

SKIN PROTECTION: Wear protective clothing: long-sleeves shirts and pants, hat, rubber boots and socks. Wear rubber or chemical-resistant gloves.

OSHA PEL 8 hr TWA

ACGIH TLKV-TWA

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Monoethanolamine

6 mg/m³7.5 mg/m³**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

APPEARANCE AND ODOR: Clear, colorless to pale yellow liquid with mild odor

SOLUBILITY: Soluble

SPECIFIC GRAVITY (Water = 1): 1.34g/ml

BULK DENSITY: 11.18 LBS/GAL

pH: 8.0 (neat)

VAPOR PRESSURE: Not established

BOILING POINT: >200°F/>93.4°C

PERCENT VOLATILE (by volume): Not applicable

EVAPORATION RATE (Butyl Acetate = 1): 1

Note: These physical data are typical value based on material tested by may vary from sample to sample.

These values should not be construed as a guaranteed analysis of any specific lot or as specification items.

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: Excessive heat

INCOMPATIBILITIES: Strong oxidizing agents and acids

HAZARDOUS DECOMPOSITION: Oxides of nitrogen and other unknown hazardous material may be formed in a fire situation

HAZARDOUS POLYMERIZATION: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE ORAL LD₅₀ (rat): >5000 mg/kg

ACUTE DERMAL LD₅₀ (rabbit): >5000 mg/kg

EYE IRRITATION (rabbit): May cause slight irritation

SKIN IRRITATION (rabbit): May cause slight irritation

INHALATION LC₅₀(rat): May cause respiratory tract irritation

SKIN SENSITIZATION (guinea pig): Not established

CARCINOGENIC POTENTIAL: None listed in OSHA, NTP, IARC or ACGIH



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SECTION 12: ECOLOGICAL INFORMATION

Drift or runoff may adversely affect non-target plants. Do not apply directly to water. Do not contaminate water when disposing of equipment wash water. Do not apply when weather conditions favor drift from target

SECTION 13: DISPOSAL INFORMATION

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

SECTION 14: TRANSPORT INFORMATION

DOT Shipping Description: NOT REGULATED BY USDOT

U.S. SURFACE FREIGHT CLASSIFICATION: FERTILIZING COMPOUNDS (MANUFACTURED FERTILIZERS), NOI, LIQUID (NMFC 68140, SUB 6: CLASS 70)

SECTION 15: REGULATORY INFORMATION

	TSCA STATUS (components):	No
40 CFR 302.4	CERCLA SECTION 103:	No
40 CFR 355.30	SARA SECTION 302:	No
40 CFR 355.40	SARA SECTION 304:	No
40 CFR 372.65	SARA SECTION 313:	No
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



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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. 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.