

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

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

PRODUCT: Zink-Gro® Powder
TRADE NAMES: Zink-Gro®, Zink-Gro® Powder, Zink-Gro® AS
SYNONYMS: Zinc Sulfate Monohydrate
CHEMICAL FAMILY: Inorganic Salt
MSDS CREATION DATE: 28 MAY 98
MSDS REVISION DATE: 08 AUG 08

SECTION 2: COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENTS: Zinc Sulfate Monohydrate
FORMULA: $ZnSO_4 \cdot H_2O$
CAS NUMBER: 7446-19-7 (Zinc Sulfate Monohydrate)
PERCENTAGE: 99% Zinc Sulfate Monohydrate
≤1% Water

SECTION 3: HAZARDS IDENTIFICATION

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

EMERGENCY OVERVIEW: White, free-flowing powder that may cause irritation to the skin and eyes (possibly severe). Product dusts may irritate respiratory tract. Harmful if swallowed.

POTENTIAL HEALTH EFFECTS:

INHALATION: May cause irritation of the nasal membranes and upper respiratory tract, possibly severe. Significant exposures may result in difficulty breathing, low blood pressure, dizziness, bluish skin color and lung congestion.

SKIN CONTACT: May cause irritation, possibly severe.

EYE CONTACT: Contact may cause irritation, possibly severe. Additional effects may include tearing and/or blurred vision.

INGESTION: May irritate or cause burns to digestive tract.. Significant exposures may cause effects such as fever, nausea, vomiting, diarrhea, stomach pain, blood in the stool, inability to urinate, low blood pressure, kidney damage, liver damage and convulsions.

LONG-TERM AND/OR DELAYED EFFECTS: Continued and prolonged overexposure may result in digestive disorder, kidney and/or liver damage.

CARCINOGEN STATUS:

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

SECTION 4: FIRST AID MEASURES

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INHALATION: Remove from exposure area to fresh air immediately. If breathing is difficult, oxygen may be administered by a qualified operator. Keep person warm and at rest. Get medical attention for irritation or any other symptom.

SKIN CONTACT: Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and rinse with water until no evidence of product remains. Get medical attention for irritation, burns or any other symptom.

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. Do not induce vomiting unless directed to do so by a doctor or other medical professional. If vomiting occurs, keep head lower than hips to prevent introduction of fluid into the lungs. Get medical attention immediately.

NOTE TO PHYSICIAN: The decision as to whether the severity of poisoning requires administration of any antidote and actual dose required should be made by qualified medical personnel. The antidote for poisoning from zinc salts is calcium disodium edetate (oral or IV). Dreisbach, Handbook of Poisoning, 12th Edition.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: None

AUTOIGNITION TEMPERATURE: Not determined

FIRE AND EXPLOSION HAZARD: Product burns only with great difficulty but will decompose in the heat of a fire. Containers involved in a fire may rupture (possibly explosively) releasing decomposition products.

EXTINGUISHING MEDIA: Use any standard agent suitable for surrounding structural fire or for other chemicals that may be involved.

FIREFIGHTING: Wear appropriate self contained positive pressure breathing apparatus. Move product from fire area if you can without risk. 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 and sulfur.

SECTION 6: ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL SPILL: Pick-up dry spills by scooping, shoveling or vacuuming and place into containers for reuse or disposal. Wear respirator, protective clothing and gloves. Keep unnecessary people away. Isolate hazard area and deny entry to avoid material dispersal. Do not allow product and/or runoff to enter sewers or waterways.

SECTION 7: HANDLING AND STORAGE

STORAGE: Store in a cool, dry place. Protect from exposure to fire.

NORMAL HANDLING: Avoid contact with skin and eyes. Do not breath product dusts. Wash thoroughly after handling.

SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS: No occupational exposure limits established by OSHA/ACGIH/NIOSH.

VENTILATION: Use of local exhaust is recommended at product transfer points and where dusty conditions exist.

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

EMERGENCY WASH FACILITIES: Where there is the potential that an employee's eyes and/or skin may be exposed to this product, the employer should provide an eye wash fountain and safety shower or another source of running water within the immediate work area.

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CLOTHING: Wear trousers and long sleeved shirt to avoid skin contact. Clean work clothing before taking them home (preferred) or launder separately from household laundry.

GLOVES: Wear cotton or canvas protective gloves to prevent contact with product. Use rubber gloves if it is likely that material may become moist or wet.

RESPIRATOR: For normal product handling, use any NIOSH approved air-purifying dust respirator. For extremely dusty conditions, the use of a full-face air purifying particulate respirator is recommended.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

DESCRIPTION:	White, free-flowing powder
MOLECULAR FORMULA:	ZnSO ₄ •H ₂ O
MOLECULAR WEIGHT:	179.46 161.44 (anhydrous form of Zinc Sulfate)
pH:	5.0 @ 10% solution
MELTING POINT:	Decomposes above 500°C (932°F)
WATER SOLUBILITY:	50% by weight
SOLVENT SOLUBILITY:	Insoluble in alcohol
SPECIFIC GRAVITY:	3.28

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: Stable under normal temperatures and pressures.

CONDITIONS TO AVOID: Avoid contact with strong oxidizers and/or excessive heat. Do not allow spilled material to contaminate water sources.

INCOMPATIBILITIES: Contact with strong oxidizers may result in a fire and explosion hazard.

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

POLYMERIZATION: Has not been reported to occur under normal temperatures and pressures but may occur in fire conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicological information listed below is for Zinc Sulfate (anhydrous).

ACUTE TOXICITY:

LD₅₀: 1710 mg/kg, oral, rat

LD₅₀: 245 mg/kg, oral, mouse

LOCAL EFFECTS: Solutions may be corrosive – inhalation, skin, eye, ingestion

EYES: dose – 420 ug; reaction: moderate (rabbit)

INHALATION: Inhalation of 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.

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

DELAYED/CHRONIC:

CARCINOGEN STATUS: Data not available. Some mutagenic screens have been run with mixed results.

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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. Prolonged ingestion of 33,000 mg/kg in drinking water resulted in severe anemia in mice.

SECTION 12: ECOLOGICAL INFORMATION

ACUTE AQUATIC TOXICITY:

LC₅₀ rainbow trout 4.76 MG/L/48HR, hard water/continuous flow conditions

LC₅₀ rainbow trout 4.6 ppm/96hr/fresh water/conditions of bioassay not specified

DEGRADABILITY: No data available

SECTION 13: DISPOSAL INFORMATION

Product (as shipped) is not a RCRA hazardous waste if discarded. Observe all federal, state and local regulations when disposing of this product.

SECTION 14: TRANSPORT INFORMATION

This product is not regulated in surface transportation in non-bulk quantities. The information below is for shipments exceeding 1,000 pounds in a single package, container, truck or railcar

US DOT SHIPPING NAME: Environmentally hazardous substances, solid, n.o.s. (Zinc Sulfate) 9, UN3077, PG III, RQ
US DOT HAZARD CLASS: 9 – Miscellaneous hazardous material
US DOT IDENTIFICATION NO.: UN 3077
US DOT PACKING GROUP: III
US DOT LABEL CODE: 9
REPORTABLE QUANTITY: 1,000 LBS (454 KG)

SECTION 15: REGULATORY INFORMATION

TSCA STATUS: All ingredients are listed on the TSCA Inventory of Chemical Substances
OTHER TSCA ISSUES: None
SARA 311 CLASSIFICATION: Acute Hazard
SARA 313 NOTIFICATION: There are no ingredients on the SARA 313 reporting list.
CERCLA RQs AND TPQs: Zinc Sulfate has a reportable quantity (RQ) of 1,000 lbs.
CALIFORNIA PROPOSITION 65 : No ingredients found on the Proposition 65 list.
CANADIAN INVENTORY: All ingredients are listed on the Canadian Domestic Substances List. Fertilizers are regulated under the Fertilizer Act.
WHMIS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations. Classification: D2B

SECTION 16: OTHER INFORMATION

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



Zink-Gro® Powder
SUPERSEDES 22 MAR 05

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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.