



KUGLER

KS MICROMAX

MATERIAL SAFETY DATA SHEET

KS MICRO MAX 0.5% Cu, 1.0% Fe, 2.0% Mn, 2.0% Zn, 0.025% Boron

Date of Preparation: March 7, 2006

Section 1 - Chemical Product and Company Identification

Product: KS MICRO MAX 0.5% Cu, 1.0% Fe, 2.0% Mn, 2.0% Zn, 0.025% Boron
Chemical Name: Micronutrient Chelate Solution
Chemical Formula: NA
CAS Number: NA
General Use: Plant Nutrients
Manufacturer: **KUGLER COMPANY**
PO Box 1748
McCook, NE 69001
308-345-2280
www.kuglercompany.com

Section 2 - Typical Composition

Ingredients:	Percent	CAS Number
A proprietary blend of Micronutrient chelates in an aqueous solution.	100	-

Section 3 - Physical and Chemical Properties

Physical State: Liquid
Appearance and Odor: Brown solution, odorless.
Vapor Pressure: NA
Vapor Density (Air=1): NA
Specific Gravity (H₂O=1): 1.214 - 1.224
Water Solubility: Freely Soluble
Boiling Point: 200 F
Freezing Point: Below 32 F
% Volatile: NA

Section 4 - Fire-Fighting Measures

Flash Point: NA
Flash Point Method: NA
LEL: NA
UEL: NA
Flammability Classification: NA
Extinguishing Media: Use extinguishing media appropriate for surrounding materials.
Unusual Fire or Explosion Hazards: None

Hazardous Decomposition Products: Metal oxides, nitrogen oxides, and ammonia.

Fire-Fighting Instructions: Do not release contaminated runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Because fire may produce hazardous decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face-piece operated in pressure-demand or positive-pressure mode.

Section 5 - Stability and Reactivity

Stability: Stable under normal storage and handling conditions.

Polymerization: Hazardous polymerization will not occur.

Chemical Incompatibilities: NA

Conditions to Avoid: Evaporation to dryness.

Section 6 - Health Hazard Information

POTENTIAL HEALTH EFFECTS

Primary Entry Routes: Inhalation (of mist), Ingestion, Eye Contact, Skin Contact (irritation)

Acute Effects:

Inhalation: May cause irritation of respiratory tract.

Eye: Contact may cause irritation.

Skin: Contact may cause irritation.

Ingestion: Ingestion may cause irritation of the gastrointestinal tract, cramps, vomiting, convulsions, or diarrhea.

Carcinogenicity: IARC, NIP, and OSHA do not list this product as a carcinogen.

Medical Conditions Aggravated by Long-Term Exposure: Existing skin and lung disorders may be aggravated by exposure.

Chronic Effects: Chronic ingestion may cause damage to heart, liver, and blood-forming tissues. Ingestion of large quantities may cause headache, mental impairment, dizziness, and may be fatal.

EMERGENCY AND FIRST AID PROCEDURES

Inhalation: Remove from areas of mist exposure, if irritation persists, seek medical attention.

Eye Contact: Wash eyes immediately and thoroughly (15 minutes) with eyewash. If irritation persists, seek medical attention.

Skin Contact: Wash skin promptly to remove material. If irritation persists, seek medical attention.

Ingestion: Drink milk or large amounts of water and get medical attention. If prompt medical attention is not available, call your local Poison Control Center.

Section 7 - Spill, Leak, and Disposal Procedures

Spill/Leak Procedures:

Small Spills: Absorb with sand or other inert material and dispose of in accordance with applicable regulations.

Large Spills:

Containment: For large spills, dike far ahead of liquid spill for later disposal, Do not release into sewers or waterways.

Cleanup: Contained materials may be salvaged for use.

Regulatory Requirements: Follow applicable 051-IA regulations for cleanup personnel and EPA requirements for disposal.

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations if material is not salvageable for use.

Disposal Regulatory Requirements: Follow applicable Federal, state, and local regulations.

Container Cleaning and Disposal: Triple rinse and use rinseate in product tank. Dispose of container per applicable regulations.

Ecological Information: This product contains copper compounds that exhibit aquatic plant and fish toxicity characteristics.

EPA Regulations:

SARA 311/312: This product exhibits acute and chronic effects per 1910.1200 and may require reporting under SARA 311/312.

SARA 313 Toxic Chemical (40 CFR 372.65): This product contains 3.1% by weight of copper compounds, 6.25% by weight of manganese compounds, and 16.7% by weight of zinc compounds.

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed

OSHA Regulations:

Air Contaminant (20 CFR 1910.1000, Table Z-1): Copper compounds (mist): PEL = 1 mg/m³

Manganese compounds: C = 5 mg/m³

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs.

ADMINISTRATIVE CONTROLS:

Respiratory Protection: Respiratory protection may be needed if airborne mists are created. Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. *Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing Equipment: Wear chemically protective gloves to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133).

Safety Stations: Make emergency eyewash stations, emergency showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9 - Special Precautions and Comments

Handling Precautions: Use in accordance with labeling instructions. Keep away from children, pets, domestic animals, and wildlife.

Storage Requirements: Store in properly labeled containers. Keep from freezing.

DOT Transportation Data (49 CFR 172.101):
Not Regulated as a DOT Hazardous Material (4/98)