

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Bio MP[®] 5-3-2

MSDS No.: 99-57622, 57623

Date of Preparation: 07/19/97

Date of Revision: 11/25/02

NFPA HAZARD RATINGS: Health (1) Fire (1) Reactivity (0)

(0) least (1) slight (2) moderate (3) high (4) extreme

Section 1-CHEMICAL PRODUCT and COMPANY IDENTIFICATION

General Product Composition: Urea, potassium nitrate, potassium phosphate, phosphoric acid, propionic acid, molasses, iron sulfate, manganese sulfate, zinc sulfate. **Intended Use:** Turf Management **Manufactured For:** Spindler Enterprises, Inc., P.O. Box 6112, Lakeland, FL 33808 **Phone:** (863) 619-9822. **Emergency Telephone:** CHEMTREC 1-800-424-9300.

Section 2-COMPOSITION/INFORMATION on INGREDIENTS

HAZARDOUS INGREDIENT NAME	FORMULA	CAS No.	% Wt
Phosphoric Acid	H ₃ PO ₄	7664-38-2	
Iron sulfate	FeSO ₄	7720-78-7	
Manganese sulfate	MnSO ₄	7785-87-7 79-09-4	
TRACE IMPURITIES			
Propionic acid	C ₃ H ₆ O		

EXPOSURE LIMITS (see section 8)

Section 3-HAZARDS IDENTIFICATION

Primary Entry Routes: Eyes, skin, ingestion. **Target Organs:** Eyes, skin, respiratory system, liver, gastrointestinal tract. **Acute Effects:** *Inhalation:* Repeated or prolonged inhalation may cause respiratory irritation. *Eye:* May cause irritation, burning and/or redness. *Skin:* May cause irritation burning and or redness. *Ingestion:* May be harmful if swallowed. May cause abdominal cramps, nausea, vomiting and/or diarrhea. **Carcinogenicity:** IARC: NO; NTP: NO; OSHA: NO

Medical Conditions Aggravated by Long-Term Exposure: Persons with existing skin lesions or respiratory health problems should exercise caution when using or handling. These individuals should also avoid all contact with possible spray mist. **Chronic Effects:** prolonged contact with eye may cause serious injury. Prolonged or repeated skin contact may cause dermatitis. Ingestion may be harmful or fatal.

Section 4-FIRST AID MEASURES

Inhalation: Remove to fresh air. **Eye Contact:** Hold eyelids open and flush eyes with plenty of water for at least 15 minutes. Seek medical attention if irritation develops. **Skin Contact:** Remove contaminated shoes and clothing. Wash affected area with mild soap and water. Seek medical attention if irritation develops. Launder contaminated clothing and clean contaminated shoes before reuse. **Ingestion:** If victim is conscious and alert, give 2 or 3 glasses of water to drink. Induce vomiting by touching back of throat with finger. Seek immediate medical attention. **After first aid, get appropriate in-plant, paramedic, or community medical support.** **Note to Physicians:** No specific antidote available. Treat symptomatically. **Special Precautions/Procedures:** Product contains phosphoric acid and (in small quantities) propionic acid. These acids in pure form can cause severe burns to eyes and skin and could be fatal if ingested.

Section 5-FIRE FIGHTING MEASURES

Flash Point: ND **Flash Point Method:** ND **Burning Rate:** ND **Auto ignition Temperature:** ND **Flammability Classification:** Non-Flammable. **Extinguishing Media:** Water Spray, dry chemical, alcohol foam, carbon dioxide. **Unusual Fire or Explosion Hazards:** Containers exposed to fire may rupture violently. Keep containers cool with water spray. **Hazardous Combustion Products:** Oxides of carbon, nitrogen, and phosphorus. **Fire-Fighting Instructions:** Firefighters should wear full protective equipment approved and self contained breathing apparatus. Prevent runoff from entering water systems. Keep non-essential personnel out of fire area and out of fumes and vapors.

Section 6-ACCIDENTAL RELEASE MEASURES

Spill/leak procedures: Small spills: Wear protective equipment. Prevent spill from entering water systems. Absorb spill on inert material such as clay, vermiculite or kitty litter. Place absorbed material into labeled container for proper disposal. **Large spills:** Dike to prevent spill from entering water systems. **Cleanup:** If spill is major proportions, soil may need to be excavated.

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Section 7- HANDLING and STORAGE

Handling Precautions: Avoid contact with skin, eyes, and clothing. Do not take internally. Wash after handling. Do not contaminate water by disposal of equipment wash waters. **Storage Requirements:** Store in a cool, dry area preferably locked and out of reach of children and animals

Section 8-EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use in open outdoor areas only. **Respiratory Protection:** In confined areas, select NIOSH/MSMA approved equipment. **Administrative controls:** Protective Clothing and equipment: **Safety glasses/goggles recommended. Impervious boots recommended. Safety Stations:** Contaminated equipment:

EXPOSURE GUIDELINES:

	OSHA PEL	ACGIH TLV	NIOSH REL	NIOSH			
Ingredient	TWA STEL	TWA STEL	TWA STEL	IDLH			
Phosphoric acid	1mg/M ³ NA	1mg/M ³ 3mg/M ³	1mg/M ³ 3mg/M ³	1,000mg/M ³			
Iron sulfate	NA NA	1mg/M ³ 2mg/M ³	1mg/M ³ NA	NA			
Manganese sulfate	NA NA	5mg/M ³ NA	NA NA	NA			
Propionic acid	NA NA	10 ppm 15 ppm	10 ppm 15ppm	NA			

Section 9-PHYSICAL/CHEMICAL PROPERTIES

Physical State: Liquid. **Molecular weight:** ND **Other solubility:** ND **Softening point:** NA **Appearance & Odor:** Dark, free flowing liquid, with molasses-like odor. **Melting Point:** NA **Boiling Point:** ND **Viscosity:** 200-1,000 cps @ 70° F **Heat Value:** ND **Surface Tension:** ND **Vapor Pressure:** ND **%Volatile:** ND **Evaporation Rate:** ND **Vapor Density (Air=1):** ND **Solubility in Water:** soluble **Density:** 10.8-12.0 **Specific Gravity (H₂O=1 @ 4°C):** ND **PH:** 2.1-2.9

Section 10-STABILITY AND REACTIVITY

Stability: Stable under normal conditions of use and storage. **Polymerization:** NO. **Chemical Incompatibilities:** Oxidizing Agents. May be corrosive to certain metals. **Conditions to Avoid:** Extreme heat, open flames, sparks. **Hazardous Decomposition Products:** Oxides of nitrogen, carbon and phosphorus.

Section 11-TOXICOLOGICAL INFORMATION

Eye Effects/Skin Effects: Two of the components of this product, phosphoric acid and propionic acid, in pure form are corrosive to eyes and skin and may be fatal if ingested. **Toxicity Data** (See NIOSH, RTECS for additional toxicity data). **Acute Inhalation Effects:** ND **Acute oral Effects:** ND **Chronic Effects:** ND* **Mutagenicity:** ND* **Teratogenicity:** ND*
*Similar products do not show carcinogenic, mutagenic or teratogenic potential.

Section 12-ECOLOGICAL INFORMATION

Ecotoxicity: Accidental spills of undiluted product may cause vegetation kills. **Environmental Fate:** Keep out of any body of water. **Environmental Degradation:**

Section 13-DISPOSAL CONSIDERATIONS

Disposal: Consult local, state or federal regulatory agencies for acceptable disposal procedures and locations. Disposal in waterways or sewers may be prohibited. Disposal in waterways or sewers may be prohibited.

Section 14-TRANSPORT INFORMATION

DOT Transportation Data (49 CFR 172.101): Shipping Name: Not Regulated.

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Section 15-REGULATORY INFORMATION

EPA Regulations: Not regulated by EPA under FIFRA or FQPA. **TSCA:** All functional components of this product are listed on TSCA Inventory. **State Regulations:** The following chemicals are regulated under CA Prop. 65: 1,4-Dioxane (Cancer List); Ethylene Oxide (Cancer & Reproduction Lists); Propylene Oxide (Cancer List). The following chemicals are listed on the RTK Laws of CA, FL, NJ & MN: 1,4-Dioxane, Ethylene Oxide and Propylene Oxide. Check with specific state authorities since regulations vary within the states. **SARA Title III;-Sections 311/312: Immediate (Acute) Health(N), Delayed (Chronic) Health(Y), Fire(Y), Sudden Release of Pressure(N), Reactivity(N).**

Section 16-OTHER INFORMATION

DISCLAIMER: The information on this MSDS was obtained from current and reliable sources intended for persons having related technical skills. However, the data is provided without warranty, expressed or implied, regarding its correctness or accuracy. It is the users responsibility to determine safe conditions for use of the product and to assume liability for loss, injury, damage, or expense resulting from improper use.

ND= Not Determined; NA= Not Applicable; NIA= No Information Available