MATERIAL SAFETY DATA SHEET
PRODUCT NAME: IRON PLUS MN (12-0-0)

MSDS No.: 99-57198 Date of Preparation: 05/29/97 Date of Revision: 12/3/02
NFPA HAZARD RATINGS: Health (3) Fire (0) Reactivity (0) (0) least (1) slight (2) moderate (3) high (4) extreme

Section 1-CHEMICAL PRODUCT and COMPANY IDENTIFICATION

General Product Composition: Proprietary Polymerous Hydrosol Leachate with Citric and Fulvic Acids, Iron, Sulfur, Manganese and Urea Nitrogen. **Intended Use:** Turf Management. Manufactured for: **Spindler Enterprises, Inc., P.O. Box 6112, Lakeland, Fl. 33807.** Phone: (863) 619-9822. **Emergency Telephone: CHEMTREC 1-800-424-9300.**

Section 2-COMPOSITION/INFORMATION on INGREDIENTS

HAZARDOUS INGREDIENT NAME	FORMULA	CAS No.
Urea	$CO(NH_2)_2$	57-13-6
Manganese Sulfate	$MnSO_4$	7785-87-7
Ferrous Sulfate	$FeSO_4$	7720-78-7

TRACE IMPURITIES: Organic acids and biostimulants derived from composting. **EXPOSURE LIMITS: ((REFER TO SECTION 8))**

Section 3-HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Potential Health Effects: **Primary Entry Routes:** Skin, eyes, ingestion, inhalation. **Target Organs:** Eyes, skin, gastrointestinal tract, respiratory tract. **Acute Effects:** **Inhalation:** Repeated or prolonged inhalation may cause irritation of respiratory tract. **Eye:** Causes severe eye burns. May cause irreversible eye injury. **Skin:** May cause severe skin irritation. May cause skin burns. May cause deep penetrating ulceration of skin. **Ingestion:** Causes gastrointestinal tract burns. May cause perforation of digestive tract. Carcinogenicity: **IARC:** NO, **NTP:** NO, **OSHA:** NO. **Medical Conditions Aggravated by Long-Term Exposure:** Serious eye and/or skin burning. **Chronic Effects:** Repeated inhalation may cause chronic bronchitis.

Section 4-FIRST AID MEASURES

Inhalation: Immediately remove from exposure to fresh air. Get medical assistance. **Eye Contact:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting upper and lower lids. Get immediate medical assistance. Do not allow victim to rub or keep eyes closed.
Skin Contact: Remove any contaminated clothing or shoes. Wash skin with plenty of gentle soap and water. Get immediate medical assistance. Launder cloths before reuse. **Ingestion:** DO NOT INDUCE VOMITING. Give 2 or 3 glasses of water to drink and get immediate medical attention. *After first aid, get appropriate in-plant, paramedic, or community medical support.* **Note to Physicians:** Treat symptomatically and supportively. No specific antidote. **Special Precautions/Procedures:** None known.

Section 5-FIRE FIGHTING MEASURES

Flash Point: NA. **Flammability Classification:** Non flammable. **Extinguishing Media:** Water spray, dry chemical, or 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 nitrogen and sulfur; hydrogen sulfide. **Fire-Fighting Instructions:** Fire fighters should wear full protective equipment and self-contained breathing apparatus. Prevent runoff from entering water systems. Keep non-essential personnel out of fire area.

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 of major proportions, soil may need to be excavated.

Section 7- HANDLING and STORAGE

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

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Section 8-EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use in open, outdoor areas only. **Respiratory Protection:** In confined areas, NIOSH/MSMA approved respirator. **Protective Clothing/Equipment:** Safety glasses/goggles/face shield, impervious gloves, clothing and boots strongly recommended.

EXPOSURE GUIDELINES: *{Numbers represent mg/M^3 unless otherwise indicated}.*

	OSHA PEL		ACGIH TLV		NIOSH REL	
Ingredient	TWA	STEL	TWA	STEL	TWA	STEL
Ferrous Sulfate	NA	NA	1	NA	1	2
Manganese Sulfate	NA	NA	5	NA	NA	NA

Section 9-PHYSICAL/CHEMICAL PROPERTIES

Physical State: Liquid. **Solubility in Water:** Soluble. **Density:** 11.0 lbs. per gal.
Specific Gravity (@ 68°F): 1.319. **pH (@ 68°F):** 2.0.

Section 10-STABILITY AND REACTIVITY

Stability: Stable under normal conditions of use and storage. DO NOT FREEZE. **Polymerization:** NO. **Chemical Incompatibilities:** Alkalies.
Conditions to Avoid: Extreme heat. Do not freeze. **Hazardous Decomposition Products:** Oxides of nitrogen and sulfur; hydrogen sulfide.

Section 11-TOXICOLOGICAL INFORMATION

No lab tests for this product on the following: Eye Effects, Skin Effects, Acute Inhalation Effects, Acute Oral Effects, Chronic Effects, Carcinogenicity, Mutagenicity & Teratogenicity.

Section 12-ECOLOGICAL INFORMATION

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

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.

Section 14-TRANSPORT INFORMATION

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

Section 15-REGULATORY INFORMATION

EPA Regulations: Not regulated by EPA under FIFRA or FQPA. **OSHA Regulations:** Refer to sections 2 & 8. **State Regulations:** Urea appears on the CA & MN RTK Chemical Lists; ferrous sulfate appears on the CA & NJ RTK Chemical Lists; manganese sulfate appears on the CA RTK Chemical List. Check with specific state authorities since regulations vary within the states. **Other Regulations:** Ferrous sulfate is a Section 304 chemical (CERCLA RQ=1,000 lbs.). **SARA Title III; Sections 311/312: Sudden Release of Pressure (N), Reactivity (N), Fire (N), Immediate (Acute) Health (Y), Delayed (Chronic) Health (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.