

MATERIAL SAFETY DATA SHEET

GENERAL HYDROPONICS HARDWATER FLORAMICRO™ 3/7/09

SECTION 1. MATERIAL IDENTIFICATION

Product Name: Hardwater FloraMicro™

Chemical Family: A mixture of plant nutrition minerals in aqueous solution

Product Use: Hydroponic plant nutrient for use in hard water

Manufactured by: General Hydroponics, 3789 Vine Hill Rd. Sebastopol CA 95472 (707) 824-9376
Fax: (707) 824-9377

For Emergency Day or Night Call: CHEMTREC – Domestic North America 800-424-9300,
International 703-527-3887 (collect calls accepted)

SECTION 2. INGREDIENTS AND OCCUPATIONAL EXPOSURE LIMITS

Ingredients: Hardwater FloraMicro™ is an especially formulated mixture of chemicals that are mixed in proportions to assure excellent plant nutrition. The product is an aqueous, inorganic, nitrate solution. The chemical identity of the compounds and exact proportions used in the mixture are a trade secret; however, they are derived from: ammonium molybdate, calcium nitrate, cobalt nitrate, copper nitrate, potassium nitrate, zinc nitrate, urea, potassium borate, calcium carbonate, manganese EDTA, iron EDDHA, and iron DPTA.

Exposure Limits: Some of the chemicals used in Hardwater FloraMicro™, when inhaled in a powder form, are known to be irritants to the upper respiratory tract. OSHA has established a PEL for an eight hour time-weighted average of 5 mg/m³ (respirable fraction) or 15 mg/m³ eight hour time-weighted average (total dust). ACGIH has established a 10 mg/m³ eight hour time-weighted average threshold limit value for exposure to chemicals in this category. As long as these chemicals remain in aqueous solution and do not become aerosolized, they are not an inhalation hazard.

SECTION 3. HAZARDS IDENTIFICATION

*** Emergency Overview ***

**STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.
HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN.
CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.**

NFPA Ratings:

Health: 1 Flammability: 0 Reactivity: 3 Oxidizer

Potential Health Effects

Primary Entry Routes: ingestion, inhalation

Target Organs: Gastrointestinal system, blood system, skin, mucous membranes

Ingestion: Gastrointestinal irritation, possible methemoglobinemia.

Eye: Irritation

Skin: None.

Inhalation: Irritation

Carcinogenicity: IARC, NTP, and OSHA do not list as a carcinogen.

Medical Conditions Aggravated by Long- Term Exposure: Unknown

Chronic Effects: Repeated or prolonged exposure to some ingredients can produce target organ damage.

Other: None

SECTION 4. FIRST AID MEASURES

Ingestion: Do not induce vomiting. Loosen tight clothing, such as collar, tie, belt and waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Eye Contact: Do not allow victim to rub or keep eyes tightly shut. Remove contact lenses, then gently lift eyelids and flush immediately and continuously with flooding amounts of water for at least 15 minutes. Consult a physician or ophthalmologist if pain or irritation develops.

Skin Contact: Wash exposed area with soap and water. For reddened or blistered skin, consult a physician.

Inhalation: Remove exposed person to fresh air and support breathing, if necessary. Consult a physician as soon as possible.

After first aid: Get appropriate community medical support.

SECTION 5. FIRE AND EXPLOSION DATA

Flash Point: Unknown

Auto-ignition Temperature: Unknown

LEL: Unknown

Flammability Classification: May be combustible at high temperatures.

Burning Rate: Unknown

Extinguishing Media: Use dry chemical, carbon dioxide, water spray, fog, or foam.

Unusual Fire or Explosion Hazards: Can accelerate burning.

Hazardous Combustion Products: Can decompose explosively in a fire.

Fire-Fighting Instructions: Contains oxidizing material. Do not use water jet. Use flooding quantities of water. Avoid contact with organic materials. Do not release run-off from fire control methods to sewers or waterways.

Fire Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full-face piece.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Spill /Leak Procedures: Wipe up with absorbent towels or mop, avoid contact with organic materials.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

SECTION 7. HANDLING AND STORAGE

Handling Precautions: Avoid ingestion and inhalation. Wear an appropriate NIOSH-approved respirator for protection against mists where mists levels are excessive. Respirator usage must be in accordance with OSHA requirements (29 CFR 1910.134).

Storage Requirements: Separate from flammable and combustible materials, as well as from reducing agents such as zinc, alkaline metals, and formic acid.

Regulatory Requirements: Follow applicable OSHA regulations

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Provide general or local exhaust ventilation systems to maintain airborne concentrations as low as possible.

Administrative Controls: Avoid breathing mist.

Respiratory Protection: If this product is used as directed, respiratory protection is not required. 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. 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: No special clothing is required.

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. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Aqueous solution

Specific Gravity: 1.108

pH 5.6

Appearance and Odor: Dark brown liquid with no odor

Odor Threshold Range: Unknown

Vapor Pressure: Unknown

Water Solubilities: Soluble

Other Solubility's: Unknown

Boiling Point 217⁰ F

Freezing Point: 30⁰ F

Viscosity: Unknown

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable at room temperature in closed containers, under normal storage and handling conditions. Unstable at high temperatures

Polymerization: Hazardous polymerization cannot occur.

Chemical Incompatibilities: Oil, organic solvents

Conditions to Avoid: Mixture with combustible materials, high temperatures

Hazardous Decomposition Products: At extreme temperatures, CO or phosphorous oxide may be evolved.

SECTION 11. TOXICOLOGICAL INFORMATION

Not believed to be toxic

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity: Unknown

Environmental Fate: Not expected to be significant

Environmental Degradation: Unknown

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal: Follow federal, state, and local regulations.

SECTION 14. TRANSPORTATION INFORMATION

DOT Transportation Data (49 CFR 172.101): Nitrates, Inorganic aqueous solution. Concentrations of Hardwater FloraMicro™, at the minimum temperature encountered during normal transportation, will not exceed 80% of the saturation limit. It is exempt from labeling (see code 58 of 49 CFR 172.102).

SECTION 15. REGULATORY INFORMATION

EPA Regulations: Not listed

SECTION 16. OTHER INFORMATION

General Hydroponics Hardwater FloraMicro™ is a plant nutrition product. Information assembled for this Material Safety Data Sheet is for the use of this product as intended by the manufacturer. Users should take all precautions recommended herein while working with this product.

General Hydroponics provides the information contained herein in good faith, but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in using this product.