

## 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/m<sup>3</sup> (respirable fraction) or 15 mg/m<sup>3</sup> eight hour time-weighted average (total dust). ACGIH has established a 10 mg/m<sup>3</sup> 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** 217<sup>0</sup> F

**Freezing Point:** 30<sup>0</sup> 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.