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MATERIAL SAFETY DATA SHEET

GENERAL HYDROPONICS FLORANOVA GROW™

1/9/05

SECTION 1. MATERIAL IDENTIFICATION

Product Name: FloraNova Grow™

Chemical Family: Plant food minerals and non-plant food mixture in aqueous solution

Product Use: Hydroponic plant nutrient to stimulate vigorous roots, stems, and foliage.

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

For Chemical Emergency

Spill Leak Fire Exposure or Accident:

Call CHEMTREC Day or Night

DOMESTIC NORTH AMERICA 800-424-9300

INTERNATIONAL, CALL 703-527-3887 (collect calls accepted)

SECTION 2. INGREDIENTS AND OCCUPATIONAL EXPOSURE LIMITS

Ingredients: FloraNova Grow™ is an especially formulated mixture, mixed in proportions to stimulate vigorous roots, stems, and foliage. The exact proportions used in the mixture are a trade secret. The product is derived from ammonium molybdate, ammonium phosphate, calcium nitrate, potassium nitrate, potassium phosphate, potassium borate, magnesium sulfate, cobalt sulfate, copper sulfate, manganese sulfate, zinc sulfate, iron DTPA, and 0.1% humic extracts derived from leonardite.

Exposure Limits: There are no established exposure limits to FloraNova Grow™. Some of the chemicals used in FloraNova Grow™, are harmful if swallowed, and may cause irritation to the skin, eyes, and respiratory tract. When these chemicals remain in aqueous solution and are not aerosolized, they are not an inhalation hazard.

SECTION 3. HAZARDS IDENTIFICATION

*** Emergency Overview ***

CAUTION! MAY BE HARMFUL IF SWALLOWED, MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

Potential Health Effects

Ingestion: Ingestion can cause severe gastrointestinal distress with abdominal pain, nausea, vomiting, and diarrhea.

Eye: Can cause irritation, redness, and pain.

Skin: Can cause irritation to the skin. Symptoms can include redness, itching, and pain.

Inhalation: Causes irritation to the respiratory tract. Symptoms may include coughing and shortness of breath.

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 cause methemoglobinemia, cyanosis, and convulsions.

Other: None

Section 4. FIRST AID MEASURES

Ingestion: Seek medical attention as soon as possible. If victim is conscious and alert, give 2 to 4 cupfuls of water. Never give anything by mouth to an unconscious person.

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: Flush exposed area with soap and water for at least 15 minutes. If irritation persists, consult a physician. Remove contaminated clothing, and wash clothing before reuse.

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

After First Aid: Get appropriate community medical support.

SECTION 5. FIRE AND EXPLOSION DATA

Flammability Classification: FloraNova Grow™ is not combustible. However, some components are powerful oxidizers and can initiate and intensify combustion of flammable materials.

Flash Point: Unknown

Auto-ignition Temperature: Unknown

LEL: Unknown

Burning Rate: Unknown

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

Unusual Fire or Explosion Hazards: Can accelerate burning. Container may explode in heat of fire.

Hazardous Combustion Products: Can decompose explosively in a fire.

Fire-Fighting Instructions: Contains oxidizing material. Do not use water jet. Keep fire-exposed containers cool with water spray. Remove containers from the fire area, if it can be done safely. 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, skin contact, eye contact, and inhalation

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.

Eye Protection: When handling FloraNova Grow™, protective eyewear or goggles should be worn per OSHA regulations (29 CFR 1910.134). Contact lenses pose a special hazard. Soft lenses may absorb irritants, and all contact lenses concentrate irritants. Particles may adhere to contact lenses and cause corneal damage.

Protective Clothing: Wear, when the possibility of skin or clothing contamination may exist. Wear neoprene or nitrile gloves when directly handling the product.

Safety Stations: Eye wash stations, quick drench showers, and washing facilities should be readily accessible to workers handling large quantities of FloraNova Grow™

Contaminated Equipment: Remove this material from shoes and equipment. Launder contaminated clothing before wearing.

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: liquid

Molecular weight: unknown

Specific Gravity: 1.5

pH: 2

Appearance and Odor: Brown liquid with sweet vanilla-like odor

Vapor Pressure: Unknown

Water Solubility: 100%

Other Solubility: Unknown

Freezing Point: Unknown

Viscosity: Unknown

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable at room temperature in closed containers, under normal storage and handling conditions. FloraNova Grow™ is unstable at high temperatures.

Polymerization: Hazardous polymerization does not occur.

Chemical Incompatibilities: FloraNova Grow™ contains chemicals that are strong oxidizing agents that react with strong alkalis to liberate ammonia. They may also react vigorously with reducing materials, oil, and organic solvents.

Conditions to Avoid: Mixture with combustible materials, high temperatures.

Hazardous Decomposition Products: Oxides of nitrogen and toxic metal fumes and irritating gases may be evolved when heated to decomposition.

Polymerization: Hazardous polymerization does not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

Some chemicals in FloraNova Grow™ are toxic by ingestion, inhalation, or dermal contact. None of its ingredients are listed as carcinogens.

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): Ammonium Nitrate Fertilizer -- UN 2071, label Code 9, Packing Group III.

SECTION 15. REGULATORY INFORMATION

EPA Regulations: Not listed

SECTION 16. OTHER INFORMATION

General Hydroponics FloraNova Grow™ 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.