genhydro.com

Date : 07/15/2012
Version : 1

Material Safety Data Sheet

FloraGro™ Advanced Nutrient System

1. Product and company identification

Product name : FloraGro™ Advanced Nutrient System

Chemical family : Nitrates, and inorganic minerals in aqueous solution.

Material uses : Hydroponic plant nutrient.

Supplier/Manufacturer : General Hydroponics
3789 Vine Hill Rd. Sebastopol CA 95472
Tel: (707) 824-9376
Fax: (707) 824-9377

MSDS authored by : KMK Regulatory Services Inc.

In case of emergency : CHEMTREC, U.S. : 1-800-424-9300
International: +1-703-527-3887 (collect calls accepted)

2. Hazards identification

Emergency overview

Physical state : Liquid. [Aqueous solution.]

Color : Green.

Odor : Odorless.

Signal word : DANGER!

Hazard statements : OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CAUSES EYE AND SKIN IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. CAN CAUSE TARGET ORGAN DAMAGE. SUSPECT CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER.

Precautionary measures : Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Do not breathe vapor or mist. Use only with adequate ventilation. Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Keep away from clothing and other combustible materials. Store in tightly-closed container. Keep container tightly closed. Use personal protective equipment as required. Wash thoroughly after handling.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation : Slightly irritating to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : Ingestion can cause severe gastro-intestinal distress, with abdominal pain, nausea, vomiting, and watery or bloody diarrhea.

Skin : Irritating to skin.

Eyes : Irritating to eyes.

Potential chronic health effects

Chronic effects : Can cause target organ damage.

Carcinogenicity : Contains material which may cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

2. Hazards identification

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Target organs : Causes damage to the following organs: blood, mucous membranes, cardiovascular system, skin, eyes.
Contains material which may cause damage to the following organs: upper respiratory tract.

Over-exposure signs/symptoms

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Ingestion : No specific data.

Skin : Adverse symptoms may include the following:
irritation
redness

Eyes : Adverse symptoms may include the following:
pain or irritation
watering
redness

Medical conditions aggravated by overexposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

3. Composition/information on ingredients

Name	CAS number	%
Potassium nitrate	7757-79-1	10 - 30
Phosphoric acid, ammonium salt	7722-76-1	1 - 5
Magnesium nitrate, hexahydrate	13446-18-9	0.1 - 1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5. Fire-fighting measures

Flammability of the product : This material increases the risk of fire and may aid combustion. In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
nitrogen oxides
sulfur oxides
phosphorus oxides
metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Use spark-proof tools and explosion-proof equipment. Dispose via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Use spark-proof tools and explosion-proof equipment. Dispose via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Avoid exposure - obtain special instructions before use. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from combustible material. Empty containers

7. Handling and storage

retain product residue and can be hazardous. Do not reuse container.

Storage : See NFPA 430, Code for the Storage of Liquid and Solid Oxidizers. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Separate from reducing agents and combustible materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Ingredient	Exposure limits
Phosphoric acid, ammonium salt	**ACGIH TLV (United States).** TWA: 5 mg/m³ 8 hour(s).

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

Physical state : Liquid. [Aqueous solution.]
Color : Green.
Odor : Odorless.
pH : 3.5
Boiling/condensation point : 101°C (213.8°F)
Melting/freezing point : -1°C (30.2°F)
Relative density : 1.108
Solubility : Easily soluble in the following materials: cold water and hot water.

10. Stability and reactivity

Chemical stability : The product is stable.
Conditions to avoid : Evaporating to near dryness. Mixture with combustible materials. High temperatures and flame.
Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials, reducing materials, organic materials, acids and alkalis.
Slightly reactive or incompatible with the following materials: moisture.
Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Possibility of hazardous reactions : Hazardous reactions or instability may occur under certain conditions of storage or use.
Conditions may include the following:
contact with combustible materials
Reactions may include the following:
risk of causing or intensifying fire

11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Potassium nitrate Phosphoric acid, ammonium salt	LD50 Oral LD50 Dermal LD50 Oral	Rat Rabbit Rat	3540 mg/kg >5000 mg/kg >2000 mg/kg	- - -

Chronic toxicity

There is no data available.

Irritation/Corrosion

Skin : There is no data available.
Eyes : There is no data available.
Respiratory : There is no data available.

Sensitizer

Skin : There is no data available.
Respiratory : There is no data available.

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Magnesium nitrate, hexahydrate	-	2A	-	-	-	-

Mutagenicity

There is no data available.

Teratogenicity

11. Toxicological information

There is no data available.

Reproductive toxicity

There is no data available.

12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
Potassium nitrate	Acute LC50 490 mg/L Fresh water Acute LC50 22500 ug/L Fresh water	Daphnia - Daphnia magna Fish - Gambusia affinis - Adult	48 hours 96 hours

Persistence/degradability

There is no data available.

13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN3218	Nitrates, inorganic, aqueous solution, n.o.s. (Potassium nitrate)	5.1	III		**Remarks** Concentrations of FloraGroTM, at the minimum temperature encountered during normal transportation, will not exceed 80% of the saturation limit.
IMDG Class	UN3218	Nitrates, inorganic, aqueous solution, n.o.s. (Potassium nitrate)	5.1	III		-
IATA-DGR Class	UN3218	Nitrates, inorganic, aqueous solution, n.o.s. (Potassium nitrate)	5.1	III		-

PG* : Packing group

Exemption to the above classification may apply.

AERG : 140

15. Regulatory information

HCS Classification : Oxidizing material
Irritating material
Carcinogen
Target organ effects

U.S. Federal regulations : **TSCA 8(a) IUR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Potassium nitrate
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Potassium nitrate: Fire hazard, Delayed (chronic) health hazard

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	Potassium nitrate Phosphoric acid, ammonium salt	7757-79-1 7722-76-1	10 - 30 1 - 5
Supplier notification	Potassium nitrate Phosphoric acid, ammonium salt	7757-79-1 7722-76-1	10 - 30 1 - 5

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: Potassium nitrate

New York : None of the components are listed.

New Jersey : The following components are listed: Potassium nitrate

Pennsylvania : The following components are listed: Potassium nitrate

California Prop. 65

No products were found.

16. Other information

Label requirements : OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CAUSES EYE AND SKIN IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. CAN CAUSE TARGET ORGAN DAMAGE. SUSPECT CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER.

Hazardous Material Information System (U.S.A.) : **Health :** 2 * **Flammability :** 0 **Physical hazards :** 1

16. Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) : **Health :** 2 **Flammability :** 0 **Instability :** 1 **Special :** OX

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue mm/dd/yyyy : 07/15/2012

Version : 1

Revised Section(s) : Not applicable.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

genhydro.com

Date : 07/15/2012
Version : 1

Material Safety Data Sheet

FloraBloom™ Advanced Nutrient System

1. Product and company identification

Product name : FloraBloom™ Advanced Nutrient System

Chemical family : A mixture of plant nutrition minerals in aqueous solution.

Material uses : Hydroponic plant nutrient.

Supplier/Manufacturer : General Hydroponics
3789 Vine Hill Rd. Sebastopol CA 95472
Tel: (707) 824-9376
Fax: (707) 824-9377

MSDS authored by : KMK Regulatory Services Inc.

In case of emergency : CHEMTREC, U.S. : 1-800-424-9300
International: +1-703-527-3887 (collect calls accepted)

2. Hazards identification

Emergency overview

Physical state : Liquid.

Color : Pink.

Odor : Odorless.

Hazard statements : NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Potential chronic health effects

Chronic effects : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : No specific data.

Ingestion : No specific data.

Skin : No specific data.

Eyes : No specific data.

2. Hazards identification

Medical conditions aggravated by overexposure : None known.

See toxicological information (Section 11)

3. Composition/information on ingredients

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Flammability of the product : Not flammable.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
sulfur oxides
phosphorus oxides
metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

6. Accidental release measures

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

8. Exposure controls/personal protection

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

Physical state : Liquid.

Color : Pink.

Odor : Odorless.

pH : 3.5

Melting/freezing point : -1°C (30.2°F)

Relative density : 1.162

Solubility : Easily soluble in the following materials: cold water and hot water.

10. Stability and reactivity

Chemical stability : The product is stable.

Conditions to avoid : No specific data.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials and acids.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

Acute toxicity

There is no data available.

Chronic toxicity

There is no data available.

Irritation/Corrosion

Skin : There is no data available.

Eyes : There is no data available.

Respiratory : There is no data available.

Sensitizer

Skin : There is no data available.

Respiratory : There is no data available.

Carcinogenicity

There is no data available.

Mutagenicity

There is no data available.

Teratogenicity

There is no data available.

Reproductive toxicity

There is no data available.

12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic ecotoxicity

There is no data available.

Persistence/degradability

There is no data available.

13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
IMDG Class	Not regulated.	-	-	-		-
IATA-DGR Class	Not regulated.	-	-	-		-

PG* : Packing group

Exemption to the above classification may apply.

AERG : Not available.

15. Regulatory information

HCS Classification : Not regulated.

U.S. Federal regulations : **TSCA 8(a) IUR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.

Clean Water Act (CWA) 311: Phosphoric acid

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

15. Regulatory information

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

No products were found.

16. Other information

Label requirements : NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

Hazardous Material Information System (U.S.A.) : **Health :** 0 **Flammability :** 0 **Physical hazards :** 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) : **Health :** 0 **Flammability :** 0 **Instability :** 0

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History

Date of issue mm/dd/yyyy : 07/15/2012

Version : 1

Revised Section(s) : Not applicable.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MATERIAL SAFETY DATA SHEET

GENERAL HYDROPONICS FLORABLEND ™

11/21/07

SECTION 1. MATERIAL IDENTIFICATION

Product Name: General Hydroponics FloraBlend™ vegan compost tea
General Use: An auxiliary soil and plant substance
Manufactured by: General Hydroponics, 3789 Vine Hill Road, 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. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients: FloraBlend™ is derived from alfalfa meal, brewers yeast, cottonseed meal, potassium sulfate, rock phosphate, sea kelp, and soybean oil. The chemical identity of the compounds and exact proportions used in the mixture are a trade secret.
Exposure Limits: No limits are established for exposure to Floralblend ™ .

SECTION 3. HAZARDS IDENTIFICATION

*** Emergency Overview ***

General Hydroponics FloraBlend™ is a black-colored liquid with a slight humic odor. This product is of low toxicity, but might cause skin and eye irritation upon contact. It is also expected to be a low ingestion hazard.

Potential Health Effects

Primary Entry Routes: Ingestion and skin or eye contact
Ingestion: low ingestion hazard
Eye: May cause irritation
Skin: May cause irritation
Inhalation: Not considered an inhalation hazard
Carcinogenicity: IARC, NTP, and OSHA do not list ingredients as a carcinogenic.
Medical Conditions Aggravated by Long- **Term Exposure:** Unknown
Chronic Effects: Not known
Other: Not known

SECTION 4. FIRST AID MEASURES

Inhalation: Remove exposed person to fresh air and support breathing, if necessary. Consult a physician if respiratory distress continues.
Ingestion: If swallowed give several glasses of water to drink to dilute product. Never give anything by mouth to an unconscious person. Induce vomiting as directed by medical personnel. Call a physician.

Eye Contact: Do not allow victim to rub or keep eyes tightly shut. 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 mild soap and water. For reddened or blistered skin, consult a physician.
After first aid: Get appropriate community medical support.

SECTION 5. FIRE AND EXPLOSION DATA

Flammability Classification: Not flammable
Burning Rate: Not combustible
Extinguishing Media: Use any means suitable for extinguishing surrounding fire.
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: Spills should be wiped up with absorbent materials, or mopped up carefully and held for reclamation or disposal.
Regulatory Requirements: Avoid infiltration of the undiluted product into drains, surface water, groundwater, and soil.

SECTION 7. HANDLING AND STORAGE

Handling Precautions: Avoid ingestion, skin contact, eye contact, and inhalation.
Storage Requirements: Keep in tightly closed containers in a cool, dry, ventilated area.
Regulatory Requirements: Follow applicable OSHA regulations.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: Provide general or local exhaust ventilation.
Administrative Controls: Avoid direct contact with the product.
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 FloraBlend™, 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 impervious protective clothing 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 FloraBlend™.
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: Aqueous solution
Specific Gravity: 1.04
Appearance and Odor: Black colored liquid with slight humic odor.

pH: 3.0
Odor Threshold Range: Unknown
Water Solubility: Soluble.
Other Solubilities: Unknown
Boiling Point 105^0 C
Freezing Point: -2.0^0 C

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable at room temperature in closed containers, under normal storage and handling conditions
Polymerization: Hazardous polymerization does not occur.
Chemical Incompatibilities: None known
Conditions to Avoid: direct contact with skin or eyes
Hazardous Decomposition Products: When heated, carbon monoxide and nitrogen oxides may form.

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): Not listed

SECTION 15. REGULATORY INFORMATION

EPA Regulations: Not listed

SECTION 16. OTHER INFORMATION

General Hydroponics FloraBlend™ 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.

MATERIAL SAFETY DATA SHEET

GENERAL HYDROPONICS FLORA KLEEN®

3/6/09

SECTION 1. MATERIAL IDENTIFICATION

Product Name: Flora Kleen® Cleaning Flush Solution

Chemical Family: Hydroponics plant flavor enhancer

Product Use: A flush solution for removing nutrient residues from hydroponics systems

Manufactured by: General Hydroponics, 3789 Vine Hill Road, 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: Flora Kleen® Cleaning Flush Solution is a specially formulated mixture of chemicals that are mixed in proportions to assure adequate removal of nutrient residues. The chemical identity of the compounds and exact proportions used in the mixture are a trade secret.

Exposure Limits: No limits are established for exposure to the ingredients of Flora Kleen® Cleaning Flush Solution

SECTION 3. HAZARDS IDENTIFICATION

*** Emergency Overview ***

As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing

Potential Health Effects

Primary Entry Routes: ingestion, inhalation, and skin contact

Ingestion: Ingestion may cause gastro-intestinal distress.

Eye: May cause redness and pain

Skin: May cause mild irritation

Inhalation: May cause mild irritation

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

Medical Conditions Aggravated by Long- Term Exposure: Unknown

Chronic Effects: No adverse health effects expected
Other: None

Section 4. FIRST AID MEASURES

Ingestion: If swallowed give several glasses of water to drink to dilute product. Never give anything by mouth to an unconscious person. Induce vomiting as directed by medical personnel. Call a physician.

Inhalation: Remove exposed person to fresh air and support breathing, if necessary. Consult a physician if respiratory distress continues.

Eye Contact: Do not allow victim to rub or keep eyes tightly shut. 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 mild soap and water. For reddened or blistered skin, consult a physician.

After first aid: Get appropriate community medical support.

SECTION 5. FIRE AND EXPLOSION DATA

Flammability Classification: Flora Kleen® Cleaning Flush Solution is not combustible.

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: Container may explode in heat of fire.

Hazardous Combustion Products: Can decompose explosively in a fire

Special information: 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: Spills should be wiped up with absorbent materials, or mopped up carefully and held for reclamation or disposal.

Regulatory Requirements: Avoid infiltration of the undiluted product into drains, surface water, groundwater, and soil.

SECTION 7. HANDLING AND STORAGE

Storage: Keep product in sealed container when not in use.

Handling Precautions: Avoid ingestion, skin contact, eye contact, and inhalation

Storage Requirements: Keep in tightly closed containers in a cool, dry, ventilated area.

Regulatory Requirements: Follow applicable OSHA regulations.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Airborne Exposure Limits: None established

Ventilation: Provide general or local exhaust ventilation.

Administrative Controls: Avoid direct contact with the product.

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: Flora Kleen® Cleaning Flush Solution, 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 impervious protective clothing 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 Flora Kleen® Cleaning Flush Solution.

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: Aqueous solution

Density: 1.01

pH: 4.0

Appearance and Odor: Light blue odorless solution

Odor Threshold Range: Unknown

Vapor Pressure: Unknown

Water Solubility: Miscible

Boiling Point: 101^0 c

Melting point: -1^0 c

Other Solubilities: Unknown

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable under normal storage and handling conditions.

Chemical Incompatibilities: Flora Kleen® Cleaning Flush Solution contains a low concentration of a chemical that when in a higher concentration may react with strong oxidizing agents.

Conditions to Avoid: Mixture with incompatible materials, high temperatures

Hazardous Decomposition Products: At extreme temperatures, CO, and harmful oxides may be evolved.

SECTION 11. TOXICOLOGICAL INFORMATION

None of the chemicals are considered toxic in the concentrations used in Flora Kleen® Cleaning Flush Solution. One low concentration ingredient is being investigated as a mutagen, reproductive effector. NTP, IARC, or OSHA lists no ingredients as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity: Unknown

Environmental Fate: Not expected to be significant

Environmental Degradation: Unknown

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal: When possible, save wastes for recycling recovery, otherwise wastes should be managed in a waste disposal facility approved by local regulation.

SECTION 14. TRANSPORTATION INFORMATION

Not regulated

SECTION 15. REGULATORY INFORMATION

EPA Regulations: Not listed

SECTION 16. OTHER INFORMATION

Flora Kleen® Cleaning Flush Solution is a flush solution for removing nutrient residues from hydroponics systems. 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.

genhydro.com

Date : 07/15/2012
Version : 1

Material Safety Data Sheet

FloraMicro™ Advanced Nutrient System

1. Product and company identification

Product name : FloraMicro™ Advanced Nutrient System

Chemical family : Nitrates and inorganic minerals in aqueous solution.

Material uses : Hydroponic plant nutrient.

Supplier/Manufacturer : General Hydroponics
3789 Vine Hill Rd. Sebastopol CA 95472
Tel: (707) 824-9376
Fax: (707) 824-9377

MSDS authored by : KMK Regulatory Services Inc.

In case of emergency : CHEMTREC, U.S. : 1-800-424-9300
International: +1-703-527-3887 (collect calls accepted)

2. Hazards identification

Emergency overview

Physical state : Liquid. [Aqueous solution.]

Color : Brown. [Dark]

Odor : Odorless.

Signal word : DANGER!

Hazard statements : STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CAUSES EYE AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED. MAY CAUSE RESPIRATORY TRACT IRRITATION. CAN CAUSE TARGET ORGAN DAMAGE.

Precautionary measures : Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Keep away from clothing and other combustible materials. Store in tightly-closed container. Keep container tightly closed. Wash thoroughly after handling.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation : Moderately irritating to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : Harmful if swallowed.

Skin : Irritating to skin.

Eyes : Irritating to eyes.

Potential chronic health effects

Chronic effects : Can cause target organ damage.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

2. Hazards identification

Target organs : Causes damage to the following organs: blood, mucous membranes, cardiovascular system, skin.
Contains material which may cause damage to the following organs: upper respiratory tract.

Over-exposure signs/symptoms

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Ingestion : Ingestion can cause irritation to the gastrointestinal tract with headaches, nausea, vomiting, and diarrhea.

Skin : Adverse symptoms may include the following:
irritation
redness

Eyes : Adverse symptoms may include the following:
pain or irritation
watering
redness

Medical conditions aggravated by overexposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

3. Composition/information on ingredients

Name	CAS number	%
Ammonium nitrate	6484-52-2	1 - 5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5. Fire-fighting measures

Flammability of the product : This material increases the risk of fire and may aid combustion. In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
nitrogen oxides
metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Use spark-proof tools and explosion-proof equipment. Dispose via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Use spark-proof tools and explosion-proof equipment. Dispose via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from combustible material. Empty containers retain product residue and can be hazardous. Do not reuse container.

7. Handling and storage

Storage : See NFPA 430, Code for the Storage of Liquid and Solid Oxidizers. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Separate from reducing agents and combustible materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

Physical state : Liquid. [Aqueous solution.]

Color : Brown. [Dark]

Odor : Odorless.

pH : 5.8

Melting/freezing point : -1.11°C (30°F)

Relative density : 1.25

Solubility : Easily soluble in the following materials: cold water and hot water.

10. Stability and reactivity

Chemical stability : The product is stable.

Conditions to avoid : Drying on clothing or other combustible materials may cause fire.

Incompatible materials : Reactive or incompatible with the following materials: reducing materials and organic materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Possibility of hazardous reactions : Hazardous reactions or instability may occur under certain conditions of storage or use.
Conditions may include the following:
contact with combustible materials
Reactions may include the following:
risk of causing or intensifying fire

11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Ammonium nitrate	LD50 Oral	Rat	2217 mg/kg	-

Chronic toxicity

There is no data available.

Irritation/Corrosion

Skin : There is no data available.

Eyes : There is no data available.

Respiratory : There is no data available.

Sensitizer

Skin : There is no data available.

Respiratory : There is no data available.

Carcinogenicity

There is no data available.

Mutagenicity

There is no data available.

Teratogenicity

There is no data available.

Reproductive toxicity

There is no data available.

12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
Ammonium nitrate	LC50 >9100 mg/l Chronic NOEC >6 mg/L Fresh water	Fish Crustaceans - Cladocera	96 hours 21 days

Persistence/degradability

There is no data available.

13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN3218	Nitrates, inorganic, aqueous solution, n.o.s.	5.1	III		**Remarks** Concentrations of FloraMicroTM, at the minimum temperature encountered during normal transportation, will not exceed 80% of the saturation limit.
IMDG Class	UN3218	Nitrates, inorganic, aqueous solution, n.o.s.	5.1	III		-
IATA-DGR Class	UN3218	Nitrates, inorganic, aqueous solution, n.o.s. (Ammonium nitrate)	5.1	III		-

PG* : Packing group Exemption to the above classification may apply. **AERG** : 140

15. Regulatory information

HCS Classification : Oxidizing material
Irritating material
Target organ effects

U.S. Federal regulations : **TSCA 8(a) IUR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Ammonium nitrate
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Ammonium nitrate: Fire hazard, reactive

Clean Water Act (CWA) 307: Zinc(II) EDTA disodium salt; Copper disodium EDTA

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

15. Regulatory information

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	Ammonium nitrate	6484-52-2	1 - 5
Supplier notification	Ammonium nitrate	6484-52-2	1 - 5

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: Ammonium nitrate

New York : None of the components are listed.

New Jersey : The following components are listed: Ammonium nitrate

Pennsylvania : The following components are listed: Ammonium nitrate

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Cobalt sulphate	Yes.	No.	No.	No.

16. Other information

Label requirements : STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CAUSES EYE AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED. MAY CAUSE RESPIRATORY TRACT IRRITATION. CAN CAUSE TARGET ORGAN DAMAGE.

Hazardous Material Information System (U.S.A.) : **Health :** 2 * **Flammability :** 0 **Physical hazards :** 1

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) : **Health :** 2 **Flammability :** 0 **Instability :** 1 **Special :** OX

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16. Other information

History

Date of issue mm/dd/yyyy : 07/15/2012

Version : 1

Revised Section(s) : Not applicable.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MATERIAL SAFETY DATA SHEET

GENERAL HYDROPONICS LIQUID KOOLBLOOM™
3/7/09

SECTION 1. MATERIAL IDENTIFICATION

Product Name: Liquid KoolBloom™ Ripening Formula

Chemical Family: A mixture of plant nutrition minerals

Product Use: Hydroponic plant nutrient

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: Liquid KoolBloom™ Ripening Formula is a concentrated nutrient additive that promotes abundant flowering. The chemical identity of the compounds and exact proportions used in the mixture are a trade secret. Liquid KoolBloom™ Ripening Formula is derived from magnesium phosphate, potassium phosphate, and potassium sulfate.
Exposure Limits: Exposure limits are not established for Liquid KoolBloom™

SECTION 3. HAZARDS IDENTIFICATION

*** Emergency Overview ***

As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing

Potential Health Effects

Primary Entry Routes: Ingestion, inhalation, and skin contact

Target Organs: Skin, eyes, and gastrointestinal tract

Ingestion: Can cause irritation to the gastrointestinal tract, may cause nausea, vomiting, and diarrhea.

Eye: Can cause irritation, redness, and pain.

Skin: Prolonged exposure can cause irritation or rash. Symptoms can include redness, itching, and pain.

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

Carcinogenicity: IARC, NTP, and OSHA do not list any of the ingredients as a carcinogen.

Medical Conditions Aggravated by Long- Term Exposure: Unknown.

Chronic Effects: Repeated or prolonged exposure to some ingredients can cause irritation of the respiratory tract.

Other: None

Section 4. FIRST AID MEASURES

Ingestion: If swallowed, give several glasses of water to drink to dilute product. Never give anything by mouth to an unconscious person. Only induce vomiting as directed by medical personnel. Call a physician.

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

Fire: Not believed to be a fire hazard.

Flammability Classification: Liquid KoolBloom™ Ripening Formula is not combustible.

Burning Rate: Unknown
Extinguishing Media: Use any means suitable for extinguishing surrounding fire.

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: Can be diluted, and flushed into a sewer.

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: Keep in tightly closed containers in a cool, dry, ventilated area.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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

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 Liquid KoolBloom™ Ripening Formula, 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 impervious protective clothing 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 Liquid KoolBloom™ Ripening Formula.

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

pH: 6.1

Appearance and Odor: Amber liquid, with musky vitamin odor

Water Solubility: Soluble

Boiling Point: 101^0 C

Freezing Point:: -1^0 C

Vapor Pressure: Unknown

Other Solubility: Unknown

SECTION 10. STABILITY AND REACTIVITY

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

Polymerization: Hazardous polymerization does not occur.

Chemical Incompatibilities: Strong oxidizing and reducing agents

Conditions to Avoid: Mixture with incompatibles, high temperatures

Hazardous Decomposition Products: At extreme temperatures, irritating and highly toxic gases may be released.

SECTION 11. TOXICOLOGICAL INFORMATION

Some chemicals in Liquid KoolBloom™ Ripening Formula are toxic by ingestion, inhalation, or dermal contact. None of the ingredients are known to be 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): Not regulated

SECTION 15. REGULATORY INFORMATION

EPA Regulations: Not listed

SECTION 16. OTHER INFORMATION

General Hydroponics Liquid KoolBloom™ Ripening Formula 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.

genhydro.com

Date : 08/15/2012
Version : 1

Material Safety Data Sheet

General Hydroponics Floralicious® Plus

1. Product and company identification

Product name : General Hydroponics Floralicious® Plus

Chemical family : Not available.

Material uses : An auxiliary soil and plant substance.

Supplier/Manufacturer : General Hydroponics
PO BOX 1576, Sebastopol CA 95472
Tel: (707) 824-9376
Fax: (707) 824-9377

MSDS authored by : KMK Regulatory Services Inc.

In case of emergency : CHEMTREC, U.S. : 1-800-424-9300
International: +1-703-527-3887 (collect calls accepted)

2. Hazards identification

Emergency overview

Physical state : Liquid. [Aqueous solution.]

Color : Black.

Odor : Soy odor with vanilla fragrance. [Slight]

Signal word : CAUTION!

Hazard statements : MAY CAUSE EYE AND SKIN IRRITATION.

Precautionary measures : Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

Routes of entry : Dermal contact. Eye contact. Ingestion.

Potential acute health effects

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Skin : Slightly irritating to the skin.

Eyes : Slightly irritating to the eyes.

Potential chronic health effects

Chronic effects : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Skin : Adverse symptoms may include the following:
irritation
redness

2. Hazards identification

Eyes : Adverse symptoms may include the following:
irritation
watering
redness

Medical conditions aggravated by overexposure : None known.

See toxicological information (Section 11)

3. Composition/information on ingredients

Name	CAS number	%
Humic acids	1415-93-6	10 - 30

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Flammability of the product : Not combustible.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposes on heating.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

8. Exposure controls/personal protection

Respiratory : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

Physical state : Liquid. [Aqueous solution.]

Color : Black.

Odor : Soy odor with vanilla fragrance. [Slight]

pH : 4.5

Boiling/condensation point : 100°C (212°F)

Melting/freezing point : -1°C (30.2°F)

Relative density : 1.13

Solubility : Easily soluble in the following materials: cold water and hot water.

10. Stability and reactivity

Chemical stability : The product is stable.

Conditions to avoid : Avoid contact with incompatibles. Avoid heating.

Incompatible materials : Reactive or incompatible with the following materials: Hypochlorites, oxidizing materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced. Decomposes on heating.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

Acute toxicity

There is no data available.

Chronic toxicity

There is no data available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Citric acid	Eyes - Severe irritant Skin - Moderate irritant Skin - Mild irritant	Rabbit Rabbit Rabbit	- - -	24 hours 750 µg 0.5 mL 24 hours 500 mg	- - -

Sensitizer

11. Toxicological information

Skin : There is no data available.

Respiratory : There is no data available.

Carcinogenicity

There is no data available.

Mutagenicity

There is no data available.

Teratogenicity

There is no data available.

Reproductive toxicity

There is no data available.

12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic ecotoxicity

There is no data available.

Persistence/degradability

There is no data available.

13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
IMDG Class	Not regulated.	-	-	-		-
IATA-DGR Class	Not regulated.	-	-	-		-

PG* : Packing group

Exemption to the above classification may apply.

AERG : Not applicable

15. Regulatory information

HCS Classification : Not regulated.

U.S. Federal regulations : **TSCA 8(a) IUR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): Not determined.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

Not available.

16. Other information

Label requirements : MAY CAUSE EYE AND SKIN IRRITATION.

Hazardous Material Information System (U.S.A.) : **Health :** 1 **Flammability :** 0 **Physical hazards :** 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) : **Health :** 1 **Flammability :** 0 **Instability :** 0

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History

Date of issue mm/dd/yyyy : 08/15/2012

16. Other information

Version : 1

Revised Section(s) : Not applicable.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
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DRAFT MATERIAL SAFETY DATA SHEET

GENERAL HYDROPONICS RAPID START™

12/22/10

SECTION 1. MATERIAL IDENTIFICATION

Product Name: RapidStart™

Chemical Family: Nitrates and inorganic minerals in aqueous solution

Product Use: Hydroponic plant nutrient

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: RapidStart™ 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 nitrate, potassium nitrate, potassium phosphate, iron DPTA, it also contains non-plant food ingredients, 0.05 alfalfa extract, 0.05 barley extract, 0.1 willow bark extract.

Exposure Limits: Some of the chemicals used in RapidStart™, 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 *****

CONTAINS OXIDIZERS, 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, Other: Oxidizer.

Potential Health Effects

Primary Entry Routes: Ingestion, inhalation, and skin contact

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

Ingestion: Ingestion can cause irritation to the gastrointestinal tract with headaches, nausea, vomiting, and diarrhea.

Eye: Irritation, redness and pain

Skin: Irritation, redness, itching, and pain

Inhalation: Irritation to the respiratory tract. Symptoms may include coughing, 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 produce target organ damage.

Other: None

Section 4. FIRST AID MEASURES

Ingestion: Induce vomiting with large amounts of water or milk. 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 immediately.

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: RapidStart™ is not combustible. However, it contains a powerful oxidizer and can initiate and intensify combustion of flammable materials.

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. Keep in tightly closed containers stored in a cool, dry, ventilated area. Do not store on wooden shelf or floor.

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 RapidStart™, 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 nitride 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 RapidStart™.

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: Aqueous solution.

Density: 1.122

pH: 6.25

Appearance and Odor: Brown with nutty odor.

Odor Threshold Range: Unknown.

Vapor Pressure: Unknown.

Water Solubility: Soluble.

Other Solubilities: Unknown.

Freezing Point: Unknown

Viscosity: Unknown.

SECTION 10. STABILITY AND REACTIVITY

Stability: Unstable at high temperatures. An oxidizer reacts violently upon contact with many organic substances.

Polymerization: Polymerization does not occur.

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

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

Hazardous Decomposition Products: Oxides of nitrogen**.**

SECTION 11. TOXICOLOGICAL INFORMATION

RapidStart™ contains some chemicals that are toxic by ingestion, inhalation, or dermal contact.

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 RapidStart™ 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 RapidStart™ 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.

MATERIAL SAFETY DATA SHEET

GENERAL HYDROPONICS pH TEST INDICATOR

3/12/09

SECTION 1. MATERIAL IDENTIFICATION

Product Name: pH Test Indicator

Chemical Family: aqueous mixture of chemicals including methyl alcohol

Product Use: To measure pH of hydrroponic growth media

Manufactured by: General Hydroponics, 3789 Vine Hill Road, 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: pH Indicator is a specially formulated mixture of chemicals that are mixed in proportions to indicate the pH of hydroponic growth media. The chemical identity of the compounds and exact proportions used in the mixture are a trade secret. The solution does contain approximately 7.69 % methyl alcohol.

Exposure Limits: No specific limits are established for the mixture of chemicals in PH Indicator.

SECTION 3. HAZARDS IDENTIFICATION

*** Emergency Overview ***

Ingredients include 7.69% methyl alcohol. Methyl alcohol is poisonous and may be fatal or cause blindness if swallowed. It is harmful if inhaled or absorbed through the skin. Methyl alcohol can not be made nonpoisonous. Methyl alcohol in this concentration may also cause irritation to the skin, eyes and respiratory tract. Methyl alcohol can also do damage to the central nervous system and liver.

Potential Health Effects

Primary Entry Routes: ingestion, inhalation, and skin contact

Ingestion: Toxic, can intoxicate and cause blindness.

Inhalation: Toxic effects on the nervous system, particularly on the optic nerve.

Eye: May cause redness, pain, and eye lesions.

Skin: May cause irritation. Methyl alcohol is a defatting agent can make skin dry and cracked.

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

Chronic Exposure: Impairment of vision and skin irritation.

Medical Conditions Aggravated by Long - Term Exposure: persons with pre-existing skin disorders, eye problems, impaired liver or kidney function may be more susceptible to the substance.

Section 4. FIRST AID MEASURES

Ingestion: If swallowed, induce vomiting immediately and contact a physician. Never give anything by mouth to an unconscious person.

Inhalation: Remove exposed person to fresh air and support breathing, if necessary. Give oxygen. Consult a physician immediately.

Eye Contact: Do not allow victim to rub or keep eyes tightly shut. Gently lift eyelids and flush immediately and continuously with flooding amounts of water for at least 15 minutes. Always consult a physician or ophthalmologist if pain or irritation develops.

Skin Contact: Wash exposed area with water for 15 minutes. Remove contaminated clothes and wash all garments before reuse. For reddened or blistered skin, consult a physician.

After First Aid: Get appropriate community medical support.

SECTION 5. FIRE AND EXPLOSION DATA

Flammability Classification: pH Test Indicator is slightly combustible.

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: Container may explode in heat of fire.

Hazardous Combustion Products: Can decompose explosively in a fire.

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

SECTION 6. ACCIDENTAL RELEASE MEASURES

Spill/Leak Procedures: Ventilate the area of a leak or spill. Wear appropriate protective clothing (see section 8). Spills should be wiped up with absorbent materials, or mopped up carefully and held for reclamation or disposal. Do not flush to sewer.

Regulatory Requirements: Avoid infiltration of the undiluted product into drains, surface water, groundwater, and soil.

SECTION 7. HANDLING AND STORAGE

Handling Precautions: Avoid ingestion, skin contact, eye contact, and inhalation

Storage Requirements: Keep in tightly closed containers in a cool, dry, ventilated area.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Airborne Exposure Limits: For pH Test , no limits are established. For pure methyl alcoho,l the OSHA exposure limit (PEL) and ACGIH (TLV) is 200ppm(TWA)

Ventilation: Provide general or local exhaust ventilation.

Administrative Controls: Avoid direct contact with the product.

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 using pH Test Indicator, 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 impervious protective clothing when the possibility of skin or clothing contamination may exist. Wear neoprene or rubber gloves when directly handling the product.

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: Aqueous solution

Density: 0.99

pH: 6.4

Appearance and Odor: dark green with a slight alcohol odor.

Odor Threshold Range: Unknown

Vapor Pressure: Unknown

Water Solubility: Soluble

Boiling Point: 96^0 c

Melting point: -5^0 c

Other Solubilities: Unknown

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable under normal storage and handling conditions.

Chemical Incompatibilities: pH Indicator may react with strong oxidizing agents.

Conditions to Avoid: Mixture with incompatible materials, high temperatures

Hazardous Decomposition Products: At extreme temperatures, CO and harmful oxides may be evolved.

SECTION 11. TOXICOLOGICAL INFORMATION

The oral rat LD50 for methyl alcohol is 5628 mg/kg.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity: Slightly toxic to aquatic life.

Environmental Fate: Rapidly biodegrades in soil and water.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal: When possible, save wastes for recycling recovery. Otherwise, wastes should be managed as hazardous waste.

SECTION 14. TRANSPORTATION INFORMATION

Proper Shipping Name: METHANOL SOLUTION
Hazard Class: 3, 6.1
UN/NA: UN1230
Packing Group: II
Information reported for product/size: 1L

SECTION 15. REGULATORY INFORMATION

EPA Regulations: not regulated

SECTION 16. OTHER INFORMATION

pH Test Indicator is a very dark green solution of chemicals mixed in concentrations to determine the pH of hydroponic growth media. 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.