Alcohol and Marijuana Control Office
550 W 7th Avenue, Suite 1600
Anchorage, AK 99501
marijuana.licensing@alaska.gov
https://www.commerce.alaska.gov/web/amco
Phone: 907.269.0350

Alaska Marijuana Control Board

Operating Plan Supplemental
Form MJ-04: Marijuana Cultivation Facility

What is this form?

This operating plan supplemental form is required for all applicants seeking a marijuana cultivation facility license and must accompany the **Marijuana Establishment Operating Plan (Form MJ-01)**, per 3 AAC 306.020(b)(11). Applicants should review **Chapter 306: Article 4** of the **Alaska Administrative Code.** This form will be used to document how an applicant intends to meet the requirements of those regulations. If your business has a formal operating plan, you may include a copy of that operating plan with your application, but all fields of this form must still be completed per 3 AAC 306.020 and 3 AAC 306.420(2).

What additional information is required for cultivation facilities?

Applicants must identify how the proposed establishment will comply with applicable regulations regarding the following:

- Prohibitions
- Cultivation plan
- Odor control
- Testing procedure and protocols
- Security

This form must be submitted to AMCO's main office before any marijuana cultivation facility license application will be considered complete.

Section 1 – Establishment Information

Enter information for the business seeking to be licensed, as identified on the license application.

Licensee:	B2C2LH,LLC.	**License Number:**	11118		
License Type:	Standard Marijuana Cultivation Facility				
Doing Business As:	Mercy Tree of Alaska				
Premises Address:	1648 N. Post Road				
City:	Anchorage	**State:**	ALASKA	**ZIP:**	99501

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Operating Plan Supplemental
Form MJ-04: Marijuana Cultivation Facility

Section 2 – Prohibitions

Applicants should review 3 AAC 306.405 – 3 AAC 306.410 and be able to answer "Agree" to all items below.

The marijuana cultivation facility will not:	Agree	Disagree
Sell, distribute, or transfer any marijuana or marijuana product to a consumer, with or without compensation	■	☐
Allow any person, including a licensee, employee, or agent, to consume marijuana or marijuana product on its licenses premises or within 20 feet of the exterior of any building or outdoor cultivation facility	■	☐
Treat or otherwise adulterate marijuna with any organic or nonorganic chemical or compound to alter the color, appearance, weight, or odor of the marijuana	■	☐

Section 3 – Cultivation Plan

Review the requirements under 3 AAC 306.420, and identify how the proposed premises will meet the listed requirements.

Describe the size of the space(s) the marijuana cultivation facility intends to be under cultivation, including dimensions and overall square footage. Provide your calculations below:

The cultivation space will be a total of 1,734 sq. ft. made up of 6 individual 17' by 17' rooms for a total of 289 sq. ft. per room and will consist of four bloom rooms a nursery and a cure/trim room.

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Describe the marijuana cultivation facility's growing medium(s) to be used:

The mediums we will use will be a mixture of coco coir and perlite at a 60:40 ratio perspectively, as well as rockwool cubes for rooting seedlings and clones.
Canna coco coir 100% natural product.
Ingredients:
-Coconut pith fiber
-Electrical Conductivity (EC) <0.6 mS/cm
-pH 5.5 -7.0
-Total aeration 19%
-Total moisture content 75%
Perlite:
An amorphous volcanic glass that has a relatively high water content, typically formed by the hydration of obsidian.
Ingredients:
-70-75% silicon dioxide
-12-15% aluminum oxide
-3-4% sodium oxide
-3-5% potassium oxide
-0.5-2% iron oxide
-0.2-0.7% magnesium oxide
-0.5-1.5% calcium oxide
-3-5% loss on ignition (chemical/combined water.
Rockwool cubes.
Ingredients:
-Basalt rock
-Chalk

Describe the marijuana cultivation facility's fertilizers, chemicals, gases, and delivery systems, including carbon dioxide management, to be used:

We will be using blue lab C02 natural gas generators in all of four of our sealed bloom rooms, distributed evenly throughout the room using fans and controlled by Sentinel CPPM-4 C02 controllers to insure C02 levels in the rooms do not exceed 800-1200 ppm depending on the stages of bloom. We will have carbon dioxide/carbon monoxide detectors outside of the bloom rooms to insure safe levels in the main work areas even though the toxic levels of C02 are 5000 ppm.

Below is a list of all of the nutrients and chemicals we will be using in our cultivation process. See attached MSDS for all products

-Clonex: Improves root formation and is used for the propagation of plant cuttings.
-Mammoth P: Designed to increase phosphorous availability during the bloom phase and should be used as a supplement to regular fertilizing program.
-Plus (+) Life: Free flowing powdered microbial inoculant containing natural, non-genetically altered beneficial soil microorganisms and nutrients.
-Plus (+) Size: Free flowing powdered mineral complex containing monopotassium phosphite, magnesium sulfate, potassium sulfate and other non hazardous ingredients.
-Push Foliar: Folier applied supplemental nutritional product for plants.
-Shine: Free flowing powdered mineral complex containing monopotassium phosphite, magnesium sulfate, potassium sulfate and other non-hazardous ingredients.
-General Hydroponics pH Up: to raise the level of pH of hydroponic nutrient solutions and plant fertilizers.
-Veg + Bloom: For all growing stages to include blooming stages.
-General Hydroponics pH Down: To lower pH levels of hydroponic nutrient solutions and plant fertilizers.

-See attached MSDS for all products set forth above.

Describe the marijuana cultivation facility's irrigation and waste water systems to be used:

Our irrigation technique will be top feed hand-watering drain to waste system to ensure minimal run-off. All run-off will be collected in a container for testing to insure adequate nutrition of the plant. The wastewater will be filtered using a 3 stage reverse osmosis filter and reused when viable. When we are not able to reuse the waste-water we will evaporate the water, collect the residual salts and dispose of them as a landfill item.

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Describe the marijuana cultivation facility's waste disposal arrangements:

We have a current mandatory arrangement through the Alaska Railroad with Solid Waste Services.

Section 4 – Odor Control

Review the requirements under 3 AAC 306.430, and identify how the proposed premises will meet the listed requirement.

Describe the odor control method(s) to be used and how the marijuana cultivation facility will ensure that any marijuana at the facility does not emit an odor that is detectable by the public from outside the facility:

To insure no marijuana odor is detectable by the public from outside the facility we will implement a multi teared plan revolving around fully sealed rooms. Each sealed room will run two carbon filtered air scrubbers with a atmosphere exchange rate of 1,500 cfm. The main multi use area of the facility will add redundancy by using carbon filtered exhaust in the make up air process.

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Operating Plan Supplemental

Form MJ-04: Marijuana Cultivation Facility

Section 5 – Testing Procedure and Protocols

Review the requirements under 3 AAC 306.455 and 3 AAC 306.465, and identify how the proposed premises will meet the listed requirements.

Applicants should be able to answer "Agree" to the item below.

I understand and agree that:	Agree	Disagree
The board will or the director shall from time to time require the marijuana cultivation facility to provide samples of the growing medium, soil amendments, fertilizers, crop production aids, pesticides, or water for random compliance checks	☒	☐

Describe the testing procedure and protocols the marijuana cultivation facility will follow:

Upon notification that the board or the director require samples for random compliance checks of the proposed facility, a licensee or an authorized agent of the proposed facility will notify an independent testing laboratory (of the states' choice if applicable) to send a representative to collect the required samples. This way, a chain of custody is established, and the possibility of unintentional contamination due to improper sample collection practices is minimized.

All marijuana product batches will be tested for a battery of state required impurities and/or contaminants by a state licensed lab in accordance with 3 AAC 306.455. The facility will collect random samples from homogeneous batches of individual strains of bud or flower in the amount required by the selected testing facility.

We will further select homogeneous samples from our standard cultivation facility for random testing during our growing cycles in order to ensure the highest of quality of standards are met.

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Form MJ-04: Marijuana Cultivation Facility

Section 6 – Security

Review the requirements under 3 AAC 306.430 and 3 AAC 306.470 – 3 AAC 306.475, and identify how the proposed premises will meet the listed requirements.

Applicants should be able to answer "Agree" to the two items below.

The marijuana cultivation facility applicant has:	Agree	Disagree
Read and understands and agrees to the packaging of marijuana requirements under 3 AAC 306.470	■	☐
Read and understands and agrees to the labeling of marijuana requirements under 3 AAC 306.475	■	☐

Restricted Access Area (3 AAC 306.430):

	Yes	No
Will the marijuana cultivation facility include outdoor production?	☐	■

If "Yes", describe the outdoor structure(s) or the expanse of open or clear ground fully enclosed by a physical barrier:

N/A

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Operating Plan Supplemental

Form MJ-04: Marijuana Cultivation Facility

Describe the method(s) used to ensure that any marijuana at the marijuana cultivation facility cannot be observed by the public from outside the facility:

The cultivation areas will be fully enclosed in sealed rooms in an enclosed building with authorized access entry only. The multi use area in which the grow rooms are located is completely void of windows and will insure that no plant or product will be observable by the public.

I certify that as a marijuana cultivation facility, I will submit monthly reports to the Department of Revenue and pay the excise tax required under AS 43.61.010 and 43.61.020 on all marijuana sold or provided as a sample to a marijuana establishment, as required under 3 AAC 306.480.

I declare under penalty of perjury that I have examined this form, including all accompanying schedules and statements, and to the best of my knowledge and belief find it to be true, correct, and complete.

Signature of licensee

Colin Koenig
Printed name

Subscribed and sworn to before me this 27th day of Dec, 2016.

Notary Public
LANCE C. WELLS
State of Alaska
My Commission Expires Jun 18, 2017

~~Notary Public in~~ and for the State of Alaska.

My commission expires: 6-18-17

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(Additional Space as Needed):

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STATE OF ALASKA

REVISION DATE: 19/02/2008

GROWTH TECHNOLOGY LTD

SAFETY DATA SHEET

According to 1907/2006/EC, article 31 (REACH)

CLONEX

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME	Clonex Rooting Hormone Gel (Purple)
MAP PRODUCT NUMBER (UK)	10676
SYNONYMS, TRADE NAMES	Clonex
SUPPLIER	Growth Technology Ltd. Unit 66, Taunton Trading Estate Taunton TA2 6RX United Kingdom Phone +44 1823 325291 Fax +44 1823 325487 info@growthtechnology.com
EMERGENCY TELEPHONE	+44 1823 325291 (office hours only)

2 HAZARDS IDENTIFICATION

Clonex improves the root formation in plants and is used for the propagation of plant cuttings. It contains indole butyric acid as the active ingredient, 2-hydroxyethylcellulose as viscosifier and crystal violet dye as colourant; these components are dissolved in water.

Indole butyric acid is a plant growth regulator.
2-Hydroxyethylcellulose is a viscosifier.
Crystal Violet Dye is a colourant.

CLASSIFICATION
Indole butyric acid is classified as an Agricultural Chemical and Pesticide. Mutagenic.
Crystal Violet Dye is classified as harmful, carcinogenic, irritant and dangerous to the environment.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC-No	CAS-No	Content	Classification
2-hydroxyethylcellulose		9004-62-0	1.2%	
indole butyric acid	205-101-5	133-32-4	0.3%	R25
crystal violet dye	208-953-6	548-62-9	0.0012%	
water			>98%	

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS
The Data shown are in accordance with the latest EC Directives

DISCLAIMER

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

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4 FIRST-AID MEASURES

INGESTION
If the person affected is conscious, have them drink large quantities of water, after which vomiting should be induce by a properly qualified person. Never give anything by mouth to an unconscious person.
Seek immediate medical assistance.

SKIN CONTACT
Remove contaminated clothing and wash skin with soap and plenty of running water.
Seek medical assistance.

EYE CONTACT
Rinse immediately eye with plenty of low pressure water for at least 15 minutes.
Remove any contact lenses.
Seek medical assistance.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA
The product is non combustible.
To extinguish fire use water spray, dry chemical, carbon dioxide, or chemical foam.

SPECIAL FIRE FIGHTING PROCEDURES
None.

UNUSUAL FIRE & EXPLOSION HAZARDS
None.

SPECIFIC HAZARDS
None.

PROTECTIVE MEASURES IN FIRE
Wear full protective clothing and MSHA/NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS
See section 8.

ENVIRONMENTAL PRECAUTIONS
Take precautionary measures against discharges into the environment.

SPILL CLEAN UP METHODS
Sweep up or absorb spilled material, then place into a suitable closed container for disposal as chemical waste.
Flush spill area with water. Product is slippery.

7 HANDLING AND STORAGE

USAGE PRECAUTIONS
Avoid contact with eyes, skin or clothing.
Wash thoroughly after handling and before eating, drinking or smoking.

STORAGE PRECAUTIONS
To protect product quality, store in sealed container out of direct sunlight.

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8 EXPOSURE CONTROLS/PERSONAL PROTECTION

PROTECTIVE EQUIPMENT
Protective gloves, safety goggles and protective clothing.

RESPIRATORY EQUIPMENT
Not applicable

HAND PROTECTION
Protective gloves should be used if there is the risk of direct contact or splash.

EYE PROTECTION
Wear approved safety goggles.

HYGIENE MEASURES
Wash at the end of each work shift and before eating, drinking, smoking or using the toilet.

SKIN PROTECTION
Wear apron or protective clothing in case of danger of contact.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	aqueous viscous solution with a slight odour
COLOUR	purple
BOILING POINT	about 100 degrees Celcius
SPECIFIC GRAVITY	approximately 1
pH – VALUE	7.0 – 8.0

10 STABILITY AND REACTIVITY

STABILITY
Stable under normal temperature conditions and recommended use.

MATERIALS TO AVOID
None

HAZARDOUS DECOMPOSITION PRODUCTS
None

11 TOXICOLOGICAL INFORMATION

GENERAL
The toxicological properties of indole butyric acid have not been fully investigated.

TOXIC DOSE 1 – LD50 (ORAL, RAT)

Indole butyric acid (undiluted)	>500 mg/kg
Crystal violet dye	420 mg/kg

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INGESTION
Indole butyric acid: toxic if swallowed. May cause irritation of the digestive track.
Crystal violet dye: harmful if swallowed.
2-hydroxyethyl cellulose: may cause mild irritation of the digestive track if swallowed in large amounts.

SKIN CONTACT
May cause irritation.

EYE CONTACT
May cause irritation.

12 ECOLOGICAL INFORMATION

ECOTOXICITY
Crystal Violet Dye is very toxic to aquatic organisms and may cause long term effects in the aquatic environment. It is however only present in this Product in a very low concentration.

WATER HAZARD CLASSIFICATION
none

13 DISPOSAL CONSIDERATIONS

GENERAL INFORMATION
Place into a suitable closed container for disposal as chemical waste.

DISPOSAL METHODS
Dispose of in accordance with local and national regulations.

14 TRANSPORT INFORMATION

GENERAL
The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID)

PACKAGING
50ml, 250ml, 1L, 5L, 25L.

15 REGULATORY INFORMATION

LABELLING	none	
CONTAINS	indole butyric acid, crystal violet dye	
RISK PHRASES	R25	Toxic if swallowed
SAFETY PHRASES	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advise
	S36/37	Wear suitable protective clothing and gloves
	S45	In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)

UK REGULATORY REFERENCES
Chemicals (Hazard Information & Packaging) Regulations. The Control of Substances Hazardous to Health Regulations 1988. Health and Safety at Work Act 1974.

ENVIRONMENTAL LISTING

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Control of Pollution Act 1974.

EU DIRECTIVES
System of specific information relating to Dangerous Preparations. 2001/58/EC. Dangerous Preparations Directive 1999/45/EC.

STATUTORY INSTRUMENTS
Notification of New Substances Regulations (NONS) 1993. The Export and Import of Dangerous Chemicals Regulations 2005 number 928.

APPROVED CODE OF PRACTICE
Classification and Labelling of Substances and Preparations Dangerous for Supply (EU 2001/59/EC). Safety Data Sheets for Substances and Preparations (REACH)

GUIDANCE NOTES
Workplace Exposure Limits EH40. Introduction to Local Exhaust Ventilation HS(G)37. CHIP for everyone HSG(108).

NATIONAL REGULATIONS
The Chemicals (Hazard Information and Packaging for Supply) Regulations 2002. No. 1689.
Workplace Exposure Limits 2005 (EH40).
The Carriage of Dangerous Goods and use of transportable pressure equipment regulations 2004.
Control of Substances hazardous to health regulations 2002 (as amended).

16 OTHER INFORMATION

ISSUED BY HS&E Manager

REVISION DATE: 19/02/2008

RISK PHRASES IN FULL
R25 Toxic if swallowed

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Material Safety Data Sheet: **Mammoth P**

Version No. 1 **Date of Preparation:** July 2015 *ANSI-Z400.1-2004 Format*

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: Mammoth P

Effective Date: 1 July 2015

Manufacturer's Product Code Numbers: **Please refer to page 4*

Manufacturer information: Growcentia, Inc.
1552 Riverside Dr
Fort Collins, CO 80524-4326
970-919-3321 (ph)

GENERAL USE: Mammoth P is specifically designed to increase phosphorous availability during the bloom phase, and should be used as a supplement to your regular fertilization program. Application during clone and vegetative phase will boost effectiveness. Mammoth P has a near-neutral pH formulation and runs clean in any system.

Section 2: HAZARDS IDENTIFICATION

WARNING: Mild eye irritant. Ingestion may lead to stomach or intestinal upset.

Eye Contact: Mild Eye Irritant.

Ingestion: Non-toxic, but may cause stomach or intestinal upset if swallowed.

Skin Contact: No adverse effects expected under typical use conditions. Use of gloves recommended.

Inhalation: No adverse effects expected under typical use conditions. Adequate ventilation should be present when using *Mammoth P* over a prolonged period of time. Open windows or ventilate via fan or other air-moving equipment if necessary.

Carcinogens: No ingredients are listed by OSHA, IARC, or NTP as known or suspected carcinogens.

Exposure limits: not available

Medical Conditions: No medical conditions are known to be aggravated by exposure to *Mammoth P*.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients: Bacterial culture (1%), pelletized alfalfa (2%), water (97%)

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CAS Number: Not available

Synonyms: Microbial biostimulant

Section 4: FIRST-AID MEASURES

Eye Contact: Reddening may develop. Immediately rinse the eye with large quantities of cool water; continue 10-15 minutes or until the material has been removed; be sure to remove contact lenses, if present, and to lift upper and lower lids during rinsing. Get medical attention if irritation persists.

Ingestion: Essentially non-toxic. Give several glasses of water to dilute; do not induce vomiting. If stomach upset occurs, consult physician.

Skin Contact: Minimal effects, if any; rinse skin with water, rinse shoes and launder clothing before reuse. Reversible reddening may occur in some dermal-sensitive users; thoroughly rinse area and get medical attention if reaction persists.

Inhalation: Non-toxic. Exposure to concentrate may cause mild irritation of nasal passages or throat; remove to fresh air. Get medical attention if irritation persists.

Section 5: FIRE-FIGHTING MEASURES

Mammoth P is stable, not flammable, and will not burn. No special procedures required.

Flash Point/Auto-Ignition: Not flammable.

Extinguishing Media: Not flammable/non-explosive.

Flammability Limits: Not flammable.

Special Fire Fighting Equipment/Procedures: None required.

Section 6: ACCIDENTAL RELEASE MEASURES

Method for cleaning up: Vacuum or use wet clean-up techniques and place in properly labeled and closed container. Dispose of collected material according to federal, state/provincial and local environmental regulations.

Spills and leaks: Contain the spill to prevent discharges to surface streams or storm sewers.

Section 7: HANDLING AND STORAGE

Handling: Protect eyes to prevent contact. Avoid prolonged or repeated exposure to skin.

Storage: Store out of direct sunlight and away from hot or cold extremes. Keep out of reach of children. Keep containers sealed until ready for use.

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Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: General mechanical ventilation can be expected to effectively remove and prevent build up of any dust generated from handling this product in a closed environment.

Personal Protection:
Eyes: Avoid contact with eyes.
Hands: Avoid skin contact by using gloves.
Respiratory: No respiratory protection required under normal conditions of use.
Other: Open wounds or skin surface disruptions should be covered with a chemical resistant patch to minimize absorption risks.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Cleaner is a dark brown/orange liquid.
Odor: earthy odor
Odor threshold: NA
pH: 5.6 ± 0.2
Melting point: NA
Freezing Point: Approx -2°C (30°F)
Boiling Point: 100.6°C (212°F)
Flash point: NA
Evaporation rate: NA
Flammability: Not flammable
Upper/lower flammability/explosive limits: Not flammable
Vapor Pressure: NA
Vapor Density: NA
Density: 1 oz/oz (1ml/g)
Water Solubility: 100%
Partition coefficient: NA
Auto-ignition temperature: NA
Decomposition temperature: NA
Viscosity: NA

Section 10: STABILITY AND REACTIVITY

Chemical Stability: This material is chemically stable under normal storage and handling conditions.

Hazardous Decomposition: When involved in a fire, burning may evolve noxious fumes which may include carbon monoxide, carbon dioxide, nitrous oxides, or other toxic compounds depending on the chemical composition and combustion conditions.

Hazardous Polymerization: Not known to occur.

Section 11: TOXOLOGICAL INFORMATION

Chronic Toxicity:	None known
Mutagenic Effects:	None known
Teratogenic Effects:	None known

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Developmental Toxicity: None known

Carcinogenic Effects: None known

Acute Effects on Humans: May cause skin, eye, and respiratory irritation.

Sensitization: Repeated or prolonged exposure to the substance at concentration above the exposure limits may cause respiratory tract and lung sensitization.

Existing Medical Conditions Aggravated: None known

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: No data available, however the material is not expected to have any deleterious toxic effect.

Environmental Fate: No data available regarding the environmental fate or biodegradation.

Section 13: DISPOSAL CONSIDERATION

EPA Waste Number: Non-hazardous waste

Treatment: Dispose of according to all federal, state/provincial and local environmental regulations.

Section 14: TRANSPORT INFORMATION

This product is non-hazardous for transport according to the U.S. Department of Transportation Services

UN Number: Not required

Dangerous Goods Class: Non-hazardous

This product is non-hazardous for storage and transport according to the U.S. Department of Transportation Regulations. *Mammoth P* requires no special labeling or placarding to meet U.S. Department of Transportation requirements.

Section 15: REGULATORY INFORMATION

US Federal Regulations:

Product Information: This product is not considered hazardous.

Section 16: OTHER INFORMATION

The information is furnished without warranty on 1 July 2015, representation, inducement or license of any kind, except that it is accurate to the best of Growcentia's knowledge. Because use conditions and applicable laws may differ from one location to another and may change with time, Recipient is responsible for determining whether the information is appropriate for recipient's use. Since Growcentia has no control over how this information may be ultimately used, all liability is expressly disclaimed and Growcentia assumes no liability.

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MATERIAL SAFETY DATA SHEET

SECTION I: CONTACT INFORMATION

MANUFACTURERS NAME:
HYDROPONIC RESEARCH INC.
ADDRESS:
2555 STATE ST.
SUITE 105
SAN DIEGO, CA 92101
TELEPHONE NUMBER: (800) 975-6860
DATE PREPARED: October 2nd, 2013

SECTION 1I: COMPOSITION & INGREDIENT INFORMATION

PRODUCT NAME: +LIFE

DESCRIPTION: Free flowing powdered microbial inoculant containing natural, non genetically altered beneficial soil microorganisms (bacteria, actinomycetes, fungi), microbial nutrients (dextrose, sucrose, amino acids, vitamin blend, natural silica), potassium sulfate, ferrous citrate, manganese EDTA

SECTION III: HAZARDS IDENTIFICATION

None of the ingredients in this material meet the definition of "Hazardous Chemical" 29 CFR1910.1200

EFFECTS OF OVEREXPOSURE: Acute: may cause slight eye & throat irritation
Chronic: None known
GENERAL PRECAUTIONS: Always practice good hygiene wash hands thoroughly after handling. Do not get in eyes or on skin. Do not ingest.
MEDICAL CONDITIONS RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE: None
PRIMARY ROUTE OF ENTRY: Eyes, skin
ATCC CLASSIFICATION: Bio-Safety Level 1

SECTION IV: FIRST AID INFORMATION

SKIN: Remove contaminated clothing and wash hands thoroughly after use. If irritation occurs consult with physician.
EYES: Flush eyes with cool water for 15 minutes, remove contact lenses and consult physician if irritation persists
INGESTION: If conscious rinse mouth and dilute with fluids. Consult physician or poison control for further treatment advice
INHALATION: Move person to fresh air and consult physician for further treatment advice.
NOTE TO PHYSICIAN (Antidote): N/A

SECTION V: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use appropriate media for underlying cause of fire.
SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus. Product is not flammable and can be quickly diluted with water.
FLASH POINT: N/A
SPECIAL FIRE HAZARDS: None
SPECIFIC HAZARDS: None

SECTION VI: ACCIDENTAL RELEASE MEASURES AND DISPOSAL

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wear protective equipment sweep up spill. Dispose of in accordance with local, state & federal regulations.

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REPORTABLE QUANTITY (RQ) UNDER CERCLA: NO

SECTION VII: STORAGE AND HANDLING

PRECAUTIONS TO BE TAKEN IN HANDLING & STORAGE: Do not get in eyes, breathe in dust or ingest. Upon contact wash affected area with soap and water. Store in original container with lid tightly secured. Store product in a cool, dry place on a pallet or rack system. Avoid excessive heat & sunlight.
OTHER: Always follow label directions.

SECTION VIII: EXPOSURE CONTROLS AND PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT
EYE / FACE PROTECTION: Eye protection (OSHA Approved) is recommended if potential for excessive dust exists
HAND / SKIN PROTECTION: Individuals with sensitive skin should wear OSHA approved gloves
RESPIRATORY PROTECTION: None Required
OTHER: Wear pants, shirt, shoes and socks
ENGINEERING CONTROLS:
Local exhaust or general ventilation to maintain exposure below PEL
NO PEL established

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: free flowing powder with characteristic fermentation odor
SOLUBILITY: partially soluble in water
BOILING POINT: N/A
MELTING POINT: 83° C
FREEZING POINT: N/A
EVAPORATION RATE: N/A
VAPOR DENSITY (Air = 1): N/A
SPECIFIC GRAVITY: 1.6
BULK DENSITY: N/A
pH (as is): 6 – 7 (10 % Slurry)

SECTION X: STABILITY AND REACTIVITY INFORMATION

HAZARDOUS DECOMPOSITION PRODUCT: None
INCOMPATIBILITY: Acids, bases, heat sources, reducing agents, disinfectants
STABILITY: Stable under normal conditions
HAZRDOUS POLYMERIZATION: None
CONDITIONS TO AVOID: Excessive moisture & heat during storage

SECTION XI: TOXICITY INFORMATION

ACUTE TOXICITY
Inhalation LD_{50}= N/E
Oral LD_{50}= N/E
Dermal LD_{50}= N/E

CARCINOGENICITY REFERENCE
I.A.R.C: No
N.T.P.: No
O.S.H.A.: No
OTHER (specify): No

SECTION XII: ECOLOGICAL INFORMATION

Avoid discharge in to streams, lakes, waterways & storm drains

SECTION XIII: TRANSPORTATION INFORMATION

DOT SHIPPING NAME: Not regulated
UN NUMBER: None
HAZARD CLASS: None (Non Hazardous)
PRIMARY HAZARD LABEL: None

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SUBSIDARY RISK LABEL: None
WHMIS CLASSIFICATION: N/A

SECTION XIV: REGULATORY INFORMATION

SARA 311

None of the ingredients are reportable under SARA 311

SARA 312

None of the ingredients are reportable under SARA 312

RCRA

This product does not contain any ingredients on RCRA P or U lists of Federal Hazardous Waste

OTHER

* None of the ingredients in this material meet the definition of "Hazardous Chemical" 29 CFR1910.1200

* This product does not contain any ingredients on the Clean Air Act (CAA) list of Hazardous Waste.

TO THE BEST OF OUR KNOWLEDGE THIS INFORMATION IS TRUE AND ACCURATE. SINCE THE INFORMATION CONTAINED HEREIN MAY BE APPLIED UNDER CONDITIONS BEYOND OUR CONTROL WE DO NOT ASSUME ANY RESPONSIBILITY FOR THE RESULTS OF ITS USE. THIS INFORMATION IS FURNISHED UPON THE CONDITION THAT THE PERSON RECEIVING THIS PRODUCT SHALL MAKE HIS / HER OWN DETERMINATION OF THE SUITABILITY OF THE MATERIAL FOR THEIR PARTICULAR PURPOSE. THIS INFORMATION IS PROVIDED IN GOOD FAITH BUT WITHOUT EXPRESSED OR IMPLIED WARRANTY. IT IS THE RESPONSIBILITY OF THE CUSTOMER TO TAKE APPROPRIATE PRECAUTIONS.

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MATERIAL SAFETY DATA SHEET

SECTION I: CONTACT INFORMATION

MANUFACTURERS NAME:
HYDROPONIC RESEARCH INC.
ADDRESS:
2555 STATE ST.
SUITE 105
SAN DIEGO, CA 92101
TELEPHONE NUMBER: (800) 975-6860
DATE PREPARED: October 2nd, 2013

SECTION 1I: COMPOSITION & INGREDIENT INFORMATION

PRODUCT NAME: +SIZE

DESCRIPTION : Free flowing powdered mineral complex containing monopotassium phosphite, magnesium sulfate, potassium sulfate, and other non-hazardous ingredients which are trade secret.
*Please refer to CAS info for above listed compounds and their
potential health hazards and recommended handling procedures.

SECTION III: HAZARDS IDENTIFICATION

EFFECTS OF OVEREXPOSURE: Acute: may cause slight eye & throat irritation

Chronic: None known

GENERAL PRECAUTIONS: Always practice good hygiene wash hands thoroughly after handling. Do not get in eyes or on skin. Do not ingest. Wear dust mask when handling.
MEDICAL CONDITIONS RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE: None PRIMARY ROUTE OF ENTRY: Eyes, skin, inhalation

SECTION IV: FIRST AID INFORMATION

SKIN: Remove contaminated clothing and wash hands thoroughly after use. If irritation occurs consult with physician.
EYES: Flush eyes with cool water for 15 minutes, remove contact lenses and consult physician if irritation persists
INGESTION: If conscious rinse mouth and dilute with fluids. Consult physician or poison control for further treatment advice
INHALATION: Move person to fresh air and consult physician for further treatment advice.
NOTE TO PHYSICIAN (Antidote): N/A

SECTION V: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use appropriate media for underlying cause of fire.
SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus. Product is not flammable and can be quickly diluted with water.
FLASH POINT: N/A
SPECIAL FIRE HAZARDS: None
SPECIFIC HAZARDS: None

SECTION VI: ACCIDENTAL RELEASE MEASURES AND DISPOSAL

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wear protective equipment sweep up spill. Dispose of in accordance with local, state & federal regulations.

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STATE OF ALASKA

Material Safety Data Sheet

Issue Date : October 2015

Product Name : **Hydroponic Research PUSH Foliar**
Not classified as hazardous

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product Name PUSH Foliar
Product Use Foliar applied supplemental nutritional product for plants Dilute to working strength of 13.2ml/litre.

Company Name Address Hydroponic Research Inc. 2555 State St. , San Diego, CA 92101

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients Name	CAS	Proportion	Hazard Symbol	Risk Phrase
Ingredients determined not to be hazardous.		60-100 %		

3. HAZARDS IDENTIFICATION

Human Health Effects No specific hazards under normal use conditions. Prolonged or repeated exposure may irritate the skin.
Safety Hazards Not classified as flammable or combustible.
Environmental Hazards Not classified as dangerous to the environment.

4. FIRST AID MEASURES

Inhalation Remove the source of contamination or move the victim to fresh air. If symptoms develop seek medical attention.
Ingestion Do NOT induce vomiting. Wash out mouth with water. Do not give anything by mouth to an unconscious person. Seek immediate medical attention.
Skin Wash affected area thoroughly with soap and water. If symptoms develop seek medical attention.
Eye If contact with the eye(s) occur, wash with running water holding eyelid(s)open. Take care not to rinse contaminated water into the non-affected eye. In all cases of eye contamination it is a sensible precaution to seek medical advice.
First Aid Facilities Normal washroom facilities.
Advice to Doctor Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing Media Use media suitable for surrounding area.
Specific Methods Not combustible. Contains nitrates, if aqueous portion evaporates then material may accelerate burning when involved in a fire.
Specific Hazards Self-contained breathing apparatus (S.C.B.A) and full protective clothing should be worn to minimise exposure.

6. ACCIDENTAL RELEASE MEASURES

Other Information Increase ventilation. Evacuate all unnecessary personnel. Wear protective clothing to minimise skin and eye exposure. If possible contain the spill. Place inert absorbent such as vermiculite, sand or dirt onto material. Mop up material and place into the same container.

7. HANDLING AND STORAGE

Handling When dealing with large quantities, repeated or prolonged exposure without protection should be avoided.
Storage Store in a cool, dry, well ventilated area, out of direct sunlight. Keep containers closed when not in use. Store in suitable, labelled containers.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Exposure Limits No exposure limits have been established for this material.

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Issue Date : October 2015

Product Name : **PUSH Foliar**

Not classified as hazardous

Respiratory Protection	Not normally required. Where ventilation or engineering controls are not effective in controlling airborne exposure then an approved respirator should be used.
Eye Protection	Safety glasses with side shields or goggles should be worn.
Hand Protection	Where skin contact is likely to be prolonged or repeated impervious PVC or nitrile rubber gloves are recommended
Body Protection	Overalls or similar protective clothing.
Eng. Controls	Where excessive vapours or mists are generated, the use of respiratory protection, or a local exhaust ventilation system is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	dark brown solution
Melting Point	Not available.
Boiling Point	Not available.
Solubility in Water	Soluble.
Specific Gravity (H2O=1)	Approx. 1
pH Value	2.7
Vapour Pressure	Not available.
Flash Point	Not applicable.
Flammability	Not combustible.
Flammable Limits LEL	Not applicable.
Flammable Limits UEL	Not applicable.

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions of storage and handling.
Hazardous Polymerization	Will not occur.
Materials to Avoid	Not known
Hazardous Decomposition Products	Not known

11. TOXICOLOGICAL INFORMATION

Toxicology Information	No toxicity data is available for this product.
Inhalation	Inhalation of product vapours may cause slight irritation of the upper respiratory tract.
Ingestion	Ingestion of this product may irritate the gastric tract.
Skin	The material may be slightly irritating to the skin.
Eye	The material may be slightly irritating eyes.
Chronic Effects	Prolonged or repeated skin contact may cause irritation.

12. ECOLOGICAL INFORMATION

	No data available for this product.
Environ. Protection	Avoid large quantities of this material from entering the environment.

13. DISPOSAL CONSIDERATIONS

Waste Disposal	Dispose according to the local legislation.

14. TRANSPORT INFORMATION

	Not dangerous for transport.
	None Allocated
U.N. Number	None Allocated
Proper Shipping Name	

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Material Safety Data Sheet

Issue Date : October 2015	
Product Name :	**PUSH Foliar** Not classified as hazardous according to criteria of NOHSC
DG Class	None Allocated

15. REGULATORY INFORMATION

Risk Phrase	Not classified.
Safety Phrase	Not classified.
Poisons Schedule	Not Scheduled
Packaging & Labelling	No special packaging or labeling requirements.

16. OTHER INFORMATION

...End Of MSDS...

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MATERIAL SAFETY DATA SHEET

SECTION I: CONTACT INFORMATION

MANUFACTURERS NAME:
HYDROPONIC RESEARCH INC.
ADDRESS:
2555 STATE ST.
SUITE 105
SAN DIEGO, CA 92101
TELEPHONE NUMBER: (800) 975-6860
DATE PREPARED: January 1st, 2016

SECTION 1I: COMPOSITION & INGREDIENT INFORMATION

PRODUCT NAME: SHINE

DESCRIPTION : Free flowing powdered mineral complex containing monopotassium phosphite, magnesium sulfate, potassium sulfate, and other non-hazardous ingredients which are trade secret. *Please refer to CAS info for above listed compounds and their potential health hazards and recommended handling procedures.

SECTION III: HAZARDS IDENTIFICATION

EFFECTS OF OVEREXPOSURE: Acute: may cause slight eye & throat irritation
Chronic: None known

GENERAL PRECAUTIONS: Always practice good hygiene wash hands thoroughly after handling. Do not get in eyes or on skin. Do not ingest. Wear dust mask when handling.
MEDICAL CONDITIONS RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE: None PRIMARY ROUTE OF ENTRY: Eyes, skin, inhalation

SECTION IV: FIRST AID INFORMATION

SKIN: Remove contaminated clothing and wash hands thoroughly after use. If irritation occurs consult with physician.
EYES: Flush eyes with cool water for 15 minutes, remove contact lenses and consult physician if irritation persists
INGESTION: If conscious rinse mouth and dilute with fluids. Consult physician or poison control for further treatment advice
INHALATION: Move person to fresh air and consult physician for further treatment advice.
NOTE TO PHYSICIAN (Antidote): N/A

SECTION V: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use appropriate media for underlying cause of fire.
SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus. Product is not flammable and can be quickly diluted with water.
FLASH POINT: N/A
SPECIAL FIRE HAZARDS: None
SPECIFIC HAZARDS: None

SECTION VI: ACCIDENTAL RELEASE MEASURES AND DISPOSAL

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wear protective equipment sweep up spill. Dispose of in accordance with local, state & federal regulations.

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MATERIAL SAFETY DATA SHEET

GENERAL HYDROPONICS pH Up™

7/28/06

SECTION 1. MATERIAL IDENTIFICATION

Product Name: pH Up™

Chemical Family: Alkali.

Product Use: To raise the pH of hydroponic nutrient solutions and plant fertilizers.

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

For Chemical Emergency

Spill Leak Fire Exposure or Accident:

Call CHEMTREC Day or Night

DOMESTIC NORTH AMERICA 800-424-9300

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

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

The percentage of mixture information for pH Up™ is withheld as a trade secret. The basic ingredients of pH Up™ are potassium carbonate and potassium silicate.

SECTION 3. HAZARDS IDENTIFICATION

*** Emergency Overview ***

WARNING! CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY BE HARMFUL IF SWALLOWED.

Potential Health Effects

Primary Entry Routes: Ingestion, inhalation, skin, eyes.

Target Organs: Mucous membrane of the respiratory system, eyes, and skin.

Acute Effects:

- **Ingestion:** Irritation and possible burns to gastrointestinal system.
- **Inhalation:** Irritation and possible burn of mucous membranes.
- **Eye:** Severe burns.
- **Skin:** Severe irritation and burns.

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

Medical Conditions Aggravated by Long- Term Exposure: Pre-existing skin disorders.

Chronic Effects: Same as acute.

Other: None

Section 4. FIRST AID MEASURES

Ingestion: Never give anything by mouth to an unconscious or convulsing person. Dilute the alkali by feeding water or milk, and seek immediate medical help.

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 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: Not flammable.

Auto-ignition Temperature: Not flammable.

LEL: Unknown.

Flammability Classification: Not flammable.

Burning Rate: Not flammable.

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: Unknown.

Fire Fighting Instructions: 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: Use personal protective equipment, neutralize with weak acid (acetic), and place in closed container for disposal. Flush spill area with water. In case of large spill, clear the area and notify appropriate emergency response activity.

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

SECTION 7. HANDLING AND STORAGE

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Handling Precautions: Avoid contact with skin and eyes, inhalation of aerosols and ingestion. Wear an appropriate NIOSH-approved respirator for protection where airborne concentrations are excessive. Respirator usage must be in accordance with OSHA requirements (29 CFR 1910.134).

Storage Requirements: Store as a corrosive in tightly closed containers away from acids.

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 inhalation, ingestion, skin and eye contact.

Respiratory Protection: If this product is used as directed, respiratory protection is not required. Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/ NIOSH-approved respirator. If respirators are used, OSHA requires a written respiratory protection program that includes, at least: medical certification, training, fit testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/ Equipment: Use gloves and aprons while using.

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Odor and Physical State: Blue liquid.

Odor Threshold Range: Odorless.

Vapor Pressure: Unknown.

pH: 12.

Specific Gravity: 1.09.

Water Solubility: Completely soluble.

Other Solubility's: Unknown.

Boiling Point: 212^{0}F.

Freezing Point: 32^{0}F Viscosity: Unknown.

SECTION 10. STABILITY AND REACTIVITY

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

Polymerization: Hazardous polymerization cannot occur.

Chemical Incompatibilities: Acids, metals (aluminum, zinc, tin), organics, nitrocarbons, halocarbons,

Conditions to Avoid: High temperatures and flames.

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Hazardous Decomposition Products: Carbon dioxide and possibly carbon monoxide.

SECTION 11. TOXICOLOGICAL INFORMATION

The toxicity of the combination of the chemicals in the concentrations used in General Hydroponics pH Up™ is unknown.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity: Unknown

Environmental Fate: Not expected to be significant. Physical removal from air can occur via rainfall.

Environmental Degradation: Unknown.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal: Follow Federal, State, and local regulations.

SECTION 14. TRANSPORTATION INFORMATION

Do not transport with food and feedstuff

Proper Shipping Name: Corrosive mixture, liquid, basic, inorganic, n.o.s.

Hazard Class: 8

UN/NA: 3266

Packing Group: III

.

SECTION 15. REGULATORY INFORMATION

EPA Regulations: Not listed

SECTION 16. OTHER INFORMATION

General Hydroponics pH Up™ is a plant nutrition aid. 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.

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MATERIAL SAFETY DATA SHEET

SECTION I: CONTACT INFORMATION

MANUFACTURERS NAME:
HYDROPONIC RESEARCH INC.
ADDRESS:
2555 STATE ST.
SUITE 105
SAN DIEGO, CA 92101
TELEPHONE NUMBER: (800) 975-6860
DATE PREPARED: October 2nd, 2013

SECTION 1I: COMPOSITION & INGREDIENT INFORMATION

PRODUCT NAME: VEG+BLOOM (ALL FORMULAS)

DESCRIPTION : Free flowing powdered mineral complex containing monopotassium phosphate, potassium sulfate, magnesium sulfate, potassium nitrate, calcium nitrate, borax, iron EDTA, ammonium molybdenum, manganese EDTA, and other non-hazardous ingredients which are trade secret. *Please refer to CAS info for above listed compounds and their potential health hazards and recommended handling procedures.

SECTION III: HAZARDS IDENTIFICATION

EFFECTS OF OVEREXPOSURE: Acute: may cause slight eye & throat irritation

Chronic: None known

GENERAL PRECAUTIONS: Always practice good hygiene wash hands thoroughly after handling. Do not get in eyes or on skin. Do not ingest. Wear dust mask when handling.
MEDICAL CONDITIONS RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE: None PRIMARY ROUTE OF ENTRY: Eyes, skin, inhalation

SECTION IV: FIRST AID INFORMATION

SKIN: Remove contaminated clothing and wash hands thoroughly after use. If irritation occurs consult with physician.
EYES: Flush eyes with cool water for 15 minutes, remove contact lenses and consult physician if irritation persists
INGESTION: If conscious rinse mouth and dilute with fluids. Consult physician or poison control for further treatment advice
INHALATION: Move person to fresh air and consult physician for further treatment advice.
NOTE TO PHYSICIAN (Antidote): N/A

SECTION V: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use appropriate media for underlying cause of fire.
SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus. Product is not flammable and can be quickly diluted with water.
FLASH POINT: N/A
SPECIAL FIRE HAZARDS: None
SPECIFIC HAZARDS: None

SECTION VI: ACCIDENTAL RELEASE MEASURES AND DISPOSAL

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wear protective equipment sweep up spill. Dispose of in accordance with local, state & federal regulations.

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REPORTABLE QUANTITY (RQ) UNDER CERCLA: NO

SECTION VII: STORAGE AND HANDLING

PRECAUTIONS TO BE TAKEN IN HANDLING & STORAGE: Do not get in eyes, breathe in dust or ingest. Upon contact wash affected area with soap and water. Store in original container with lid tightly secured. Store product in a cool, dry place on a pallet or rack system. Avoid excessive heat & sunlight.
OTHER: Always follow label directions.

SECTION VIII: EXPOSURE CONTROLS AND PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT
EYE / FACE PROTECTION: Eye protection (OSHA Approved) is recommended if potential for excessive dust exists
HAND / SKIN PROTECTION: Individuals with sensitive skin should wear OSHA approved gloves
RESPIRATORY PROTECTION: None Required
OTHER: Wear pants, shirt, shoes and socks
ENGINEERING CONTROLS:
Local exhaust or general ventilation to maintain exposure below PEL
NO PEL established

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: free flowing powder
SOLUBILITY: soluble in water
BOILING POINT: N/A
MELTING POINT: N/A
FREEZING POINT: N/A
EVAPORATION RATE: N/A
VAPOR DENSITY (Air = 1): N/A
SPECIFIC GRAVITY: N/A
BULK DENSITY: N/A
pH (as is): 5-6

SECTION X: STABILITY AND REACTIVITY INFORMATION

HAZARDOUS DECOMPOSITION PRODUCT: None
INCOMPATIBILITY: Heat sources, reducing agents
STABILITY: Stable under normal conditions
HAZRDOUS POLYMERIZATION: None
CONDITIONS TO AVOID: Excessive moisture & heat during storage

SECTION XI: TOXICITY INFORMATION

ACUTE TOXICITY
Inhalation LD_{50}= N/E
Oral LD_{50}= N/E
Dermal LD_{50}= N/E

CARCINOGENICITY REFERENCE
I.A.R.C: No
N.T.P.: No
O.S.H.A.: No
OTHER (specify): No

SECTION XII: ECOLOGICAL INFORMATION

Avoid discharge in to streams, lakes, waterways & storm drains

SECTION XIII: TRANSPORTATION INFORMATION

DOT SHIPPING NAME: Not regulated
UN NUMBER: None
HAZARD CLASS: None (Non Hazardous)
PRIMARY HAZARD LABEL: None

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SUBSIDARY RISK LABEL: None
WHMIS CLASSIFICATION: N/A

SECTION XIV: REGULATORY INFORMATION

SARA 311

None of the ingredients are reportable under SARA 311

SARA 312

None of the ingredients are reportable under SARA 312

RCRA

This product does not contain any ingredients on RCRA

TO THE BEST OF OUR KNOWLEDGE THIS INFORMATION IS TRUE AND ACCURATE. SINCE THE INFORMATION CONTAINED HEREIN MAY BE APPLIED UNDER CONDITIONS BEYOND OUR CONTROL WE DO NOT ASSUME ANY RESPONSIBILITY FOR THE RESULTS OF ITS USE. THIS INFORMATION IS FURNISHED UPON THE CONDITION THAT THE PERSON RECEIVING THIS PRODUCT SHALL MAKE HIS / HER OWN DETERMINATION OF THE SUITABILITY OF THE MATERIAL FOR THEIR PARTICULAR PURPOSE. THIS INFORMATION IS PROVIDED IN GOOD FAITH BUT WITHOUT EXPRESSED OR IMPLIED WARRANTY. IT IS THE RESPONSIBILITY OF THE CUSTOMER TO TAKE APPROPRIATE PRECAUTIONS.

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STATE OF ALASKA

MATERIAL SAFETY DATA SHEET

GENERAL HYDROPONICS pH Down™

3/12/09

SECTION 1. MATERIAL IDENTIFICATION

Product Name: pH Down™

Chemical Family: Corrosive mixture of acids in aqueous solution

Product Use: To lower the pH of hydroponic nutrient solutions and plant fertilizers.

Manufactured by: General Hydroponics, 3789 Vine Hill Rd. Sebastopol CA 95472

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

SECTION 2, COMPOSITION / INFORMATION ON INGREDIENTS

The percentage of mixture information for pH Down™ is withheld as a trade secret. The basic ingredients of pH Down™ are phosphoric acid, citric acid, and mono ammonium phosphate.

SECTION 3. HAZARDS IDENTIFICATION

***** Emergency Overview *****

DANGER! CORROSIVE. CAUSES SEVERE IRRITATION AND BURNS TO EVERY AREA OF CONTACT. HARMFUL IF SWALLOWED OR INHALED.

Potential Health Effects:

Primary Entry Routes: Ingestion, inhalation, skin.

Target Organs: Gastrointestinal and respiratory tract.

Acute Effects:

- **Ingestion:** severe digestive tract irritation with possible burns.
- **Inhalation:** irritation and possible burns.
- **Eye,** severe burns.
- **Skin:** severe irritation and burns.

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

Medical Conditions Aggravated by Long-term Exposure: Unknown.

Chronic Effects: Same as acute.

Other: None.

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STATE OF ALASKA

Section 4. FIRST AID MEASURES

Ingestion: Never give anything by mouth to an unconscious or convulsing person. Rinse out the mouth drink two to four cups of milk. **Do not induce vomiting.** See 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. 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: Not flammable.

Auto-ignition Temperature: Not flammable.

LEL: Unknown

Flammability Classification: Not flammable.

Burning Rate: Not flammable.

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: Unknown.

Fire-Fighting Instructions: 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: Use personal protective equipment, cover with dry lime or soda ash, and place in closed container for disposal. Flush spill area with water. In case of large spill, clear the area and notify appropriate emergency response activity.

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

SECTION 7. HANDLING AND STORAGE

Handling Precautions: Use only in well-ventilated areas. Avoid contact with skin and eyes; avoid inhalation of aerosols and ingestion. Wear an appropriate NIOSH-approved respirator for protection where airborne concentrations are excessive. Respirator usage must be in accordance with OSHA requirements (29 CFR 1910.134).

Storage Requirements: store as a corrosive in tightly closed containers away from incompatible materials.

Regulatory Requirements: Follow applicable OSHA regulations.

SECTION 8. EXPOSURE CONTROLS/Personal Protection

Airborne Exposure Limits for Phosphoric Acid:

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-OSHA Permissible Exposure Limit (PEL):1 mg/m3 (TWA)

-ACGIH Threshold Limit Value (TLV):1 mg/m3 (TWA), 3 mg/m3 (STEL)

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

Administrative Controls: Avoid inhalation, ingestion, skin and eye contact. **Do not mix with solutions containing bleach or ammonia.**

Respiratory Protection: If this product is used as directed, respiratory protection is not required. Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/ NIOSH-approved respirator. If respirators are used, OSHA requires a written respiratory protection program that includes, at least: medical certification, training, fit testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/ Equipment: Wear gloves and aprons while using.

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Odor and Physical State: Yellow liquid.

Odor Threshold Range: Odorless.

Vapor Pressure: @20°C 17.5mm.

Water Solubility: Completely soluble.

Other Solubilities: Unknown.

pH: 1.2

Specific Gravity: 1.13

Boiling Point: 104° C.

Freezing Point: -8° C.

Viscosity: 1.00 $mNsm^{-2}$

SECTION 10. STABILITY AND REACTIVITY

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

Polymerization: Hazardous polymerization cannot occur.

Chemical Incompatibilities: General Hydroponics pH Down™ can react with, alkali's (bases), aldehydes, amines, amides, alcohol's, glycol's, azo-compounds, carbamates, cresols, esters, phenols, metals, metal nitrates, oxides, strong caustics, solutions containing bleach or ammonia.

Conditions to Avoid: Do not mix with ammonia or bleach. Do not put in metal containers. Do not expose to excessive heat.

Hazardous Decomposition Products: Oxides of phosphorus.

SECTION 11. TOXICOLOGICAL INFORMATION

The toxicity of the combination of the chemicals, in the concentrations used in General Hydroponics pH

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Down™ is unknown. The rat oral, LD50 for phosphoric acid is 1,530 mg/kg and the rabbit skin, LD50 is 220 mg/kg.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity: Unknown.

Environmental Fate: Not expected to be significant. Physical removal from air can occur via rainfall.

Environmental Degradation: Unknown.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal: Follow Federal, State, and local regulations.

SECTION 14. TRANSPORTATION INFORMATION

Do not transport with food and feedstuff

Proper Shipping Name: Phosphoric acid mixture

Hazard Class: 8 Canadian 8 (9.2)

UN/NA: UN 1805

Packing Group: III

SECTION 15. REGULATORY INFORMATION

EPA Regulations: Not listed

SECTION 16. OTHER INFORMATION

General Hydroponics pH Down™ is a plant nutrition aid. 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.

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