MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFIER	Final Flush (Regular, Blueberry, Strawberry, Piña Colada, Green Apple, Grapefruit)						
PRODUCT USE	Media Flush Solution						
MANFACTURERS NAME	Greenstar Plant Products Inc.			**SUPPLIERS NAME**			
STREET ADDRESS	9430 198th Street			**STREET ADDRESS**			
CITY	Langley	**PROVINCE**	BC	**CITY**		**PROVINCE**	
POSTAL CODE	V1M 3C8	**EMERGENCY TELEPHONE**	604-882-7699	**POSTAL CODE**		**EMERGENCY TELEPHONE**	
DATE	Sept 18, 2013	**PREPARED BY**	Greenstar Plant Products Inc.			**PHONE NUMBER**	

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

PRODUCT INGREDIENTS	CAS	EINECS / ELINCS
Citric acid	77-92-9	201-069-1
L-Ascorbic acid (Vitamin C)	50-81-7	200-066-2

SECTION 3 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	
Corrosive solution. Expected to cause eye, skin and respiratory tract irritation	
EFFECTS OF ACUTE EXPOSURE TO PRODUCT	
EYE CONTACT	Expected to cause mild to moderate eye irritation
SKIN CONTACT	Expected to be a mild skin irritant
INHALATION	Inhalation of mists is expected to cause mild respiratory irritation
INGESTION	DO NOT INGEST. Ingestion may cause irritation of the gastrointestinal tract

SECTION 4 – FIRST AID MEASURES

EYE CONTACT	Immediately flush eyes with a large gentle stream of water while holding eyelids open for a minimum of 15 minutes. Seek medical attention if irritation persists
SKIN CONTACT	Remove contaminated clothing. Flush area with plenty of water for 15 minutes. Launder contaminated clothes before re-using. Seek medical attention if irritation occurs
INHALATION	Move victim to fresh air. Seek medical attention if irritation persists
INGESTION	DO NOT INDUCE VOMITING. If victim is conscious, alert and not convulsing, offer a glass of water to dilute material. Never give anything by mouth to an unconscious person. If vomiting occurs, have victim lean forward with head down to avoid breathing in vomit, rinse mouth. Seek medical attention.

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FINAL FLUSH

SECTION 5 – FIRE FIGHTING MEASURES

FLAMMABLE	Product will not burn or support combustion				
MEANS OF EXTINCTION	Use media appropriate for the surrounding fire				
FLASHPOINT & METHOD	NAP	**UPPER FLAMMABLE LIMIT**	NAP	**LOWER FLAMMABILITY LIMIT**	NAP
AUTO IGNITION TEMPERATURE	NAP	**SENSITIVITY TO IMPACT**	NAV	**SENSITIVITY TO STATIC DISCHARGE**	NAV
HAZARDOUS COMBUSTION PRODUCTS	Carbon dioxide, carbon monoxide are the products of complete combustion. Incomplete combustion may produce irritating fumes and acrid smoke				

SECTION 6 – ACCIDENTAL RELEASE MEASURES

LEAK & SPILL PROCEDURES	Wear personal protection equipment outlined in SECTION 8. Adsorb with inert material and place into appropriate containers for disposal. After cleanup, flush area with water. Do not allow product to enter drains or the environment

SECTION 7 – HANDLING AND STORAGE

HANDLING	Wear personal protection equipment outlined in SECTION 8. Avoid eye and skin contact. Avoid inhalation of mists. Wash hands thoroughly after handling. Remove and wash contaminated clothing before reuse.
STORAGE	Store in a cool dry well ventilated area

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

EXPOSURE LIMITS	NAV
ENGINEERING CONTROLS	If there is a possibility of mist generation, use a combination of local and general exhaust to keep airborne concentrations as low as possible

PERSONAL PROTECTIVE EQUIPMENT

Eyes: chemical safety glasses or goggles

Skin: butyl or PVC gloves

Respirator: not needed under normal conditions of use. Use a NIOSH approved respirator if there is a potential for the creation of mists or in the event of a fire

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid	**APPEARANCE**	Clear	**COLOUR**	Various colours
EVAPORATION RATE	NAV	**SPECIFIC GRAVITY**	NAV	**ODOUR**	NAV
PH	2.55	**SOLUBILITY IN WATER**	I00% soluble	**ODOUR THRESHHOLD**	NAV

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SECTION 10 – STABILITY AND REACTIVITY

CHEMICAL STABILITY	Stable under normal conditions of use
INCOMPATABILITY WITH OTHER SUBSTANCES	Avoid contact with strong bases, strong reducing agents, strong oxidizing agents metal nitrates, iron and copper
HAZARDOUS DECOMPOSITION RODUCTS	Carbon dioxide and carbon monoxide are produced during a fire

SECTION 11 – TOXICOLOGICAL INFORMATION

ACUTE TOXICITY	**L-Ascorbic Acid** LD_{50} (oral, rat) 3 gm / kg LD_{50} (oral, mouse) 3367 mg / kg **Citric Acid** LD_{50} (oral, rat) 3 gm / kg LD_{50} (oral, mouse) 5040 mg / kg
CHRONIC TOXICITY	**L- Ascorbic acid:** target organs for toxicity are the gastrointestinal tract, kidneys and blood. Investigated as an in-vivo tumorigen, and reproductive effector in animals with inconclusive results **Citric Acid:** repeated ingestion may cause erosion of dental enamel and gastrointestinal irritation
IRRITANCY OF PRODUCT	Expected to be an eye, skin and gastrointestinal irritant based on product pH
SENSITIZATION	NAV
CARCINOGENICITY	Ingredients not listed by ACGIH, IARC, NTP, or CA Prop 65. **L-Ascorbic acid:** some evidence that oral ascorbic acid may amplify the carcinogenic effects of other agents (HSDB)
TUMORIGENICITY	**L-Ascorbic acid:** some evidence that oral ascorbic acid is a tumorigen or facilitates the action of know carcinogen (RTECS)
DEVELOPMENTAL / REPRODUCTIVE TOXICITY	**L-Ascorbic acid:** some evidence in animals – still births, reduced weight gain (RTECS)
MUTAGENICITY	**L-Ascorbic acid:** in vitro mutation to human lymphocytes and microorganisms. No conclusive evidence of mutation in vivo **Citric acid:** No evidence

SECTION 12 – ECOLOGICAL INFORMATION

ECOTOXICITY	**L-Ascorbic Acid:** **Environmental Fate – soil:** expected to have very high mobility in soil. Moderately biodegradable. **Environmental Fate – water:** not expected to adsorb to suspended solids or sediments. Potential to bioconcentrate in aquatic organisms is expected to be low. Breakdown by hydrolysis is expected to be an important environmental fate process **Ecotoxicity:** LC_{50} Oncorhynchus mykiss (rainbow trout) 1020 mg / L, 96 hr

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FINAL FLUSH	
ECOTOXICITY	**Citric Acid:** **Environmental Fate – soil:** expected to have very high mobility in soil. Moderately biodegradable. **Environmental Fate – water:** not expected to adsorb to suspended solids or sediment. Readily biodegrable in aquatic environments. Hydrolysis is not expected to be an important environmental fate process **Ecotoxicity:** LC_{50} Carcinus maenas (Green or European shore crab) 160 mg/L/48 hr

SECTION 13 – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL	Dispose of in accordance with Federal, Provincial and Municipal regulations

SECTION 14 – TRANSPORT INFORMATION

SHIPPING	**TDG:** Not regulated for transport **DOT:** Not regulated for transport

SECTION 15 – REGULATORY INFORMATION

WHMIS: Not a WHMIS controlled substance
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by CPR

SECTION 16 – OTHER INFORMATION

As of the date of this document, the foregoing information is believed to be accurate and is provided in good faith to comply with applicable laws. However, no warranty or representation of law or fact, with respect to such information is intended or given

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