



MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFIER		SUPER GREEN ALUMINUM SULPHATE					
PRODUCT USE		Horticultural soil acidifier					
MANUFACTURERS NAME		Greenstar Plant Products Inc.		SUPPLIERS NAME			
STREET ADDRESS		#284-505-8840 210 th STREET		STREET ADDRESS			
CITY	Langley	PROVINCE	BC	CITY		PROVINCE	
POSTAL CODE	V1M 2Y2	EMERGENCY TELEPHONE	604-882-7699	POSTAL CODE		EMERGENCY TELEPHONE	
DATE	April 14, 2016	PREPARED BY	Greenstar Plant Products Inc.			PHONE NUMBER	

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

PRODUCT INGREDIENTS	%	CAS
Aluminum Sulphate Anhydrous	100	10043-01-3

SECTION 3 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	
EYE IRRITANT. Causes moderate to severe eye irritation. Product can decompose at high temperatures forming corrosive sulphur dioxide and / or sulphur trioxide gases. May be irritating to skin in the presence of moisture.	
EFFECTS OF ACUTE EXPOSURE TO PRODUCT: This product hydrolyzes in water to form sulfuric acid, which is responsible for the irritating effects given below.	
EYE CONTACT	Moderate to severe eye irritant
SKIN CONTACT	Mild irritation may occur. Product poorly absorbed through skin.
INHALATION	Irritation of nose, throat and lungs causing coughing, wheezing and/or shortness of breath.
INGESTION	Ingestion of large amounts may cause digestive tract irritation (nausea and vomiting), incoordination, muscle spasms. Kidney, liver and blood changes.
EFFECTS OF CHRONIC EXPOSURE TO PRODUCT	
Product investigated for connection between long term aluminum exposure and neurological diseases. No conclusive evidence to date. Some evidence of asthma-like symptoms with long term exposure to dust. Prolonged or repeated exposure of skin to the product may cause irritation, redness, dryness and cracking. Repeated ingestion may cause kidney, liver and blood changes.	

SECTION 4 – FIRST AID MEASURES

EYE CONTACT	Immediately flush eye(s) with gently flowing water for 20 minutes, while holding the eyelids open. Seek medical attention.
SKIN CONTACT	Immediately flush skin with plenty of water for a minimum of 15 minutes. Remove contaminated clothing, and shoes. Seek medical attention if irritation persists. Wash clothing before reuse.
INHALATION	Move victim to fresh air. Allow the victim to rest in a well ventilated area. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and seek immediate medical attention.

MATERIAL SAFETY DATA SHEET

SUPER GREEN ALUMINUM SULPHATE

INGESTION	Never give anything by mouth to an unconscious person. If victim is alert and not convulsing, rinse mouth and give 2-4 cupfuls of milk or water to dilute material. DO NOT induce vomiting without physician's direction. If vomiting occurs naturally, have victim lean forward with head down to avoid breathing in vomit, rinse mouth. Obtain immediate medical attention.
------------------	---

SECTION 5 – FIRE FIGHTING MEASURES

FLAMMABLE	Not flammable				
MEANS OF EXTINCTION	Use dry chemicals or carbon dioxide. To avoid the formation of sulphuric acid, water and foam should be avoided. If it is necessary to use water and / or foam, proceed with caution.				
FLASHPOINT & METHOD	Not applicable	UPPER FLAMMABLE LIMIT	Not applicable	LOWER FLAMMABILITY LIMIT	Not applicable
AUTO IGNITION TEMPERATURE	Not applicable	SENSITIVITY TO IMPACT	Not applicable	SENSITIVITY TO STATIC DISCHARGE	Not applicable

Approach the fire from upwind to avoid hazardous gases. Closed containers may explode violently when heated. As the decomposition products of aluminum sulphate are corrosive and toxic, wear chemical resistant clothing (e.g. chemical splash suit) and positive pressure self-contained breathing apparatus (MSHA / NIOSH approved or equivalent) – see SECTION 8 for details.

HAZARDOUS COMBUSTION PRODUCTS	Decomposes at 770 °C. May form corrosive and toxic aluminum oxide, sulphur dioxide and / or sulphur trioxide at high temperatures. When mixed with water will cause corrosive sulphuric acid which gives off flammable hydrogen gas
--------------------------------------	---

SECTION 6 – ACCIDENTAL RELEASE MEASURES

LEAK & SPILL PROCEDURES	<p>Restrict access to area until clean-up is complete. Ventilate area of spill if safe to do so. Wear appropriate personal protective equipment as specified in SECTION 8. Small Spill: Shovel into dry labeled containers, and cover. Flush area with water. DO NOT get water into containers. Large Spill: Contact fire department for clean-up advice.</p> <p>Spilled aluminum sulfate becomes slippery when it absorbs moisture from the air which could pose a fall hazard. Water combined with aluminum sulphate forms corrosive sulphuric acid, which gives off flammable hydrogen gas.</p>
------------------------------------	--

SECTION 7 – HANDLING AND STORAGE

HANDLING	Avoid contact with skin and eyes. Avoid generating dusts.
STORAGE	Store in a cool dry area, away from sunlight. Store away from incompatible materials such as water, strong oxidizing agents and bases.

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

EXPOSURE LIMITS	Dust: PEL-TWA: 2 mg / m ² as Al (soluble salts). TLV – TWA: None established.
ENGINEERING CONTROLS	Use local and/or general exhaust to keep employee exposures below the Airborne Exposure Limits.

MATERIAL SAFETY DATA SHEET

SUPER GREEN ALUMINUM SULPHATE

PERSONAL PROTECTIVE EQUIPMENT (PPE):

RESPIRATORY PROTECTION: no specific guidelines for aluminum sulphate available. The guidelines for sulphuric acid may be applicable (below)

NIOSH/OSHA Recommendations for sulphuric acid in air:

Up to 15 mg/m³:

APF = 25:

1. Any supplied-air respirator operated in a continuous-flow mode
2. Any powered, air-purifying respirator with acid gas cartridge(s) in combination with a high-efficiency particulate filter
(APF = 50) Any chemical cartridge respirator with a full facepiece and acid gas cartridge(s) in combination with an N100, R100, or P100 filter.

APF = 50

1. Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted acid gas canister having an N100, R100, or P100 filter
2. Any self-contained breathing apparatus with a full facepiece

Any supplied-air respirator with a full facepiece

Emergency or planned entry into unknown concentrations or IDLH conditions:

APF = 10,000

1. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
2. Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:

APF = 50

1. Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted acid gas canister having an N100, R100, or P100 filter.
2. Any appropriate escape-type, self-contained breathing apparatus

*APF = Assigned Protection Factor

EYE PROTECTION: Chemical Safety Goggles

SKIN PROTECTION: Chemical resistant gloves (rubber, PVC, neoprene, or vinyl), coveralls, boots. Have eye wash station readily available in the immediate work area.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Solid	APPEARANCE	granules or powder	COLOUR	Grey-white
EVAPORATION RATE	Not applicable	SPECIFIC GRAVITY	1.61	ODOUR	Not available
PH	2.9 or higher. 1g/1ml water	SOLUBILITY IN WATER	Soluble in 1 part water	ODOUR THRESHOLD	Not available

SECTION 10 – STABILITY AND REACTIVITY

MATERIAL SAFETY DATA SHEET

CHEMICAL STABILITY	Normally stable. Absorbs moisture from air. When water is added it causes a reaction that gives off heat and forms corrosive sulphuric acid.
---------------------------	--

SUPER GREEN ALUMINUM SULPHATE

INCOMPATIBILITY WITH OTHER SUBSTANCES	Water (forms sulphuric acid), strong oxidizing agents and strong alkalis – reaction may be violent.
REACTIVITY	May corrode metals in the presence of moisture.
HAZARDOUS DECOMPOSITION PRODUCTS	Sulphuric acid

SECTION 11 – TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE	LD50 (oral, rat): 6207 mg / kg (RTECS) Standard Draize test (rodent, rabbit) 10 mg / 24 hr, severe (RTECS).
EFFECTS OF CHRONIC EXPOSURE	Evidence of changes in urinary system, liver or blood in rats with multiple doses (RTECS). Aluminum has been investigated for neurological effects on the brain with positive and negative results in rats. No conclusive evidence of cause and effect has been found to date.
IRRITANCY OF PRODUCT	Extremely irritating to the eye (RTECS). Some evidence of slowly reversible occupational asthma from repeated inhalation of dust (HSDB).
RESPIRATORY SENSITIZATION	Does not meet criteria. No evidence found
SKIN SENSITIZATION	Does not meet criteria. No evidence found
CARCINOGENICITY	Not classified as a human carcinogen by IARC, NTP, ACGIH or CA Prop 65.
REPRODUCTIVE TOXICITY	No human or animal information available
TERATOGENICITY	Insufficient information.
MUTAGENICITY	Positive results in cultured human leukocyte cells. Negative results from bacteria. No animal studies or human case reports found
EMBRYOTOXICITY	Insufficient information.

SECTION 12 – ECOLOGICAL INFORMATION

MATERIAL SAFETY DATA SHEET

<p>ECOTOXICITY</p>	<p>Harmful to aquatic life due to low pH.</p> <p><u>Fish Toxicity</u> LC⁵⁰ Oncorhynchus mykiss (Rainbow trout) 91 ug/L/144 hr; renewal (soft, acidic water)/technical product/ LC⁵⁰ Perca fluviatilis (Perch) 661 ug/L/120 hr (95% confidence interval: 414-2189 ug/L); static LC⁵⁰ Pimephales promelas (Fathead minnow) 19.3 mg/L/192 hr (95% confidence interval: 12.8-34.6 mg/L); flow-through LC⁵⁰ Salmo salar (Atlantic salmon) 2.9 uM/96 hr (95% confidence interval: 2.5-3.2 uM); flow-through /technical product/ LC⁵⁰ Gambusia affinis (Mosquitofish) 69 mg/L/48 hr; 37 mg/L/96 hr; static</p>
---------------------------	--

MATERIAL SAFETY DATA SHEET

SUPER GREEN ALUMINUM SULPHATE

ECOTOXICITY	<u>Aquatic Insect toxicity</u> EC ⁵⁰ Asellus aquaticus (Aquatic sowbug; intoxication/immobilization) 6570 ug/L/48 hr (95% confidence interval: 5050-7760 ug/L); renewal /technical product/ EC ⁵⁰ Arctopsyche ladogensis (Caddisfly larvae; morphological abnormalities in the anal papillae) 938-1089 ug/L/96 hr; static, pH 5.0 /technical product/
	<u>Persistence and degradability:</u> No information available <u>Bioaccumulative potential:</u> No information available <u>Mobility in soil:</u> No information available

SECTION 13 – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL	Dispose of product in accordance with federal, provincial, and local government regulations.
-----------------------	--

SECTION 14 – TRANSPORT INFORMATION

SHIPPING	TGD: Not regulated for transport DOT: Not regulated for transport
-----------------	--

SECTION 15 – REGULATORY INFORMATION

DSL: Product is on Domestic Substance List WHMIS CLASSIFICATION: D-2B (Other Toxic Effects - Eye irritation) OSHA: Meets criteria for hazardous material, as defined by 29 CFR 1910.1200
<i>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</i>

SECTION 16 – OTHER INFORMATION

<i>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</i>
