MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFIER	Cal-Max			**WHMIS CLASSIFICATION**		D2-B (Eye and skin irritant)	
PRODUCT USE	Plant fertilizer						
Manufacturers 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**	604-882-7686	**Postal Code**		**Emergency Telephone**	
Date MSDS Prepared	August 20, 2009	**Prepared By**	Greenstar Plant Products Inc.			**Phone Number**	

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients (*Specific*)	**%**	**CAS**	**LD_{50} of Ingredient (*species and route*)**	**LC_{50} of Ingredient (*specify species*)**
Calcium Chloride	5-10%	10035-04-8	LD_{50} (Oral Rat) 1000 mg/kg	
Magnesium Nitrate	10-15%	13446-18-9	LD_{50} (Oral Rat) 5440 mg/kg	
Calcium Nitrate	1-5%	13477-34-4	LD_{50} (Oral Rat) 302 mg/kg	

SECTION 3 – HAZARDS IDENTIFICATION

Route of Entry √ **Skin contact** √ **Eye Contact** √ **Inhalation** √ **Ingestion**

Emergency Overview: EYE & SKIN IRRITANT. DURING A FIRE TOXIC AND IRRITATING GASES MAY BE FORMED.

WHMIS Symbols:

EFFECTS OF ACUTE EXPOSURE TO PRODUCT:

Eye Contact: Contact with eyes may cause irritation and possible burns to the eye.

Skin Contact: Single short exposures are expected to cause skin slight skin irritation. Inflammation may occur after a few hours of exposure especially on open or abraded skin.

Inhalation: May cause irritation if inhaled. During a fire, toxic and irritating gases may be formed (see emergency overview)

Ingestion: Ingestion of large amounts may cause gastrointestinal irritation characterized by abdominal cramps, nausea and vomiting and possible burning of the mouth, throat and esophagus. Ingestion may also cause headaches, laboured breathing, confusion, dizziness and shock. The product may also cause effects on the blood resulting in the formation of methaemoglobin, resulting in symptoms such as blue lips or fingernails and blue skin.

EFFECTS OF CHRONIC EXPOSURE: In rare cases repeated or prolonged contact with **calcium chloride** solutions has caused inflammation and tissue death of the underlying tissue a few hours after exposure. A pre-existing abrasion worsens effects. Repeated exposure to **magnesium nitrate** can cause headache, weakness and dizziness.

SECTION 4 – FIRST AID MEASURES

Skin Contact: Thoroughly wash the affected area with mild soap and water for 15 minutes. Seek medical attention if irritation occurs or persists.

Eye Contact: Immediately flush eyes with a gentle but large stream of lukewarm for at least 15 minutes holding both the upper and lower eye lids open. Get medical attention if irritation develops or persists.

Inhalation: Move victim to fresh air. Allow the victim to rest in a well ventilated area. If not breathing, give artificial respiration and seek medical attention immediately. If breathing is difficult, give oxygen. Obtain medical attention.

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. If victim is alert and not convulsing, rinse mouth out and give ½ - 1 glass of water to dilute material and IMMEDIATELY contact a poison control centre. If vomiting occurs naturally have victim lean forward with head down to avoid breathing in vomit. Loosen tight clothing such as collar, tie, belt or waistband.

SECTION 5 – FIRE FIGHTING MEASURES

Flammable	Not flammable	**If yes, under what conditions?**			
Means of Extinction: Water, Fog, Foam, Dry Chemical, CO_2					
Flashpoint (°C) and method	NAP	**Upper Flammable Limit (% by volume)**	NAP	**Lower Flammable Limit (% by volume)**	NAP
Auto ignition Temperature (°C)	NAP	**Explosion Data – Sensitivity to Impact**	NAV	**Explosion Data-Sensitivity to Static Discharge**	NAV
Hazardous Combustion Products: During a fire, toxic gases such as hydrogen chloride, chlorine, nitrogen oxide, calcium oxide, and magnesium oxide may be formed.					

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Leak and Spill Procedures: Cleanup personnel should wear personal protective equipment as necessary to prevent skin/eye contact. Place into suitable container for reclamation or disposal. Damp mop any residues.

SECTION 7 – HANDLING AND STORAGE

Handling Procedures and Equipment: Do not handle unless safety precaution have been read and understood. Avoid eye and skin contact. Avoid inhalation of mists or vapours. Do not puncture, drag or slide container.

Storage Requirements: Should be stored in a cool dry location

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits
ACGIH TLV: Limits not established **OSHA PEL:** Limits not established

Specific Engineering Controls: General mechanical ventilation is adequate.

Personal Protective Equipment √ Gloves √ Respirator √ Eye √ Footwear √ Clothing

Hands wear: water resistant rubber type gloves (latex, nitrile, PVC). **Respirator:** wear- NIOSH approved filter cartridge, **Eye** – wear goggles, **Foot**-wear work boot/rubber boots, Clothing – Long sleeve and pants - no special clothing required.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid	**Odour and Appearance:** Odourless, light amber color liquid	**Odour Threshold (ppm):** Odourless
Specific Gravity: NAV	**Vapour Density (air = 1):** NAV	**Vapour Pressure (mmHg):** NAV
Evaporation Rate: NAV	**Boiling Point (°C):** NAV	**Freezing Point (°C):** NAV
pH: 4	**Coefficient of Water/Oil Distribution:**	**Solubility in Water:** Product is a solution

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability:	Stable at room temperature in closed containers under normal storage and handling conditions
Incompatibility with Other Substances:	Ammonia, hydrazine, reducing agents, strong acids and bases and alkyl esters.
Reactivity, and under what conditions?	Keep away from water/moisture, heat and incompatible materials.
Hazardous Decomposition Products	Please see Section 5 - Hazardous combustion products.

SECTION 11 – TOXICOLOGICAL INFORMATION

Effects of Acute Exposure:

Calcium Chloride: LD_{50} (oral, rat) 1000 mg / kg
Calcium Nitrate: LD_{50} (oral, rat) 3900 mg / kg
Magnesium Nitrate: LD_{50} (oral, rat) 5440 mg / kg

Calculated LD_{50} = 7128 mg / kg – 14124 mg / kg

Effects of Chronic Exposure: In rare cases repeated or prolonged contact with **calcium chloride** solutions has caused inflammation and tissue death of the underlying tissue a few hours after exposure. A pre-existing abrasion worsens effects. Repeated exposure to **magnesium nitrate** can cause headache, weakness and dizziness.

Irritancy of Product: Eye and skin irritant

Skin Sensitization: NAV	**Respiratory Sensitization:** NAV
Carcinogenicity – IARCL: None of the ingredients are listed	**Carcinogenicity – ACGIH:** None of the ingredients are listed
Reproductive Toxicity: Some evidence	**Teratogenicity:** Some evidence in rats
Embryotoxicity: NAV	**Mutagenicity:** No evidence

Name of Synergistic Products/Effects: NAV

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity
Calcium Chloride: Material is practically non-toxic to aquatic organisms on an acute basis - LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested

- **Fish Acute & Prolonged Toxicity**
  - LC50, bluegill (Lepomis macrochirus): 8,350 - 10,650 mg/L
- **Aquatic Invertebrate Acute Toxicity**
  - LC50, water flea Daphnia magna: 759 - 3,005 mg/L
- **Toxicity to Micro-organisms**
  - EC50; activated sludge, respiration inhibition: > 1,000 mg/L

Calcium Nitrate: Relatively low toxicity for fish and aquatic animals. The LC50/96-hour values for fish are over 100 mg/l.
Magnesium Nitrate is a marine pollutant. Environmental fate not available.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of this product as an industrial fertilizer. Reclaim waste wherever possible. Dispose of unsalvageable waste as required by applicable federal, state, and local regulations. Contact a licensed waste disposal contractor for treatment and disposal services.

SECTION 14 – TRANSPORT INFORMATION

Shipping Information	
TDG: Not **r**egulated for transport	**DOT:** Not **r**egulated for transport

SECTION 15 – REGULATORY INFORMATION

WHMIS Classification D2B (eye and skin irritation)	**OSHA** NAV
SERA NAV	**TSCA** NAV

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.