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## SAFETY DATA SHEET

**MSDS Number: EcoGEM -01**

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Version 7

### Section 1 Chemical Product and Identification

TRADE NAMES: EcoGEM Soil Enhancer  
 EcoGEM® S-CaS  
 EcoGEM Selenite

CHEMICAL NAME: Calcium Sulfate Dihydrate  
 CHEMICAL FORMULA: CaSO<sub>4</sub> 2H<sub>2</sub>O

MOLECULAR WEIGHT: 172.2

SYNONYMS: Gypsum, Land Plaster, Gypsum Stone, Mineral White, Hydrated Calcium Sulfate

### Section 2 Hazard Identification

This product is not expected to produce health hazard during normal use unless exposure occurs in dusty conditions. This product contains quartz (crystalline silica) and dolomite, naturally occurring contaminants.

#### Potential Health Effects:

##### Acute

Primary Route(s) of Exposure: Inhalation, contact with skin, contact with eyes.

**Inhalation:** Dust may be irritating to the nose, throat and upper respiratory tract. Exposure may induce coughing, dyspnea, and wheezing and can lead to impaired pulmonary function.

**Eye Contact:** Direct contact with dust may cause irritation by mechanical abrasion.

**Skin Contact:** Direct contact may cause irritation by mechanical abrasion. Continued and prolonged contact may result in dry skin, redness, rash and/or itching.

**Ingestion:** None. Calcium sulfate is an ingredient in many foods, beverages and pharmaceuticals.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Existing respiratory, skin or eye diseases or conditions.

##### Chronic

Exposures to crystalline silica are not expected during the normal use of this product; however, chronic exposure to airborne crystalline silica may result in lung disease (silicosis) or lung cancer. Smoking and obstructive/restrictive lung diseases may exacerbate the effects of excessive exposure to this product.

### Section 3 Composition/Information on Ingredients

COMPONENT(S) CHEMICAL NAME	% BY WEIGHT (Approx.):	CAS REGISTRY NO
Calcium Sulfate Dihydrate	78 - 99%	13397-24-5
Crystalline Silica (Quartz)	<2%	14808-60-7
Dolomite (Calcium Magnesium Carbonate)	<22%	16389-88-1

APPEARANCE: White powder or colorless, crystalline solid      ODOR: None

The percent by weight crystalline silica represents the total weight and not the respirable fraction.

### Section 4 First Aid Measures

**Inhalation:** If breathing difficulty occurs, move to fresh air immediately; seek medical attention if irritation persists.

**Eyes:** If contact occurs, flush with cold or warm (preferable) water for at least 15 minutes. Remove contact lenses. If irritation persists, seek medical attention.

**Skin:** In case of skin contact, wash area with soap and water. Apply lotion if dryness occurs. If irritation persists, seek medical attention.

**Ingestion:** No harmful effects are expected if small amount is consumed. Abdominal discomfort and obstruction of the digestive tract may occur if large amounts are ingested. Drink plenty of water and seek medical attention if irritation persists.

### Section 5 Fire Fighting Measures

FLAMMABLE CHARACTERISTICS:	Not flammable or combustible. NFPA Hazard Class No: 1/0/0.
FIRE AND EXPLOSION HAZARD:	None.
EXTINGUISHING AGENT:	Water, or extinguishing agent appropriate to surrounding fire.
HAZARDOUS COMBUSTION PRODUCTS:	None. Material can release sulfur dioxide (SO <sub>2</sub> ) and carbon oxides upon decomposition (occurs above 1450°C).
FIRE FIGHTING PROTECTION:	Standard firefighter protective equipment and safety measures.

### Section 6 Accidental Release Measures

**GENERAL RECOMMENDATIONS:**

In case material is released or spilled, shovel, scoop, or vacuum material into holding container or disposal unit. Material is not a hazardous waste; dispose in accordance with applicable federal, state, or local laws and bylaws. Do not wash down drain as material may clog pipes. Avoid creating excessive dust and insure there is proper ventilation at all times. Wear appropriate personal protective equipment, including approved respirators described in Section 8 if necessary.

### Section 7 Handling and Storage

- Store in dry area with proper ventilation.
- Minimize generation of dust.
- Avoid excessive particulate concentrations in the work area, wear respiratory and eye protection under dusty conditions.
- Wear recommended protective clothing (See Section 8).

## Section 8 Exposure Controls and Personal Protection

### EXPOSURE GUIDELINES

COMPONENT(S) CHEMICAL NAME	OSHA PEL EXPOSURE LIMIT (mg/m <sup>3</sup> )	ACGIH TLV EXPOSURE LIMIT (mg/m <sup>3</sup> )
Calcium Sulfate Dihydrate	(T) 15 (R) 5	(T) 10
Crystalline Silica (Quartz)	(R) 0.1	(R) 0.025
Dolomite (Calcium Magnesium Carbonate)	(T) 10 (R) 5	(T) 10

(T)= Total Dust, (R) = Respirable Dust

### ENGINEERING CONTROLS

- When appropriate, use wet methods to reduce the generation of dust.
- Ventilation: Use local, general or natural exhaust ventilation adequate for maintaining dust levels below the PEL/TLV exposure limits.

### PERSONAL PROTECTIVE EQUIPMENT

<u>Eye/Face Protection:</u>	Safety glasses or goggles. It is recommended that contact lenses are not worn while working with this material.
<u>Skin Protection:</u>	Gloves and protective clothing (close fitting and dust-proof) should be worn.
<u>Respiratory Protection:</u>	If the PEL/TLV is exceeded or ventilation in the area is poor, a NIOSH approved particulate respirator is recommended. OSHA's Respiratory Protection Standard (29 CFR 1910.134) must be followed when work conditions require a respirator.

## Section 9 Physical and Chemical Properties

<u>Appearance:</u>	White powder or colorless crystalline solid.	<u>Vapor Pressure:</u>	Not Applicable
		<u>Vapor Density:</u>	Not Applicable
		<u>Volatile Organic Compound content:</u>	None
		<u>Flammability:</u>	Not Applicable
		<u>Flash Point:</u>	Not Applicable
<u>Odor:</u>	None	<u>Upper/Lower Explosive Limits:</u>	Not Applicable
<u>Physical State:</u>	Solid	<u>Auto-Ignition Temperature:</u>	Not Applicable
<u>Specific Gravity:</u>	2.17- 2.32 g/cc	<u>Partition Coefficient: :</u>	Not Applicable
<u>pH:</u>	~7	<u>Boiling, Freezing, Melting Point:</u>	Not Applicable
<u>Solubility in water:</u>	0- 0.2% @ 40°C	<u>Evaporation Rate:</u>	Not Applicable
<u>Decomposition Temperature:</u>	1450°C		
<u>Bulk Density:</u>	50-100 lb/ft <sup>3</sup>		

## Section 10 Stability and Reactivity

CHEMICAL STABILITY: Is stable in dry conditions.

INCOMPATIBILITY: None

CONDITIONS TO AVOID: None.

HAZARDOUS DECOMPOSITION PRODUCTS: When heated to temperatures above 1450°C, gypsum decomposes and emits toxic fumes of sulfur dioxide (SO<sub>2</sub>), calcium oxide (CaO) and various carbon oxides.

HAZARDOUS POLYMERIZATION: Will not occur.

## Section 11 Toxicological Information

Data on toxicological information in for the major components of this product: Calcium Sulfate Dihydrate and Dolomite:

### HUMAN DATA

ACUTE EFFECTS: The sulfate ion has caused gastro-intestinal disturbance in humans following large oral doses.

- Reports have been found on acute exposure to airborne particulate (above recommended exposure limits), causing irritation to the eye and respiratory tract mucus membranes. There have been reports of conjunctivitis, chronic rhinitis, laryngitis, pharyngitis, impaired sense of smell and taste, bleeding from the nose and reactions of tracheal and bronchial membranes in exposed workers.

### CHRONIC EFFECTS:

- Neither calcium sulfate dihydrate nor dolomite is listed as a carcinogen by any agency.

Toxicological information for Crystalline Silica, which may be present at < 0.5%.

- Chronic exposure to crystalline silica of respirable size has been shown to cause silicosis, a debilitating lung disease. In addition, the International Agency for Research on Cancer (IARC) classifies crystalline silica as carcinogenic to humans, Group 1. The National Toxicology Program (NTP) classifies respirable crystalline silica as a known human carcinogen. The American Conference of Governmental Industrial Hygienists classifies crystalline silica as A2 – a suspected human carcinogen. Crystalline silica is classified by California Proposition 65 as a substance “known to the State of California to cause cancer.”

## Section 12 Ecological Information

### Ecotoxicity

This product has no known adverse impact on ecology.

This material is listed for use in organic agriculture by OMRI the Organic Materials Research Institute.



### Section 13 Disposal Considerations

May be disposed of as an inert solid in a sanitary landfill or by other procedures in accordance with all federal, state and local regulations. May be used as a supplement on land and on agricultural products.

### Section 14 Transportation Information

HMIS Hazard Class No.: 1, 0, 0.

This product is not regulated as a hazardous material by the United States (DOT) transportation regulations

### Section 15 Regulatory Information

All ingredients are included on the TSCA inventory.

#### Federal Regulations

SARA Title III: Not listed under Sections 302, 304, and 313

CERCLA: Not listed

RCRA: Not listed

OSHA: Dust generated during product use may be hazardous and potential respirable crystalline silica.

#### State Regulations

California Prop 65: Respirable crystalline silica is known to the state of California to cause cancer.

**OSHA:** Hazard listing for the dust and respirable particulate matter for crystalline silica.

**SARA Title III:** Not listed under Sections 302, 304, and 313

#### STATE REGULATION

State of California (Prop 65): crystalline silica is known to cause cancer in this state.

#### Canada WHMIS

Crystalline silica: WHMIS Classification D2A

All components of this product can be found listed in the Canadian Domestic Substances List (DSL).

## Section 16 Other Information

### **Abbreviations**

**ACGIH:** American Conference of Governmental Industrial Hygienists

**CFR:** US Code of Federal Regulations

**DOT:** US Department of Transportation

**IARC:** International Agency for Research on Cancer

**IATA:** International Air Transport Association

**ICAO:** International Civil Aviation Organization

**IDLH:** Immediately Dangerous to Life and Health

**IMO:** International Maritime Organization

**NIOSH:** National Institute of Occupational Safety and Health, US Department of Health and Human Services

**NTP:** National Toxicology Program

**OSHA:** Occupational Safety and Health Administration, US Department of Labor

**PEL:** Permissible Exposure Limit

**SARA Title III:** Title III of the Superfund Amendments and Reauthorization Act, 1986

**TLV:** Threshold Limit Value

**TWA:** Time-Weighted Average

**FDA:** Food and Drug Administration

**WHMIS:** Workplace Hazardous Materials Information System

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