

MATERIAL SAFETY DATA SHEET

GRANDEVO™

MSDS DATE: 05/08/12

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: GRANDEVO™

EPA REGISTRATION NO.: 84059-17

MANUFACTURER: Marrone Bio Innovations

ADDRESS: 2121 Second Street , Suite B-107 Davis CA, 95618

EMERGENCY PHONE: Info Trac Chemical Response System 800-535-5053 (24 hours)

OTHER CALLS: 530-750-2800 (9am to 5 pm PST)

FAX PHONE: 530-750-2808

PRODUCT USE: Natural Bioprotectant

REVISION DATE:

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

ACTIVE INGREDIENT:

Chromobacterium subtsugae strain PRAA4-1^T

<u>CAS NO.</u>	<u>% WT</u>	<u>EXPOSURE LIMITS</u>
None	30.0	None Established

OTHER INGREDIENTS:

70.0 % inert, non-reactive

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This product has very low toxicity by ingestion, skin contact, or inhalation.

POTENTIAL ROUTES OF ENTRY: Oral, eye and inhalation.

POTENTIAL HEALTH EFFECTS:

SKIN/EYE IRRITATION: May be irritating to skin and eyes for some individuals.

INHALATION: May be irritating to respiratory tract for some individuals.

EFFECTS OF OVEREXPOSURE: If product comes in contact with eyes or skin, irritation may occur.

CHRONIC HEALTH HAZARDS: None known.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Not determined

CARCINOGENICITY: OSHA: Not listed ACGIH: Not listed NTP: Not listed IARC: Not listed

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SECTION 4: FIRST AID MEASURES

EYES: Hold eye open and rinse slowly and gently with water for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Do not use an eye ointment. Call poison control center or doctor for treatment advice.

SKIN: Take off contaminated clothing. Rinse skin immediately with plenty of water for at least 15-20 minutes. Call a poison control center or doctor for treatment advice.

INGESTION: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or physician. Do not give anything by mouth to an unconscious person.

INHALATION: Remove person to fresh air. If the person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for treatment.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR, (% BY VOLUME)

UPPER: Not applicable.

LOWER: Not applicable.

FLASH POINT: Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

NFPA HAZARD CLASSIFICATION

HEALTH: 0

FLAMMABILITY: 0

REACTIVITY: 0

HMIS HAZARD CLASSIFICATION

HEALTH: 0

FLAMMABILITY: 0

REACTIVITY: 0

EXTINGUISHING MEDIA: Use extinguishing media appropriate for the surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES: None

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

HAZARDOUS DECOMPOSITION PRODUCTS: None

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: Wear suitable clothing such as eye protection, long-sleeved shirt, pants and shoes with socks. If spilled, contain - prevent run off into drains and waterways. Absorb liquid with an inert absorbent material. Seal absorbent material in a closed labeled container and dispose of in accordance with local ordinances.

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SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Store in the closed, original container in a well-ventilated area out of direct sunlight. Keep containers closed when not in use. Empty container completely and dispose of in accordance with all applicable federal, state and local environmental regulations.

OTHER PRECAUTIONS: No special precautions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Spill controls should be provided for working with large quantities.

VENTILATION : No TLV assigned. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and aerosols below the exposure levels. Ensure that eyewash stations and safety showers are proximal to the work-station location.

RESPIRATORY PROTECTION: Use a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95 or P-95.

EYE PROTECTION: Safety goggles or glasses with side shields advisable.

SKIN PROTECTION: Wear gloves made of Latex or other impervious material.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Clothing to prevent prolonged skin contact as needed such as long-sleeved shirt, long pants and shoes with socks.

WORK HYGIENIC PRACTICES: Wash any contamination from skin or eyes immediately. Wash hands and exposed skin before eating, drinking, smoking after work or using the toilet.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Powder
COLOR:	Dark brown
ODOR:	Fruity
pH:	7.95
DENSITY:	0.36 g/ml

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable.

INCOMPATIBILITY (MATERIAL TO AVOID): None known.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: None known

HAZARDOUS POLYMERIZATION: Not known to occur.

CONDITIONS TO AVOID (POLYMERIZATION): None.

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SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY LD₅₀: >5000 mg/kg (rat)
ACUTE DERMAL TOXICITY LD₅₀: >5000 mg/kg (rabbit)
ACUTE INHALATION LC₅₀: >2.12 mg/L (rat)
EYE IRRITATION: Minimally irritating (rabbit)
SKIN IRRITATION: Slightly irritating (rabbit)
SKIN SENSITIZATION: Non-sensitizing (guinea pigs)

SECTION 12: ECOLOGICAL INFORMATION

This product is toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product if bees are visiting the treatment area. This product is toxic to aquatic invertebrates. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Studies conducted on mammals, freshwater fish, birds, and non-target insects have been performed with the active ingredient without identifying any organisms at risk. This product is not expected to impose any environmental risk.

SECTION 13: DISPOSAL CONSIDERATIONS

Do not reuse containers. Dispose of in accordance with all applicable federal, state, and local environmental regulations.

SECTION 14: TRANSPORTATION INFORMATION

U.S. DOT: Not Regulated
IATA DGR: Not regulated
IMDG: Not Regulated

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA: Exempt
CERCLA: Not applicable.

SARA TITLE III HAZARD CLASSIFICATION SECTIONS 311 AND 312:

Immediate (acute) Health: None
Delayed (chronic) Health: None
Fire: None
Sudden Release of Pressure: None
Reactivity: None

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SECTION 15: REGULATORY INFORMATION, continued

STATE REGULATIONS: None

INTERNATIONAL REGULATIONS: Not applicable

SECTION 16: OTHER INFORMATION

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