

**SAFETY DATA SHEET****SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** **GRANDEVO<sup>®</sup>** (synonym: MBI-203 DF)

**REGISTRATION NO:** 84059-17

**MANUFACTURER:** Marrone Bio Innovations

**ADDRESS:** 1540 Drew Avenue, Davis CA, 95618

**EMERGENCY PHONE:** **INFOTRAC Chemical Response System**  
**US and Canada 1-800-535-5053 (24 hours)**  
**International 1-352-323-3500 (24 hours)**

**OTHER CALLS:** Marrone Bio Innovations 530-750-2800 (9am to 5 pm PST)

**FAX PHONE:** Marrone Bio Innovations 530-750-2808

**PRODUCT USE:** Bio-based Insecticide/ bio-protectant

**SECTION 2: HAZARDS IDENTIFICATION**

**HAZARD CLASSIFICATION:** This chemical does not meet the hazardous criteria set forth by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). However, this Safety Data Sheet (SDS) contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product.

**EMERGENCY OVERVIEW:** Potential Irritant

**HAZARD SYMBOLS:**

Pictogram



Signal Word    Warning

**HAZARD STATEMENT:** This product is potentially irritating to respiratory tract, eyes and skin for some individuals.

H317    May cause an allergic skin reaction.

H335    May cause respiratory irritation

**PRECAUTIONARY STATEMENTS**

P261    Avoid breathing fume/gas/mist/vapors/spray

P281    Use personal protective equipment as required.

P284    Wear respiratory protection

**POTENTIAL ROUTES OF ENTRY:** Oral, eye, and inhalation.

**SAFETY DATA SHEET****CARCINOGENICITY:**

OSHA: Not listed      ACGIH: Not listed      NTP: Not listed.      IARC: Not listed

Physical State: Powder

Odor: Fruity

Color: Dark brown

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS****ACTIVE INGREDIENT:***Chromobacterium subtsugae* strain PRAA4-1CAS NO. None% WT 30EXPOSURE LIMITS None Established**OTHER INGREDIENTS:**

70.0 % inert, non-reactive.

**SECTION 4: FIRST AID MEASURES**

**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.

**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:** Remove 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.

**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

**HMS HAZARD CLASSIFICATION**

HEALTH: 0

FLAMMABILITY: 0

REACTIVITY: 0

**SAFETY DATA SHEET**

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

**SPECIAL FIRE FIGHTING PROCEDURES:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** None

**HAZARDOUS DECOMPOSITION PRODUCTS:** None

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**ACCIDENTAL RELEASE MEASURES:** Wear suitable protection such as a dust mask, long-sleeved shirt, pants, waterproof gloves and shoes with socks. Carefully mop or sweep up spill and place in a closed container for disposal. Dispose of in accordance with applicable local ordinances. Prevent run-off from being released into the environment.

**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 and dust control apparatus 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 when handling dry powder.

**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.

**SAFETY DATA SHEET****SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

PHYSICAL STATE:	Powder
COLOR:	Dark brown powder
ODOR:	Fruity
pH:	7.0-8.5
DENSITY:	Not determined
BOILING POINT:	Not applicable
MELTING POINT:	Not applicable
SOLUBILITY IN WATER:	Dispersible in water
FLASH POINT:	Not determined
EVAPORATION RATE:	Not determined
FLAMMABILITY (SOLID, GAS):	Not determined
UPPER FLAMMABILITY LIMITS:	Not determined
LOWER FLAMMABILITY LIMITS:	Not determined
VAPOR PRESSURE:	Not determined
VAPOR DENSITY:	Not determined
RELATIVE DENSITY:	Not determined
SOLUBILITY IN OTHER SOLVENTS:	Not determined
PARTITION COEFFICIENT:	Not determined
AUTOIGNITION TEMPERATURE:	Not determined
DECOMPOSITION TEMPERATURE:	Not determined
KINEMATIC VISCOSITY:	Not determined
DYNAMIC VISCOSITY:	Not determined
EXPLOSIVE PROPERTIES:	Not determined
OXIDIZING PROPERTIES:	Not determined

**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

**SECTION 11: TOXICOLOGICAL INFORMATION**

**WARNING:** This product may be harmful if swallowed. This product may be harmful in contact with skin. This product may be harmful if inhaled.

ACUTE ORAL TOXICITY LD <sub>50</sub> :	>5000 mg/kg (rat). Category 4
ACUTE DERMAL TOXICITY LD <sub>50</sub> :	>5050 mg/kg (rat). Category 4
ACUTE INHALATION LC <sub>50</sub> :	>2.12 mg/L (rat). Category 4
EYE IRRITATION:	Minimally irritating (rabbit). Category 4
SKIN IRRITATION:	Minimally irritating (rabbit). Category 4
SKIN SENSITIZATION:	Non-sensitizing (guinea pigs). Category 4

**SAFETY DATA SHEET****SECTION 12: ECOLOGICAL INFORMATION**

This product is non-toxic or practically nontoxic (Category 4) to mammalian wildlife, beneficial insects and mites, and freshwater aquatic life in short-term studies. Long-term data is unavailable.

Avian Acute Oral Toxicity: Bobwhite quail. LD<sub>50</sub> >2000 mg/kg-bw. Non-toxic. Category 5

Toxicity to freshwater aquatic life: *Daphnia magna* (48-hour acute toxicity) EC<sub>50</sub> = 11 mg/L AI. Category 3

Bees and beneficial insects: Honeybees (*Apis mellifera* L.) Non-toxic. Category 4

In a federally approved study, GRANDEVO was found to be practically non-toxic to honeybees. This product has been evaluated for toxicity to non-target insects in a variety of bioassays and on a variety of crops under various normal growing conditions. However, testing all beneficial insects, in all situations, mixtures and combinations, is not feasible. Prior to treating entire crop where the release of beneficial insects serve as part of an Integrated Pest Management (IPM) program, consult with an extension specialist, a pest control advisor (PCA) or with the product manufacturer.

**For terrestrial uses only:** Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate.

**Sensitive areas:** The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas). Do not allow spray to drift from the application site and contact people, structures people occupy at any time and the associated property, parks and recreation areas, non-target crops, aquatic and wetland areas, woodlands, pastures, rangelands, or animals. Do not allow product to drift to blooming crops or weeds if bees are foraging. Minimize spray drift away from the target area to reduce effects to other non-target insects

Bioconcentration potential: This material is not expected to bioconcentrate in organisms.

**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

Freight Classification: Insecticide. See NMFTA code.

**SAFETY DATA SHEET****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

STATE REGULATIONS: None

INTERNATIONAL REGULATIONS: Not applicable.

**SECTION 16: OTHER INFORMATION**

## NFPA HAZARD CLASSIFICATION

HEALTH: 0                      FLAMMABILITY: 0                      REACTIVITY: 0

## HMIS HAZARD CLASSIFICATION

HEALTH: 0                      FLAMMABILITY: 0                      REACTIVITY: 0

SPECIAL HAZARDS: Not Determined

Date Issued: January 28 2015  
Revision Date: 1  
Revision Note: Updated company address in Section 1

DISCLAIMER: IN NO EVENT SHALL MARRONE BIO INNOVATIONS BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES. THE DATA PROVIDED IS FOR GENERAL INFORMATION ONLY AND IS NOT INTENDED AS A COMPREHENSIVE GUIDE CONCERNING HAZARDS THAT MAY BE ASSOCIATED WITH THIS PRODUCT. USER ASSUMES ALL RESPONSIBILITY FOR FOLLOWING PROPER SAFETY PROTOCOL AND CONSULTING TRAINED PERSONNEL FOR CONTROL AND CONTAINMENT.