

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

**PRODUCT NAME:** GRANDEVO<sup>®</sup>

**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****EMERGENCY OVERVIEW:**

Causes eye irritation

**HAZARD SYMBOLS:**

Pictogram (NONE)

Signal Word Warning

**HAZARD STATEMENT:**

H320 Causes eye irritation

**PRECAUTIONARY STATEMENTS**

P264 Wash exposed areas thoroughly after handling.

P305 + P351 + P338 **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical attention.

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

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

**SAFETY DATA SHEET****SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

synonym: MBI-203 DF

**ACTIVE INGREDIENT:***Chromobacterium subtsugae* strain PRAA4-1**CAS NO.** None**% WT** 30**EXPOSURE 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

**HMIS HAZARD CLASSIFICATION**

HEALTH: 0

FLAMMABILITY: 0

REACTIVITY: 0

**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.

**SAFETY DATA SHEET**

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

HAZARDOUS DECOMPOSITION PRODUCTS: None

**SECTION 6: ACCIDENTAL RELEASE MEASURES****PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES**

Use personal protective equipment. Avoid dust formation, Avoid breathing dust, vapor, or mist. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see Section 8.

**ENVIRONMENTAL PRECAUTIONS**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP**

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

**SECTION 7: HANDLING AND STORAGE****PRECAUTIONS FOR SAFE HANDLING**

Further processing of solid materials may result in the formation of combustible dusts. Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

**CONDITIONS FOR SAFE STORAGE**

Keep container tightly closed in a dry and well-ventilated place. Store in original container and out of direct sunlight.

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.

**SAFETY DATA SHEET**

**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 powder
ODOR:	Fruity
pH:	7 to 9
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**

**ACUTE ORAL TOXICITY LD<sub>50</sub>:** LD<sub>50</sub>>5000 mg/kg (rat). Not categorized

**ACUTE DERMAL TOXICITY LD<sub>50</sub>:** LD<sub>50</sub>>5050 mg/kg (rat). Not categorized

**SAFETY DATA SHEET**

ACUTE INHALATION LC <sub>50</sub> :	LC <sub>50</sub> >5.11 mg/L (rat). Not categorized
EYE IRRITATION:	Mild irritation; clears within 72 hours (rabbit) Category 2B
SKIN IRRITATION:	Does not produce irritation (rabbit) Not categorized.
SKIN SENSITIZATION:	Non-sensitizing (guinea pigs) Not categorized

**SECTION 12: ECOLOGICAL INFORMATION**

Toxicity to freshwater aquatic life (OECD 203): Rainbow trout (96-hour acute toxicity)  
LC<sub>50</sub> > 100 mg/L; NOEC > 100 mg/L

Acute Oral Toxicity to Honey Bee (*Apis mellifera*) (OECD 213): 48-hour LD<sub>50</sub> > 100 µg a.i./bee

Acute Contact Toxicity Honey Bee (*Apis mellifera*) (OECD 214): 48-hour LD<sub>50</sub> > 100 µg a.i./bee

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.

**SECTION 15: REGULATORY INFORMATION**

**SAFETY DATA SHEET**

## Allowable Tolerances:

Residues of GRANDEVO<sup>®</sup> are exempted from the requirement of a tolerance when used in accordance with good agricultural practices and label application instructions to agricultural commodities directed on the product label.

## 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

## US STATE RIGHT TO KNOW REGULATIONS:

New Jersey Right To Know Components  
Kaolin CAS No.  
1332-58-7

Pennsylvania Right To Know Components  
Kaolin CAS No.  
1332-58-7

California Proposition 65  
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**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: 09 Feb 2018  
Revision: 3  
Revision Note: Update ecological information

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.