

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

PRODUCT NAME: GRANDEVO[®] PTO

REGISTRATION NO: 84059-17-87865

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

HMIS HAZARD CLASSIFICATION

HEALTH: 0

FLAMMABILITY: 0

REACTIVITY: 0

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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 ₅₀ :	>5000 mg/kg (rat). Category 4
ACUTE DERMAL TOXICITY LD ₅₀ :	>5050 mg/kg (rat). Category 4
ACUTE INHALATION LC ₅₀ :	>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. LD₅₀ >2000 mg/kg-bw. Non-toxic. Category 5

Toxicity to freshwater aquatic life: *Daphnia magna* (48-hour acute toxicity) EC₅₀ = 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**

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from classification criteria and hazardous information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticides label also includes other important information, including directions for use.

CAUTION

Keep out of reach of children

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

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.

INTERNATIONAL REGULATIONS: Not applicable.

SECTION 16: OTHER INFORMATION**NFPA HAZARD CLASSIFICATION****HEALTH: 0****FLAMMABILITY: 0****REACTIVITY: 0**

SAFETY DATA SHEET**HMIS HAZARD CLASSIFICATION**

HEALTH: 0

FLAMMABILITY: 0

REACTIVITY: 0

SPECIAL HAZARDS: Not Determined

Date Issued: 08 July 2015

Revision Date: 3

Revision Note: Update registration number, update state right-to-know section.

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.