

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

PRODUCT NAME: **Grandevo CG™**

REGISTRATION NO: 84059-27

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
Harmful to aquatic life
Harmful to aquatic life with long lasting effects

HAZARD SYMBOLS**Pictogram****Signal Word****Warning****HAZARD STATEMENTS**

H320 Causes eye irritation
H402 Harmful to aquatic life
H412 Harmful to aquatic life with long lasting effects

PRECAUTIONARY STATEMENTS.

P264 Wash exposed areas thoroughly after handling.
P273 Avoid release into the environment.
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.
P501 Dispose of contents/ container to an approved waste disposal plant.

SAFETY DATA SHEET

CARCINOGENICITY:

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

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

SYNONYM: MBI-203 WDG

<u>COMPONENT</u>	<u>CAS NUMBER</u>	<u>PERCENT BY WEIGHT (%)</u>
<i>Chromobacterium subtsugae</i> strain PRAA4-1 and spent fermentation media	N/A	30
Sodium lauryl sulfate	151-21-3	5
Other (inert ingredients)	Several (Not applicable)	65

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 determined for this mixture.**AUTOIGNITION TEMPERATURE:** Not determined for this mixture.**EXTINGUISHING MEDIA:** Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.**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

SAFETY DATA SHEET**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 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: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

EYE PROTECTION: Eye/Face Protection: Wear appropriate eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations 29 CFR 1910.133 or European Standard EN 166.

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:	Solid
COLOR:	Purplish to grayish brown
ODOR:	Sweet, musty
pH:	5 to 7 (1% solution in water)
DENSITY:	0.4 to 0.7 g/mL
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 ₅₀ :	>5000 mg/kg (rat). Not categorized
ACUTE DERMAL TOXICITY LD ₅₀ :	>5000 mg/kg (rat). Not categorized
ACUTE INHALATION LC ₅₀ :	>5.21 mg/kg (rat). Not categorized
EYE IRRITATION:	Mild irritation (rabbit); clears within 96 hours. Category 2B
SKIN IRRITATION:	Slight irritation (rabbit); clears within 24 hours. Not categorized
SKIN SENSITIZATION:	Not determined. Categorization not possible

SECTION 12: ECOLOGICAL INFORMATION

ACUTE TOXICITY TO AQUATIC LIFE:	Category 3
CHRONIC TOXICITY TO AQUATIC LIFE:	Category 3
ACUTE TOXICITY TO FOLIAR INVERTEBRATES AND POLLINATORS:	Not categorized

SAFETY DATA SHEET

Acute toxicity to water fleas (<i>Daphnia magna</i>) under static conditions:	48 hr EC50 = 25 mg/L
Acute toxicity to rainbow trout under static conditions:	96 hr LC50 = 71 mg/L
Acute Oral Toxicity to Honey Bee (<i>Apis mellifera</i>):	48-hour LD50 > 100 µg a.i./bee
Acute Contact Toxicity Honey Bee (<i>Apis mellifera</i>):	48-hour LD50 > 100 µg a.i./bee

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 product 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 residue 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. As a precaution, 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

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**INTERNATIONAL REGULATIONS**

TSCA (USA): A component of this material is listed on this inventory.

EINECS (Europe): A component of this material is listed on this inventory.

U.S. FEDERAL REGULATIONS

CERCLA: "Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients: No ingredients listed in this section.

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SAFETY DATA SHEET

SARA 302 COMPONENTS: No components in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA TITLE III HAZARD CLASSIFICATION SECTIONS 311 AND 312:

Immediate (acute) Health:	Acute health hazard
Delayed (chronic) Health:	None
Fire:	Fire hazard (a component of this material is a flammable solid)
Sudden Release of Pressure:	None
Reactivity:	None

SARA 313 COMPONENTS: This material does not contain any chemical components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.

US STATE RIGHT-TO-KNOW REGULATIONS:

New Jersey Right To Know Components:	CAS No.:
Kaolin	1332-58-7
Microcrystalline cellulose	9004-34-6

Pennsylvania Right To Know Components:	CAS No.:
Kaolin	1332-58-7
Ammonium sulfate	7783-20-2
Microcrystalline cellulose	9004-34-6

Massachusetts Right To Know Components:	CAS No.:
Ammonium sulfate	7783-20-2
Microcrystalline cellulose	9004-34-6

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 (based on partial components of the mixture)

HEALTH: 2 FLAMMABILITY: 1 REACTIVITY: 0

HMIS HAZARD CLASSIFICATION (based on partial components of the mixture)

HEALTH: 2 FLAMMABILITY: 1 REACTIVITY: 0

SPECIAL HAZARDS: Not Determined

Date Issued:	11 Dec 2017
Revision Number:	0
Revision Note:	New document

DISCLAIMER: IN NO EVENT SHALL MARRONE BIO INNOVATIONS BE LIABLE FOR ANY

SAFETY DATA SHEET

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.