



Safety Data Sheet (SDS): beetleTERMINATOR!™

1. Identification of the substance/mixture and of the company

1.1 Product identifier

Product Name: beetleTERMINATOR!™

Product type: Biological Insecticide WATER DISPERSIBLE POWDER

PMRA Registration No.: 33317

Active ingredient: Bacillus thuringiensis serovar galleriae strain SDS-502, Cry8Da fermentation solids, spores and insecticidal toxins (Microbial)

CAS No. : 68038-71-1

1.2 Recommended use and restrictions on use:

Selectively controls listed Beetle Adults and Larvae in Turf and Ornamental Plants in Residential and Commercial Settings, Public Landscapes, Nurseries, Greenhouses, and Indoor Plantscapes

1.3 Details of the supplier of the Safety Data Sheet:

Phyllom BioProducts Corp., 484 Lake Park Ave. #23, Oakland, California, 94610 U.S.A. Phone:
1-650-332-5000

Website: <http://www.phyllombioproducts.com>

1.4 Emergency telephone number: 1-800-222-1222

2. Hazards identification

2.1 Classification of the substance or mixture

Not classified

2.2 Labeling elements

Hazard symbol or pictogram: None

Signal Word: CAUTION

2.3 Precautionary Statements:

Causes moderate eye irritation. Harmful if absorbed through the skin or swallowed. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse. When handling this product, wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

2.4 Other hazards: None identified

3. Composition information on ingredients

Ingredient

Bacillus thuringiensis galleriae strain/serovar SDS-502

CAS No. 68038-71-1

Concentration Minimums

Percentage MP Minimum	76.5% (w/w)
Colony Forming Units	8.5×10 ⁹ CFU/g

4. First aid measures

4.1 Description of first aid measures

- If in eyes:**
- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
 - Remove contact lenses if present, after the first 5 minutes, then continue rinsing eye.
 - Call a poison control center or doctor for treatment advice.
- If on skin or clothing:**
- Take off contaminated clothing.
 - Rinse skin immediately with plenty of water for 15-20 minutes.
 - Call a poison control center or doctor for treatment advice.
- If swallowed:**
- Have person sip a glass of water if able to swallow.
 - Do not induce vomiting unless told to by a poison control center or doctor.
 - Do not give anything by mouth to an unconscious person.
 - Call a poison control center or doctor immediately for treatment advice.

4.2 Most important symptoms and effects, both acute and delayed

None specified

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically

5. Firefighting measures

5.1 Extinguishing media

Dry chemical, foam or carbon dioxide

5.2 Specific hazards arising from the substance

None known

5.3 Thermal decomposition products may include, but are not limited to, CO₂, H₂O, and particulate fillers.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment, and emergency procedures

When handling this product, wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95, long-sleeved shirt, long pants and chemical-resistant gloves. In the



case of leak or spill, recover product and place in an appropriate container for disposal. Avoid breathing dust. Ventilate and wash the spill area.

6.2 Environmental precautions

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State/Provincial Water Board or Regional Office of the Environmental Protection Agency

6.3 Methods and material for containment and clean up

In the case of leak or spill, wear chemical-resistant gloves and clean up leak or spill with a paper towel or other appropriate leak/spill equipment. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

6.4 References to other sections: see section 7 for handling procedures. See section 8 for personal protective equipment. See section 13 for disposal considerations.

7. Handling and Storage

7.1 Precautions for safehandling

Causes moderate eye irritation. Harmful if absorbed through the skin or swallowed. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse. When handling this product, wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

7.2 Conditions for safe storage, including incompatibilities

Do not contaminate water, food or feed by storage or disposal. Store product sealed, in a cool, dry place, and out of direct sunlight.

Storage Temperature (Min/Max): 20 F / 100 F equivalent to -7C / 38 C. Stable for 2 years at Room Temperature and dry conditions

8. Exposure controls / Personal protection

8.1 Control parameters-exposure limits

OSHA permissible exposure limit (PEL): Not established

TWA: Not established

STEL: Not established

8.2 Exposure controls

Oral Protection: Prevent eating, drinking, tobacco usage, and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

Eye Protection: To avoid eye contact, wear safety glasses with side shields or safety goggles.

Skin Protection: To avoid skin contact, wear rubber or latex gloves, long-sleeved shirts and long pants. Remove and wash contaminated clothing before reuse.

Respiratory protection: Avoid inhaling/breathing dust. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

9. Physical and chemical properties			
Physical state:	Granule	Lower Explosive Limits (LEL)	Not Determined
Color:	Tan	pH:	6 - 7.2
Odor:	Slightly Sweet	Solubility in Water:	Relatively insoluble
Boiling Point Range:	N/A	Specific Gravity/ Density:	Not Determined
Melting Point / Freezing Point:	N/A	Bulk Density:	0.63 g/cc
Flash Point:	N/A	% Volatile by Weight:	Not Determined
Auto Ignition:	N/A	Vapor Pressure at 20 C:	Not Determined
Upper Explosive Limits (UEL):	Not Determined	Vapor Density:	Not Determined

10. Chemical Stability and Reactivity
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10.1 Reactivity: Not reactive

10.2 Chemical Stability: Stable

10.3 Possibility of hazardous reactions: None known

10.4 Conditions to avoid: None known

10.5 Incompatible materials: None known

10.6 Hazardous decomposition products: None known

11. Toxicological Information

Acute toxicity effects for Phyllom SDS-502 MP:

Oral LD₅₀:	No adverse effects at 2.4 X 10 ⁸ CFU/gr (rodent study)
Dermal LD₅₀:	>2020 mg/kg body weight (rabbit study) Toxicity Category III
Inhalation LD₅₀:	> 4.30 mg/L (rodent study) Toxicity Category IV
Skin corrosion/irritation:	see dermal above
Eye irritation:	mildly irritating, Toxicity Category III
Dermal sensitization:	See dermal above

Mutagenic Potential: components of this product are not listed as mutagens

Reproductive toxicity: this material is not teratogenic

Carcinogenicity:

NTP..... N/A

LARC..... N/A

OSHA..... N/A

12. Ecological Information

12.1 Toxicity

Test species	Test method	Test substance	Test result
Avian, mallard duck	Oral toxicity/pathogenicity	Btg strain SDS-502	MDD 3 X 10 ¹¹ cfu/gr
Mammals, wild	Waived based on rodent acutes	Btg strain SDS-502	No risk anticipated
Fish	Waived based on Bt studies	N/A	No risk anticipated
<i>Daphnia magna</i>	21-day static renewal	Btg strain SDS-502	EC ₅₀ >100 mg/L
<i>Hippodamia convergens</i>	Dietary toxicity/pathogenicity	Btg strain SDS-502	LC ₅₀ >1700ppm
<i>Apis mellifera L. larva</i>	Dietary toxicity/pathogenicity	Cry8Da protein	NOEC 500 ng/cell

Summary of toxicity regulatory reviews

Phyllom SDS-502 MP (Manufacturing use product): No adverse effects to aquatic invertebrates, fish, birds, mammals or non-target insects are anticipated by the normal use and handling and transportation of this product. Environmental hazards: For terrestrial uses: Do not apply directly to water, 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 waters or rinse water.

Eco-Acute Toxicity

Bacillus thuringiensis No Toxicity to European honeybee or beneficial wasps

Evaluation of Dietary Effect of SDS-502 Cry8Da on Larval Honeybee Development (*Apis mellifera L.*)

The objective of this study was to evaluate potential dietary effect of a SDS-502 Cry8Da protein toxin concentrate in combination with 30% sucrose on development of the honeybee larvae, (*Apis mellifera L.*). A dietary study was chosen because ingestion of the SDS-502 Cry8Da protein toxin is anticipated to be the primary route of bee exposure. Based on the data analysis, there were no significant differences in the survival probabilities of honeybee larvae between the SDS-502 Cry8Da protein toxin in combination with 30% sucrose, 50 mM CAPS Buffer (test substance), or sterile water (negative control) treatments, while the potassium arsenate (chemical control) treatment had no survival.

12.2 Persistence and degradability: degrades when exposed to UV light and microbial activity

12.3 Bioaccumulative potential: *Bacillus thuringiensis subsp. galleriae strain SDS-502*: is not pathogenic and has not been shown to reproduce in living organisms other than target Coleoptera spp. (specific beetle species).

12.4 Mobility in soil: N/A

13. Disposal Considerations

Do not contaminate water, food or feed by storage or disposal.

DO NOT reuse the empty containers. Dispose in household garbage. Unused or partially used products should be disposed at provincially or municipally designated hazardous waste disposal sites.

14. Transportation Information

D.O.T. status: Not Regulated as hazardous by DOT

D.O.T. Hazard Class: Not Regulated

U.N. Number: Not Regulated

Freight classification: Insecticide, N.O.S.

IATA/ICAO status: Not Regulated

IMO status: Not Regulated

15. Regulatory Information

TSCA Status: Exempt

OSHA hazard communication standard: Not defined by the OSHA Hazard communication standard, 29 CFR

CERCLA Reportable Quantity: None

SARATitle III Section 302: N/A; Section 311/312/313: N/A

RCRA Status: N/A

PMRA Registration No.: 33317

16. Other Information

The information and recommendations contained herein are based upon tests believed to be reliable. However, neither Phyllom BioProducts Corp. nor any of its affiliates assume any liability whatsoever for the accuracy and or completeness of the information contained herein. Final determination of the suitability of any material is the sole responsibility of the user. To the extent consistent with applicable law, Phyllom BioProducts Corp. makes no express or implied warranty of merchantability or fitness for a particular purpose or any other express or implied warranty.