

Safety Data Sheet (SDS)
grubGONE! G®

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

1.1 Product identifier

Product Name: grubGONE! G®

Product type: An end use spreadable granule

US EPA Registration No.: 88347-2

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:

For use as bio-insecticide product to control certain beetle grub pests. Always read and follow the product label instructions when handling this product.

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:

Harmful if absorbed through the skin, inhaled, or swallowed. Avoid contact with skin, eyes, or clothing and breathing dust. 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.

2.4 Other hazards: None identified

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3. Composition information on ingredients

Ingredient	CAS No.	WT.%
Bacillus thuringiensis serovar galleriae strain SDS-502	68038-71-1	9.0
Inert ingredients: unspecified		91.0
Total		100

4. First aid measures

4.1 Description of first aid measures

If on skin or clothing:	<ul style="list-style-type: none"> • 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 inhaled:	<ul style="list-style-type: none"> • Move person to fresh air. • If 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 further treatment advice.
If swallowed:	<ul style="list-style-type: none"> • 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 doctor. • Do not give anything by mouth to an unconscious person.

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. Fire fighting 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

Applicators and handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- A NIOSH-approved particulate respirator with any R or P filter with NIOSH approval number prefix TC-84A; or a NIOSH-approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. (Repeated exposure to high concentrations of microbial proteins can

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cause allergic sensitization.)

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions are available for washables, use detergent and hot water. Keep and wash PPE separately from laundry.

6.2 Environmental precautions

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 washwaters or rinsate. 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

No manual application can be made within 300 feet of any threatened or endangered Lepidoptera or Coleoptera.

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. Recover product and place in an appropriate container for disposal. Avoid breathing dust. 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 safe handling

Harmful if absorbed through the skin, inhaled, or swallowed. Avoid contact with skin, eyes, or clothing and breathing dust. 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.

Applicators and handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- A NIOSH-approved particulate respirator with any R or P filter with NIOSH approval number prefix TC-84A; or a NIOSH-approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. (Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.)

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions are available for washables, use detergent and hot water. Keep and wash PPE separately from laundry.

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): 32C / 90 F equivalent to 0 F / 32 C

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Stable for at least 2 years if stored in dry conditions and within storage temperature range above.

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 water proof gloves, long-sleeved shirt, long pants, shoes and socks. Remove and wash contaminated clothing before reuse.

Respiratory protection: When handling this product, wear a NIOSH-approved particulate respirator with any R or P filter with NIOSH approval number prefix TC-84A; or a NIOSH-approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. (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:	Light brown	pH:	6-8
Odor:	Earthy/ yeast like	Solubility in Water:	insoluble
Boiling Point Range:	N/A	Specific Gravity/ Density:	Not Determined
Melt Point / Freeze Point:	N/A	Bulk Density:	52 lbs/cubic ft
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

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

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11. Toxicological Information

Acute toxicity effects for Btg strain SDS-502 the active ingredient or grubGONE! G

Oral LD ₅₀ :	No adverse effects at 2.4 X 10 ⁸ CFU/gr (rodent study)
Dermal LD ₅₀ :	>2020 mg/kg body weight (rabbit study) Toxicity Category III
Inhalation LD ₅₀ :	> 4.30 mg/L (rodent study) Toxicity Category IV
Skin corrosion/irritation:	see dermal above
Eye irritation:	minimally irritating, Toxicity Category IV based on grubGONE! G end use product
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

grubGONE! G: No adverse affects to aquatic invertebrates, fish, birds, mammals or non target insects are anticipated by the normal use and handling and transportation of this product.

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. (certain beetles).*

12.4 Mobility in soil: N/A

13. Disposal Considerations

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

Wastes resulting from the use of this product may be disposed of on site or at an approved waste facility. For guidance, contact your State/Provincial Water Board or Regional Office of the US EPA or appropriate Federal Regulatory Agency.

For fiberboard drums with a polyethylene liner or polyethylene bags: Nonrefillable container. Do not reuse or refill this container. Completely empty liner/bag by shaking and tapping sides and bottom to loosen clinging particles. Empty residues into manufacturing equipment. Then, offer for recycling if available, dispose of empty liner/bag in a sanitary landfill or by incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke. If drum is contaminated and cannot be reused, dispose of it in the manner required for its liner/bag. For polyethylene-lined paper bags: Nonrefillable container. Do not reuse or refill this container. Completely empty bag into manufacturing equipment. Then, offer for recycling if available, dispose of empty bag in a sanitary landfill or by incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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/CAO 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

SARA Title III

Section 302: N/A

Section 311/312/313: N/A

RCRA Status: N/A

US EPA Registration No.: 88347-2

16. Other Information

The information and recommendations contained herein are based upon tests believed to be reliable. However, neither Phyllom BioProducts 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.