



MATERIAL SAFETY DATA SHEET

Product or Chemical Name

Page 1 of 4

Bull's-Eye™ Bioinsecticide

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Bull's-Eye™ Bioinsecticide
IDENTIFICATION NUMBER: 1784, 1785, 8756, 8757, 8758
USE OF THE PREPARATION: Insecticide
MANUFACTURER: Gardens Alive!®, Inc.
ADDRESS: 5100 Schenley Place, Lawrenceburg, IN 47025
TELEPHONE NUMBER: (812) 537-8665, Ext. 2285
ISSUE DATE: October 5, 2005
For Chemical Emergency Call Chemtrec (24 hours):
800-424-9300 (U.S., Canada, Puerto Rico, Virgin Islands)
DISTRIBUTOR: Gardens Alive!®, Inc.
ADDRESS: 5100 Schenley Place, Lawrenceburg, IN 47025
TELEPHONE NUMBER: (812) 537-8665, Ext. 2285

SECTION 2: HAZARDOUS INGREDIENTS

EPA Reg. No. 62719-314-56872

Preparation contains:	CAS No:	% (by weight):
Spinosad: Spinosyn A	131929-60-7	0.5%
Spinosyn D	131929-63-0	
Inert Ingredients, total, including:		99.5%
Propylene glycol (1,2-Propanediol)	000057-55-6	

EMERGENCY OVERVIEW

Off-white to tan liquid suspension with low odor. May cause slight eye irritation. The LD₅₀ for skin absorption in rabbits is >5000 mg/kg. The oral LD₅₀ for rats is >5000 mg/kg. Product is highly toxic to marine mollusks, moderately to slightly toxic to fish, slightly toxic to aquatic invertebrates and practically non-toxic to birds. Emergency Phone Number: 800-992-5994.

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR) 1910.1300). In addition, other substances not "Hazardous" per this OSHA Standard may be listed. Where proprietary ingredient shows the identity may be made available as provided in this standard.

SECTION 3: FIRST AID PROCEDURES

Eyes: Flush eyes with plenty of water.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Skin: Wash off in flowing water or shower.

Inhalation: Remove to fresh air if effects occur. Consult a physician.

Note To Physician: No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

SECTION 4: HEALTH HAZARD INFORMATION

Potential Health Effects: This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

Eye: May cause slight eye irritation.

Skin: The LD₅₀ for skin absorption is >5000 mg/kg. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. Prolonged exposure is not likely to cause significant skin irritation. Did not cause allergic skin reactions when tested in guinea pigs.

Ingestion: Very low toxicity if swallowed. The oral LD₅₀ for rats and mice is >5000 mg/kg. Harmful effects not anticipated from swallowing small amounts.

Inhalation: No adverse effects are anticipated from single exposure to mists. The aerosol LC₅₀ for rats is >5.0 mg/L for 4 hours (limit test).

Systemic Other Target Organs) Effects: Repeated exposure did not produce systemic toxicity when applied to the skin of rabbits.



MATERIAL SAFETY DATA SHEET

Product or Chemical Name

Page 2 of 4

Bull's-Eye™ Bioinsecticide

SECTION 4: HEALTH HAZARD INFORMATION (CONTINUED)

Cancer Information:	Spinosad did not cause cancer in laboratory animals.
Teratology (Birth Defects):	Spinosad did not cause birth defects in laboratory animals.
Reproductive Effects:	For spinosad, in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

SECTION 5: FIRE & EXPLOSION DATA

Flash Point:	>200 Closed Cup
Method Used:	Not applicable
Flammable Limits:	LFL: Not determined (water-based product) UFL: Not determined (water-based product)
Extinguishing Media:	To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.
Fire and Explosion Hazards:	Keep people away. Isolate fire area and deny unnecessary entry. Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds.
Fire-Fighting Equipment:	Wear positive-pressure, self-contained breathing apparatus (SCBA) and protective fire-fighting clothing (includes fire-fighting helmet, coat, pants, boots and gloves). If protective equipment is not available or not used fight fire from a protected location or safe distance.
Boiling Point:	100°C (212°F) water
Physical State:	Liquid suspension
Odor:	Low
Density:	1.09 g/ml
Solubility in Water:	Disperse
Vapor Pressure:	Similar to water
Appearance:	Off-white to light tan
Stability (Conditions to Avoid):	Thermally stable at typical use temperatures. Some components of this product can decompose at elevated temperatures.
Incompatibility (Specific Materials to Avoid):	None known
Hazardous Decomposition Products:	Hazardous decomposition products depend upon temperature, air supply and the presence of other materials.
Hazardous Polymerization:	Not known to occur.
pH (As Is):	Not required

SECTION 6: PERSONAL PROTECTION & PRECAUTIONS

These precautions are suggested for conditions with a high potential for exposure. If handling procedures are such that there is only a low potential for exposure, less protection may be needed. Emergency conditions may require additional precautions.

Exposure Guidelines:	Propylene glycol: AIHA WEEL is 50ppm total, 10 mg/M ³ aerosol only. Spinosad: Dow AgroScience Industrial Hygiene Guideline is 0.3 mg/M ³ , TWA.
Engineering Controls:	Good general ventilation should be sufficient for most conditions.
Eye/Face Protection:	Use of safety glasses is recommended.
Skin Protection:	No precautions other than clean body covering clothing (i.e. long-sleeved shirt and long pants, shoes plus socks and waterproof gloves) should be needed.
Respiratory Protection:	No respiratory protection should be needed.

SECTION 7: SPECIAL PRECAUTIONS & SPILL/LEAK PROCEDURES

Action to Take for Spills/Leaks: Use non-reactive absorbent to absorb small spills and collect for disposal. For large spills, contain the material and report to Dow AgroScience at 800-992-5994.

Mutagenicity: For spinosad, in-vitro and animal mutagenicity studies were negative.

Environmental Fate:

Movement & Partitioning: Bio concentration potential is low.

Bioconcentration factors for rainbow trout are:

Spinosyn A=19

Spinosyn D=33



MATERIAL SAFETY DATA SHEET

Product or Chemical Name

Page 3 of 4

Bull's-Eye™ Bioinsecticide

SECTION 7: SPECIAL PRECAUTIONS & SPILL/LEAK PROCEDURES (CONTINUED)

Degradation and Persistence:

Based largely or completely on information for Spinosyn A: The photolysis half-life in soil is 8.68 days, the photolysis half-life in pH 7 buffer is 0.96 days. Under aerobic soil conditions the half-life is 9.4 and 14.5 days. Based largely or completely on information for Spinosyn D: The photolysis half-life in soil is 9.44 days, the photolysis half-life in pH 7 buffer is 0.84 days. Under aerobic soil conditions the half-life is 14.5 days.

Ecotoxicology:

Product is highly toxic to marine mollusks on an acute basis (LC₅₀/EC₅₀ between 0.1 and 1.0 mg/L in most sensitive species).

Acute EC₅₀ for shell deposition inhibition in eastern oyster (*Crassostrea virginica*) is 0.295 mg/L.

Product is moderately to slightly toxic to fish on an acute basis (LC₅₀ between 1 and 100 mg/L).

Acute LC₅₀ for mirror or common carp (*Cyprinus carpio*) is 3.49-4.99 mg/L.

Acute LC₅₀ for bluegill (*Lepomis macrochirus*) is 5.94 mg/L.

Acute LC₅₀ for sheepshead minnow (*Cyprinodon variegates*) is 7.87 mg/L.

Acute LC₅₀ for rainbow trout (*Oncorhynchus mykiss*) is 30 mg/L.

Product is slightly toxic to aquatic invertebrates on an acute basis LC/EC₅₀ between 10 and 100 mg/L.

Acute LC₅₀ for water flea (*Daphnia magna*) is 92.7 mg/L.

Acute immobilization EC₅₀ for water flea (*Daphnia magna*) is 14 mg/L.

Acute LC₅₀ for grass shrimp (*Palaemonetes pugio*) is >9.76 mg/L.

Maximum acceptable toxicant concentration (MATC) is 0.692 mg/L in rainbow trout.

Growth inhibition EC₅₀ for diatom (*Navicula* sp.) is 0.107 mg/L.

Growth inhibition EC₅₀ for marine diatom (*Skeletonema costatum*) is 0.227 mg/L.

Growth inhibition EC₅₀ for blue-green alga (*Anebaena flosaquae*) is 8.09 mg/L.

Product is practically non-toxic to birds on an acute basis (LD₅₀>2000 mg/kg).

Product is practically non-toxic to birds on a dietary basis (LC₅₀>5000ppm).

Acute oral LD₅₀ for bobwhite (*Colinus virginianus*) is >2000 mg/kg.

Acute oral LD₅₀ for mallard (*Anas platyrhynchos*) is >2000 mg/kg.

Dietary LC₅₀ for bobwhite (*Colinus virginianus*) is >5253ppm.

Dietary LC₅₀ for mallard (*Anas platyrhynchos*) is >5156ppm.

SECTION 8: STORAGE & DISPOSAL

Precautions to be Taken in Handling and Storage: Keep out of reach of children. Avoid eye contact. Do not take internally. Wash thoroughly after handling and before eating, drinking or smoking. Store product in original container. See product label for additional instructions.

Disposal Method: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws and regulations.

SECTION 9: REGULATORY INFORMATION

This product is not regulated by DOT when shipped domestically by land.

U.S. Regulations

SARA 313 Information: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: An immediate health Hazard. A delayed health hazard.

State-Right-To-Know: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the Hazardous Ingredients section of the MSDS.

Chemical Name	CAS Number	Lists
1,2-Propanediol	000057-55-6	PA1

PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).



MATERIAL SAFETY DATA SHEET

Product or Chemical Name

Bull's-Eye™ Bioinsecticide

Page 4 of 4

SECTION 9: REGULATORY INFORMATION (CONTINUED)

Comprehensive Environmental Response Compensation and Liability Act (CERCLA, or Superfund): To the best of our knowledge this product contains no chemical subject to reporting under CERCLA.

Notice: The information herein is presented in good faith and believed to be accurate of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial and local laws and regulations.

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. By making the MSDS available, Gardens Alive!®, Inc. does not make any express or implied warranty (including any warranty of merchantability or fitness for a particular purpose) regarding the MSDS, its accuracy or the product to which it relates. Anyone using this information agrees that Gardens Alive! shall not be held liable (based on its negligence or otherwise) for any personal injury or other damage relating to, or arising from such use, including direct, incidental, or consequential damage and such user agrees to indemnify Gardens Alive!®, Inc. for any claims arising out of its use.