



Product: LAWN & GARDEN SPRAY
SPINOSAD

EPA Reg. No.: 869-245

Effective Date: 09/01/2004

MATERIAL SAFETY DATA SHEET

Emergency Phone 800/535-5053

Size	Product Number	UPC Code
Pint	41116	0 49424 41116 0
Quart	41140	0 49424 41140 5

Note: Be sure to compare the EPA registration number as given on the MSDS with the EPA registration number as given on the label as some products have had the active ingredients changed without a corresponding change in the UPC number or in the item description.

1. INGREDIENTS:

Spinosad	Spinosyn A:	CAS#: 131929-60-7	0.5%
	Spinosyn D:	CAS#: 131929-63-0	
Balance, Total, Including Propylene glycol (1,2-Propanediol)		CAS#: 000057-55-6	99.5%

2. PHYSICAL DATA:

BOILING POINT:	100°C (212°F) water
PHYSICAL STATE:	Liquid suspension
ODOR:	Low
DENSITY:	1.015 g/mL
SOLUBILITY IN WATER:	Disperse
VAPOR PRESSURE:	Similar to water
APPEARANCE:	Off-white to light tan

3. FIRST AID MEASURES:

EYE:	Hold eyes 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 eyes. Call a poison control center or doctor for treatment advice.
SKIN:	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.
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 do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.
INHALATION:	Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably by mouth to mouth. Call a poison control center or doctor for further treatment advice.
NOTE TO PHYSICIAN:	No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

4. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT:	Not determined (aqueous suspension)
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.



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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.

5. STABILITY & REACTIVITY DATA:

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.

6. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE

MOVEMENT & PARTITIONING:

Bioconcentration potential is low.

Bioconcentration factors for rainbow trout are:

Spinosyn A = 19

Spinosyn D = 33

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 variegatus*) 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.



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Growth inhibition EC_{50} for blue-green alga (*Anabaena flos-aquae*) is 8.09 mg/L.

Product is practically non-toxic to birds on an acute basis (LD_{50} >2000 mg/kg).

Product is practically non-toxic to birds on a dietary basis (LC_{50} >5000 ppm).

Acute oral LD_{50} for bobwhite (*Colinus virginianus*) is >2000 mg/kg.

Acute oral LD_{50} for mallard (*Anas platyrhynchos*) is >2000 mg/kg.

Dietary LC_{50} for bobwhite (*Colinus virginianus*) is >5253 ppm.

Dietary LC_{50} for mallard (*Anas platyrhynchos*) is >5156 ppm.

7. DISPOSAL CONSIDERATIONS:
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.

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 AgroSciences at 800-992-5994.

8. HANDLING AND STORAGE:
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.

9. HEALTH HAZARD DATA:
POTENTIAL HEALTH EFFECTS:

EYE:

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

May cause slight eye irritation. Corneal injury is unlikely. May cause pain disproportionate to the level of irritation to eye tissues.

SKIN:

Prolonged contact may cause slight skin irritation with local redness. The LD_{50} for skin absorption in rabbits is >5000 mg/kg. Prolonged skin contact is unlikely to result in absorption of harmful amounts. Did not cause allergic skin reactions when tested in guinea pigs.

INGESTION:

Very low toxicity if swallowed. The oral LD_{50} 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 mist. The aerosol LC_{50} 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.

CANCER INFORMATION:

Spinosad did not cause cancer in laboratory animals.

TERATOLOGY (BIRTH DEFECTS):

Spinosad did not cause birth defects in laboratory animals.



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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.

MUTAGENICITY: For spinosad, in-vitro and animal genetic toxicity studies were negative.

10. EXPOSURE CONTROLS, PERSONAL PROTECTION:

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

EXPOSURE GUIDELINES: Propylene glycol: AIHA WEEL is 10 mg/M³ vapor and aerosol.
Spinosad: Dow AgroSciences Industrial Hygiene Guideline is 0.3 mg/M³, TWA

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use of safety glasses is recommended.

SKIN PROTECTION: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guidelines.

APPLICATORS AND ALL

OTHER HANDLERS: Refer to the product label for personal protective clothing and equipment.

11. TRANSPORT INFORMATION:

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

12. REGULATORY INFORMATION:

NOTICE: The information herein is presented in good faith and believed to be accurate as 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.

U.S. REGULATIONS

SARA 313 INFORMATION:

SARA HAZARD CATEGORY:

STATE RIGHT-TO-KNOW:

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

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.

The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

<u>CHEMICAL NAME</u>	<u>CAS NUMBER</u>	<u>LIST</u>
1,2-Propanediol	000057-55-6	PA1

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



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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.

The information presented herein is based on available data from reliable sources and is correct to the best of our knowledge. Green Light makes no warranty, express or implied, regarding the accuracy of the data or the results obtained from the use of this product. Nothing herein may be construed as recommending any practice or any product in violation of any law or regulations. The user is solely responsible for determining the suitability of any material or product for a specific purpose and for adopting any appropriate safety precautions. We disclaim all liability for injury or damage stemming from any improper use of the material or product described herein.