

Product Name: BLACKHAWK (TM) Insecticide**Issue Date:** 05/24/2013**Print Date:** 24 May 2013

Dow AgroSciences LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification**Product Name**

BLACKHAWK™ Insecticide

COMPANY IDENTIFICATION

Dow AgroSciences LLC
A Subsidiary of The Dow Chemical Company
9330 Zionsville Road
Indianapolis, IN 46268-1189
United States

Customer Information Number:

800-992-5994

SDSQuestion@dow.com**EMERGENCY TELEPHONE NUMBER****24-Hour Emergency Contact:**

800-992-5994

Local Emergency Contact:

352-323-3500

2. Hazards Identification**Emergency Overview****Color:** Brown**Physical State:** Solid.**Odor:** Mild**Hazards of product:**

CAUTION! May cause eye irritation. Isolate area. Highly toxic to fish and/or other aquatic organisms.

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects**Eye Contact:** May cause slight eye irritation. Corneal injury is unlikely.**Skin Contact:** Essentially nonirritating to skin.**Skin Absorption:** Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Inhalation: No adverse effects are anticipated from inhalation. Based on the available data, respiratory irritation was not observed.

Ingestion: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

Aspiration hazard: Based on physical properties, not likely to be an aspiration hazard.

Effects of Repeated Exposure: For the active ingredient(s): In animals, Spinosad has been shown to cause vacuolization of cells in various tissues. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

Reproductive Effects: For the active ingredient(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

3. Composition Information

| Component | CAS # | Amount |
|----------------|---------------|--------|
| Spinosad A & D | | 36.0 % |
| Balance | Not available | 64.0 % |

Spinosad is comprised of Spinosyn A (CAS # 131929-60-7) and Spinosyn D (CAS # 131929-63-0)

4. First-aid measures

Description of first aid measures

General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: No emergency medical treatment necessary.

Skin Contact: 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.

Eye Contact: 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.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. Fire Fighting Measures

Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam.

Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Dense smoke is produced when product burns.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. If material is molten, do not apply direct water

stream. Use fine water spray or foam. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires. Move container from fire area if this is possible without hazard. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to Section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. Handling and Storage

Handling

General Handling: Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing dust or mist. Wash thoroughly after handling. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage

Store in a dry place. Store in original container. Do not store near food, foodstuffs, drugs or potable water supplies.

8. Exposure Controls / Personal Protection

Exposure Limits

| Component | List | Type | Value |
|----------------|---------|------|-----------|
| Spinosad A & D | Dow IHG | TWA | 0.3 mg/m3 |

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Personal Protection

Eye/Face Protection: Use safety glasses (with side shields).

Skin Protection: No precautions other than clean body-covering clothing should be needed.

Hand protection: Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

9. Physical and Chemical Properties

| | |
|---|---|
| Appearance | |
| Physical State | Solid. |
| Color | Brown |
| Odor | Mild |
| Odor Threshold | No test data available |
| pH | 9.4 (@ 1 %) <i>pH Electrode</i> |
| Melting Point | No test data available |
| Freezing Point | Not applicable |
| Boiling Point (760 mmHg) | Not applicable. |
| Flash Point - Closed Cup | Not applicable |
| Evaporation Rate (Butyl Acetate = 1) | Not applicable |
| Flammability (solid, gas) | No data available |
| Flammable Limits In Air | Lower: Not applicable Upper: Not applicable |
| Vapor Pressure | Not applicable |
| Vapor Density (air = 1) | Not applicable |
| Specific Gravity (H₂O = 1) | Not applicable |
| Solubility in water (by weight) | No test data available |
| Partition coefficient, n-octanol/water (log Pow) | No data available for this product. See Section 12 for individual component data. |
| Autoignition Temperature | Not applicable |
| Decomposition Temperature | No test data available |
| Dynamic Viscosity | Not applicable |
| Explosive properties | No |
| Oxidizing properties | No significant increase (>5C) in temperature. |
| Bulk Density | 550 kg/m ³ <i>Calculated</i> (Room Temperature) |

10. Stability and Reactivity

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical stability

Thermally stable at recommended temperatures and pressures.

Possibility of hazardous reactions

Polymerization will not occur.

Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: None known.

Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Nitrogen oxides.

11. Toxicological Information

Acute Toxicity

Ingestion

As product: LD50, rat, female > 5,000 mg/kg

Dermal

As product: LD50, rat, male and female > 5,000 mg/kg

Inhalation

LC50, 4 h, Aerosol, rat, male and female > 5.51 mg/l

Eye damage/eye irritation

May cause slight eye irritation. Corneal injury is unlikely.

Skin corrosion/irritation

Essentially nonirritating to skin.

Sensitization

Skin

Did not demonstrate the potential for contact allergy in mice.

Respiratory

No relevant data found.

Repeated Dose Toxicity

For the active ingredient(s): In animals, Spinosad has been shown to cause vacuolization of cells in various tissues. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

Chronic Toxicity and Carcinogenicity

For the active ingredient(s): Did not cause cancer in laboratory animals.

Developmental Toxicity

For the active ingredient(s): Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Reproductive Toxicity

For the active ingredient(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

Genetic Toxicology

For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. Ecological Information

Toxicity

Data for Component: **Spinosad A & D**

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested). Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg). Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

Fish Acute & Prolonged Toxicity

LC50, *Lepomis macrochirus* (Bluegill sunfish), 96 h: 5.9 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, *Daphnia magna* (Water flea), 48 h, immobilization: 1.5 mg/l

EC50, eastern oyster (*Crassostrea virginica*), shell growth inhibition: 0.295 mg/l

Aquatic Plant Toxicity

EbC50, diatom *Navicula* sp., biomass growth inhibition, 5 d: 0.107 mg/l

EbC50, *Pseudokirchneriella subcapitata* (green algae), 7 d: 39 mg/l

EC50, *Lemna gibba*, 14 d: 10.6 mg/l

Toxicity to Micro-organisms

; Bacteria: > 100 mg/l

Fish Chronic Toxicity Value (ChV)

Oncorhynchus mykiss (rainbow trout), flow-through test, mortality, NOEC: 0.5 mg/l

Aquatic Invertebrates Chronic Toxicity Value

Daphnia magna (Water flea), NOEC: 0.0012 mg/l

Toxicity to Above Ground Organisms

oral LD50, *Colinus virginianus* (Bobwhite quail): > 2000 mg/kg bodyweight.

dietary LC50, *Colinus virginianus* (Bobwhite quail): > 5253 mg/kg diet.

oral LD50, *Apis mellifera* (bees): 0.06 micrograms/bee

contact LD50, *Apis mellifera* (bees): 0.05 micrograms/bee

Toxicity to Soil Dwelling Organisms

LC50, *Eisenia fetida* (earthworms), 14 d: > 970 mg/kg

Persistence and Degradability

Data for Component: **Spinosad A & D**

Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%). Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

Stability in Water (1/2-life):

; 25 °C; pH 7; Stable

200 - 259 d; 25 °C; pH 9

0.84 - 0.96 d; pH 7

; 25 °C; pH 5; Stable

OECD Biodegradation Tests:

| Biodegradation | Exposure Time | Method | 10 Day Window |
|----------------|---------------|----------------|---------------|
| < 1 % | 28 d | OECD 301B Test | fail |

Biological oxygen demand (BOD):

| BOD 5 | BOD 10 | BOD 20 | BOD 28 |
|----------|----------|----------|----------|
| 66.000 % | 68.000 % | 76.000 % | 77.000 % |

Bioaccumulative potential

Data for Component: **Spinosad A & D**

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Partition coefficient, n-octanol/water (log Pow): 4.01

Bioconcentration Factor (BCF): 33; Fish; Measured

Mobility in soil

Data for Component: **Spinosad A & D**

Mobility in soil: Potential for mobility in soil is low (Koc between 500 and 2000).

Partition coefficient, soil organic carbon/water (Koc): 701 Measured

Henry's Law Constant (H): For similar active ingredient(s): 1.89E-07

13. Disposal Considerations

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.

14. Transport Information

DOT Non-Bulk
NOT REGULATED

DOT Bulk
NOT REGULATED

IMDG

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
Technical Name: Spinosad
Hazard Class: 9 **ID Number:** UN3077 **Packing Group:** PG III
EMS Number: F-A,S-F
Marine pollutant.: Yes

ICAO/IATA

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
Technical Name: Spinosad
Hazard Class: 9 **ID Number:** UN3077 **Packing Group:** PG III
Cargo Packing Instruction: 956
Passenger Packing Instruction: 956
Additional Information

MARINE POLLUTANT

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

| | |
|-----------------------------------|----|
| Immediate (Acute) Health Hazard | No |
| Delayed (Chronic) Health Hazard | No |
| Fire Hazard | No |
| Reactive Hazard | No |
| Sudden Release of Pressure Hazard | No |

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Toxic Substances Control Act (TSCA)

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

16. Other Information

Hazard Rating System

| NFPA | Health | Fire | Reactivity |
|------|--------|------|------------|
| | 1 | 1 | 0 |

Revision

Identification Number: 1054759 / 1016 / Issue Date 05/24/2013 / Version: 2.1

DAS Code: GF-2886

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

| | |
|--------------|---|
| N/A | Not available |
| W/W | Weight/Weight |
| OEL | Occupational Exposure Limit |
| STEL | Short Term Exposure Limit |
| TWA | Time Weighted Average |
| ACGIH | American Conference of Governmental Industrial Hygienists, Inc. |
| DOW IHG | Dow Industrial Hygiene Guideline |
| WEEL | Workplace Environmental Exposure Level |
| HAZ_DES | Hazard Designation |
| Action Level | A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded. |

Dow AgroSciences LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided 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 between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have

obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.