MATERIAL SAFETY DATA SHEET

Emergency Phone: 1800-033-882
Dow AgroSciences Australia Ltd.
Frenchs Forest NSW 2086

SUCCESS* 2 NATURALYTE* INSECT CONTROL

Effective Date: 21 April 2006
Product Code: 103778

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Success* 2 Naturalyte* Insect Control

COMPANY IDENTIFICATION:

Dow AgroSciences Australia Ltd.
ABN 24 003 771 659
Level 5, 20 Rodborough Road,
Frenchs Forest NSW 2086

Customer Service Toll Free Number:
1800 700 096
(Mon-Fri, 8am–5pm EST)
Emergency Telephone Number:
1800 033 882
(24 hours) (EMERGENCIES ONLY)
Transport Emergency Only Dial 000

2. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW
HAZARDOUS (according to criteria of NOHSC)
NON-DANGEROUS GOOD FOR ROAD TRANSPORT

Risk:
R36/38: Irritating to eyes and skin
R50: Very toxic to aquatic organisms

Safety:
S2: Keep out of reach of children
S13: Keep away from food, drink and animal feeding stuffs
S24/25: Avoid contact with skin and eyes.
S37/39: Wear suitable gloves and eye/face protection
S20/21: When using do not eat, drink or smoke

EMERGENCY PHONE NUMBER: 1800-033-882

3. COMPOSITION/INFORMATION ON INGREDIENTS:

Spinosad: Spinosyn A	CAS # 131929-60-7	22.8%
Spinosyn D	CAS # 131929-63-0	
Balance, Total, Including		77.2%
Propylene glycol	CAS # 000057-55-6	

4. FIRST AID:

Consult the Poisons Information Centre (Australia 13 11 26) or a doctor in every case of suspected chemical poisoning. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur seek medical attention immediately.

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, and 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 centre 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 Information Center or doctor. Never give anything by mouth to an unconscious person.

INHALATION: Move person to fresh air. If person is not breathing, call 000 (ambulance), and then give artificial respiration, preferably by mouth to mouth. Call the Poison Information 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.

5. FIRE FIGHTING MEASURES:

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.
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.

HAZCHEM: 2X

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS/LEAKS: DO NOT touch or walk through spilled material. Wear a face shield or goggles, overalls buttoned to neck and wrist, chemical resistant gloves and boots. Stop leak when safe to do so. Dike area and prevent entry into waterways, and drains. **Small spills/leaks:** Absorb with material such as sand, soil or sawdust. Collect spilled product and place in sealable container for disposal. Spill residues may be cleaned using water and detergent. Contain and absorb wash water for disposal. Absorb and collect washings and place in the same sealable container for disposal. Dike the area of large spills and report them to Dow AgroSciences Emergency Services at 1800-033-882.

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

HANDLING: Keep out of reach of children. Harmful if swallowed, inhaled, or absorbed through skin. Causes eye and skin irritation. Avoid contact with eyes, skin and clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

STORAGE: Store in tightly closed original container in a cool, dry well-ventilated area out of direct sunlight when not in use. Do not store with food, feedstuffs, fertilisers and seeds. See product label for further handling/storage precautions relative to the end use of this product. Reduce stacking height where local conditions can affect packaging strength.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

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

EXPOSURE GUIDELINE:
Propylene glycol: TWA 474 mg/m^3 for particulates and vapours (OASCC exposure standard)
Spinosad: Dow AgroSciences Industrial Hygiene Guide is 0.3 mg/m^3, 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:

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

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

EYE/FACE PROTECTION: Use safety glasses.

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

9. PHYSICAL AND CHEMICAL PROPERTIES:

BOILING POINT: 100°C (water)
PHYSICAL STATE: Liquid suspension
ODOR: Mild
DENSITY: 1.05 TO 1.06 gm/mL
SOLUBILITY IN WATER: Dispersible
VAPOR PRESSURE: Similar to water
APPEARANCE: Off-white to light tan

10. STABILITY AND REACTIVITY:

STABILITY (CONDITIONS TO AVOID): Thermally stable at typical use temperatures. Some components of this product can decompose at elevated temperatures.

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INCOMPATIBILITY (SPECIFIC MATERIALS TO AVOID): None known

HAZARDOUS DECOMPOSITION PRODUCTS: Hazardous decomposition products depend upon temperature, air supply, and the presence of other materials. Include oxides of carbon and nitrogen.
HAZARDOUS POLYMERIZATION: Not known to occur.

11. TOXICOLOGICAL 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. 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 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 product 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.

REPRODUCTIVE EFFECTS: In animal studies, spinosad has been shown not to interfere with reproduction.

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

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE:
MOVEMENT & PARTITIONING:
Based largely or completely on data for major component.
Bioconcentration potential is low (BCF <100 or Log Pow <3).
Based largely or completely on information for propylene glycol.
Potential for mobility in soil is very high (Koc between 0 and 50).
Based largely or completely on information for Spinosad.
Potential for mobility in soil is low (Koc between 500 and 2000).

DEGRADATION AND PERSISTENCE:
Based largely or completely on information for Spinosad.
Biodegradation may occur under aerobic conditions (in the presence of oxygen).
Based largely or completely on information for propylene glycol.
Biodegradation under aerobic static laboratory conditions is high (BOD_{20} or BOD_{28}/ThOD <40%).

ECOTOXICOLOGY:
Based largely or completely on information for Spinosad.
Material is highly toxic to aquatic organisms on an acute basis (LC_{50} or EC_{50} between 0.1 and 1 mg/L in most sensitive species).
Material is practically non-toxic to birds on an acute basis (LD_{50} >2000 mg/kg).
Material is practically non-toxic to birds on a dietary basis (LC_{50} >5000 ppm).
Based largely or completely on information for propylene glycol.
Material is practically non-toxic to aquatic organisms on an acute basis (LC_{50} or EC_{50} >100 mg/L in most sensitive species).

13. 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.

14. TRANSPORT INFORMATION:

ROAD, RAIL, MARINE AND AIR TRANSPORT: Not classified as dangerous goods for the transport by road and rail in Australia.

Classification for marine and air transport:

UN No: 3082
Class: 9
Packing group: III
SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (SPINOSAD)

15. REGULATORY INFORMATION:

APVMA APPROVAL NUMBER: 59303
POISON SCHEDULE: None

16. OTHER INFORMATION:

Glossary
Glossary
ACGIH: American Conference of Governmental Industrial Hygienists.
BCF: Bioconcentration Factor - a measure for the characterization of the accumulation of a chemical in an organism. It is defined as the concentration of a chemical in an organism (plants, microorganisms, animals) divided by the concentration in a reference compartment (e.g. food, surrounding water).
BOD: Biochemical oxygen demand. The amount of oxygen required by aerobic microorganisms to decompose the organic matter in a sample of water, such as that polluted by sewage. It is used as a measure of the degree of water pollution. Also called biological oxygen demand.
Dow AgroSciences Industrial Hygiene Guideline: An internal company standard based on an 8 hour TWA.
EC_{50}: median effective concentration. Statistically derived concentration of a substance in an environmental medium expected to produce a certain effect in 50% of test organisms in a given population under a defined set of conditions.
EEL: Environmental exposure standard set by ERMA
Explosive Limits: The range of concentrations (% by volume in air) of a flammable gas or vapour that can result in an explosion for ignition in a confined space.
K_{oc}: the organic carbon partition coefficient (mL soil water /g organic carbon)**.**
K_{ow}: See P_{ow}
LC_{50}: Lethal Concentration 50%. A concentration of chemical in air or water that will kill 50% of the test organisms.
LD_{50}: Lethal Dose-50%. The doses of a chemical that will kill 50% of the test animals receiving it.
NIOSH: American national Institute of Occupational Safety and Health, a federal agency which conducts research on occupational safety and health questions and recommends new standards.
NOHSC: National Occupational Health and Safety Commission of Australia now the Office of the Australian Safety and Compensation Council.
OSHA: American Occupational Safety and Health Administration.
PEL: Permissible Exposure Level, a maximum allowable exposure level by law.
pH: Measure of how acidic or alkaline a material is using a 1 - 14 scale. pH 1 is strongly acidic and pH 14 strongly alkaline.
Polymerisation: a chemical reaction in which small molecules (monomers) combine to form much larger molecules (polymers). A hazardous polymerisation reaction is one that occurs at a fast rate and releases large amounts of energy.

P_{ow}: The octanol-water partition coefficient is the ratio of the concentration of a chemical in octanol and in water at equilibrium and at a specified temperature. Octanol is an organic solvent that is used as a surrogate for natural organic matter. This parameter is used in many environmental studies to help determine the fate of chemicals in the environment.
STEL: Short-Term Exposure Limit. A term used to indicate the maximum average concentration allowed for a continuous 15 minute exposure period.
TVL: Threshold Limit Value, an exposure limit set by a competent authority
TWA: Time Weighted Average. The average concentration of a chemical in air over the total exposure time - usually an 8-hour workday.

References

AS/NZS 1715-1994 Selection Use and Maintenance of Respiratory Protective Devices.
ASNZS 1716 - 1994 Respiratory protective devices.
Australian Dangerous Goods Code
International Maritime Dangerous Goods Code.
International Air Transport Association (IATA) Dangerous Goods Regulation

FOR FURTHER PRODUCT INFORMATION CALL DOW AGROSCIENCES CUSTOMER SERVICE REPRESENTATIVES TOLL FREE 1800 700 096 DURING BUSINESS HOURS.

This MSDS has been compiled using publicly available information, information provided by suppliers of ingredients used in the product and internal studies on the product and/or its ingredients.

THIS MSDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE BASED ON PUBLICLY AVAILABLE AND INTERNALLY AVAILABLE INFORMATION. EACH USER SHOULD READ THIS MSDS AND CONSIDER THE INFORMATION IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE INCLUDING IN CONJUNCTION WITH OTHER PRODUCTS. IF CLARIFICATION OR FUTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY. THE RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

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