

Product Name: Sparta™ Insecticide**Issue Date:** 24.04.2014

Dow AgroSciences (NZ) Ltd 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:** Sparta™ Insecticide

Purpose: Insecticide

COMPANY IDENTIFICATION

Dow AgroSciences (NZ) Ltd

89 Paritutu Road

4342 New Plymouth

New Zealand

Customer Information Number:

0800-803-939

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

+64 6 751 2407

Local Emergency Contact:

0800 844 455

For medical advice, contact the New Zealand Poisons Information Centre:

0800 POISON (0800 764 766)

In case of Transport Emergency Only Dial: 111

This SDS may not provide exhaustive guidance for all the HSNO controls assigned to this substance. The NZ EPA website www.epa.govt.nz should be consulted for a full list of triggered controls and cited regulations.

2. Hazards Identification**Classification of the substance or mixture** NEW ZEALAND HAZARDOUS SUBSTANCES

CLASSIFICATION: Classified as hazardous according to criteria in the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001. Refer to Section 15 for HSNO Approval Number.

HSNO Hazard Classification: 6.9B, 9.1A, 9.4A**Hazard**

May cause damage to organs through prolonged or repeated exposure.

Very toxic to aquatic life and terrestrial vertebrates.

Very toxic to terrestrial invertebrates

Prevention

Do not breathe spray mist.

Wash thoroughly after handling

Do not eat, drink or smoke, when using this product

Collect spillage

Response

If exposed or you feel unwell: Call a POISON CENTRE or doctor/physician
Collect spillage

3. Composition Information

Component	CAS #	Amount
Spinetoram J & L (CAS# 187166-40-1 & 187166-15-0)	935545-74-7	11.7 %
Propylene glycol	57-55-6	6.0 %
Balance	Not available	82.3 %

4. First Aid Procedures

Consult the National Poisons Information Centre (0800 POISON (0800 764 766) 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.

Description of first aid measures

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

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

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. Suitable emergency safety shower facility should be available in work area.

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. Suitable emergency eye wash facility should be available in work area.

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), any additional important symptoms and effects are described in Section 11: Toxicology Information.

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

HAZCHEM: 2X

Suitable extinguishing media

To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture

Hazardous Combustion Products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn. If exposed to fire from another source and water is evaporated, exposure to high temperatures may cause toxic fumes.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. 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.

See Section 9 for related Physical Properties

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.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. 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

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

Conditions for safe storage: Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

This substance is subject to a requirement for an emergency management plan, secondary containment and signage, whenever it is held in quantities of 100 L or more, either alone or in aggregate with other hazardous substances. See Hazardous substances (Emergency Management) Regulations.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Propylene glycol	NZ OEL	TWA Vapor and particulates.	474 mg/m ³ 150 ppm
	NZ OEL	TWA Particulate.	10 mg/m ³
	WEEL	TWA Aerosol.	10 mg/m ³

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: Wear clean, body-covering clothing.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under standard AS/NZS 2161.10: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to AS/NZS 2161.10) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

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. 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. 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. Local exhaust ventilation may be necessary for some operations.

Other Information

Selection and use of personal protective equipment should be in accordance with the recommendations in one or more of the relevant Australian/New Zealand Standards, including:
 AS/NZS 1336: Eye and face protection – Guidelines.
 AS/NZS 1337: Personal eye protection – Eye and face protectors for occupational applications.
 AS/NZS 1715: Selection, use and maintenance of respiratory protective devices.
 AS/NZS 2161: Occupational protective gloves.
 AS/NZS 2210: Occupational protective footwear.
 AS/NZ 4501: Occupational protective clothing

9. Physical and Chemical Properties

Appearance	
Physical State	Liquid.
Color	Off-white
Odor	Musty
Odor Threshold	No test data available
pH	7.15 (@ 1 %) <i>pH Electrode</i> (1% aqueous suspension)
Melting Point	Not applicable
Freezing Point	No test data available
Boiling Point (760 mmHg)	No test data available.
Flash Point - Closed Cup	> 200 °C <i>Closed Cup</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Not applicable to liquids
Vapor Pressure	Not applicable
Vapor Density (air = 1)	No test data available
Specific Gravity (H₂O = 1)	1.025 <i>Digital Density Meter (Oscillating Coil)</i>
Solubility in water (by weight)	Dispersible
Partition coefficient, n-octanol/water (log Pow)	No data available for this product. See Section 12 for individual component data.
Auto-ignition temperature	> 400 °C <i>92/69/EEC A15 Ramped Temperature</i>
Decomposition temperature	No test data available
Dynamic Viscosity	No test data available
Kinematic Viscosity	No test data available
Explosive properties	No
Oxidizing properties	No, No significant increase (>5C) in temperature.
Liquid Density	1.025 g/cm ³ @ 20 °C <i>Digital density meter</i>
Molecular Weight	No test data available

10. Stability and Reactivity

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Thermally stable at typical use temperatures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to Avoid: Active ingredient decomposes at elevated temperatures.

Incompatible Materials: None known.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition.

11. Toxicological Information

Acute Toxicity

Acute oral toxicity

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

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

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

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

Acute inhalation toxicity

No adverse effects are anticipated from single exposure to mist. Based on the available data, respiratory irritation was not observed.

As product: LC50, 4 h, Aerosol, rat > 5.04 mg/l

Skin corrosion/irritation

Brief contact is essentially non-irritating to skin.

Eye damage/eye irritation

May cause slight eye irritation. Corneal injury is unlikely.

Sensitization

Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization: No relevant data found.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

For the active ingredient: In animals, 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.

For the minor component(s): In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects. In animals, effects have been reported on the following organs after exposure to aerosols: Lung.

Carcinogenicity

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

Developmental Toxicity

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

Reproductive Toxicity

For the active ingredient: In animal studies, did not interfere with reproduction.

Genetic Toxicology

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration hazard

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

12. Ecological Information**Toxicity**

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

Material is practically non-toxic to birds on an acute basis (LD50 > 2,000 mg/kg).

Fish Acute & Prolonged Toxicity

LC50, *Lepomis macrochirus* (Bluegill sunfish), semi-static test, 96 h: > 48.2 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, *Daphnia magna* (Water flea), semi-static test, 48 h, immobilization: > 42.8 mg/l

Aquatic Plant Toxicity

EC50, diatom *Navicula* sp., Growth inhibition (cell density reduction), 72 h: 1.098 mg/l

Toxicity to Above Ground Organisms

oral LD50, *Colinus virginianus* (Bobwhite quail): > 2,250 mg/kg bodyweight.

oral LD50, *Apis mellifera* (bees): 0.32 micrograms/bee

contact LD50, *Apis mellifera* (bees): 0.17 micrograms/bee

Toxicity to Soil Dwelling Organisms

LC50, *Eisenia fetida* (earthworms), 14 d: > 8,560 mg/kg

Persistence and Degradability**Spinetoram J & L (CAS# 187166-40-1 & 187166-15-0)**

Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. Surface photodegradation is expected with exposure to sunlight.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
0.1 - 9.1 %	28 d	OECD 301B Test	fail

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
1.24E-01 cm ³ /s	0.12 - 0.5 d	Measured

Propylene glycol

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
81 %	28 d	OECD 301F Test	pass
96 %	64 d	OECD 306 Test	Not applicable

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
1.28E-11 cm ³ /s	10 h	Estimated.

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
69.0 %	70.0 %	86.0 %	

Chemical Oxygen Demand: 1.53 mg/mg

Theoretical Oxygen Demand: 1.68 mg/mg

Bioaccumulative potential**Spinetoram J & L (CAS# 187166-40-1 & 187166-15-0)**

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3,000 or Log Pow between 3 and 5).

Partition coefficient, n-octanol/water (log Pow): 4.49

Bioconcentration Factor (BCF): 348. *Oncorhynchus mykiss* (rainbow trout)

Propylene glycol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): -1.07 Measured

Bioconcentration Factor (BCF): 0.09; Estimated.

Mobility in soil**Spinetoram J & L (CAS# 187166-40-1 & 187166-15-0)**

Mobility in soil: Potential for mobility in soil is low (Koc between 500 and 2,000).

Henry's Law Constant (H): 3.5E-03 Pa*m³/mole.

Propylene glycol

Mobility in soil: Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process., Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient, soil organic carbon/water (Koc): < 1 Estimated.

Henry's Law Constant (H): 1.2E-08 atm*m³/mole. Measured

Results of PBT and vPvB assessment**Spinetoram J & L (CAS# 187166-40-1 & 187166-15-0)**

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT) or very persistent nor very bioaccumulating (vPvB).

Propylene glycol

This substance is not considered to be persistent, bioaccumulating and toxic (PBT) or very persistent and very bioaccumulating (vPvB).

13. Disposal Considerations

Disposal methods

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.

Waste handling, treatment and disposal practices must be in compliance with the New Zealand Hazardous Substances (Disposal) Regulations 2001. Additional local requirements may be applicable in accordance with planning controls under the Resource Management Act. Regulations concerning waste management may vary in different locations.

This product when disposed of in its unused and uncontaminated state should be treated as a hazardous waste.

14. Transport Information

PUBLIC PASSENGER VEHICLE TRANSPORT: No restrictions, but only to be transported in the sealed original container.

Classification for ROAD and Rail transport:

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Spinetoram)
UN number	UN 3082
Class	9
Packing group	III
Environmental hazards	Spinetoram

Classification for SEA transport (IMO-IMDG):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Spinetoram)
UN number	UN 3082
Class	9
Packing group	III
Marine pollutant	Spinetoram
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S (Spinetoram)
UN number	UN 3082
Class	9
Packing group	III

HAZCHEM: 2X

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.

Compliance with the above land, rail, marine and air requirements is deemed to comply with the applicable requirements of the Hazardous substances Identification and Emergency Management Regulations.

15. Regulatory Information

ACVMG APPROVAL NUMBER: P8266
ERMA New Zealand Approval Code: HSR100387

ADVICE TO PRODUCT USERS REGARDING HSNO CONTROLS: Users of this product should make reference to the New Zealand Hazardous Substances and New Organisms Act and Regulations for relevant risk management controls. Additional local requirements may be applicable in accordance with planning controls under the Resource Management Act. Refer to Environment Protection Authority publication; User Guide to the HSNO Controls Regulations. <http://www.epa.govt.nz>

16. Other Information

Revision

Identification Number: 101197107 / A157 / Issue Date 24.04.2014 / Version: Replaces May 2011
 DAS Code: GF-1587
Sections amended: 12

Legend

W/W	Weight/Weight
OEL	Occupational Exposure Limit
TWA	Time Weighted Average
WEEL	Workplace Environmental Exposure Level

Dow AgroSciences (NZ) Ltd 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.

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