

SAFETY DATA SHEET



Dow AgroSciences

Emergency Phone: 0800 243 622
+ 64 3 353 0199
Dow AgroSciences (NZ) Ltd.
89 Paritutu Road, New Plymouth

PRODUCT: DELEGATE™

Effective Date: 10 September 2008
Product Code: 110971

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Delegate™

PURPOSE: Insecticide for use on fruit trees

COMPANY IDENTIFICATION:

Dow AgroSciences (NZ) Ltd.
Registration No. 169964
89 Paritutu Road, New Plymouth

Customer Service Toll Free Number:

0800 803 939
(Mon-Fri, 8am–4.30 pm)
www.dowagrosciences.co.nz

Emergency Telephone Numbers:

NZ: 0800 CHEMCALL (0800 243 622)
Australia: 1-800 127 406
Global: + 64 3 353 0199
(24 hours) (EMERGENCIES ONLY)
Transport Emergency Only Dial 111

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

2. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW

Classified as Hazardous.
Classified as Dangerous Goods for transport.

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

Hazards

May cause damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life and terrestrial vertebrates.

Prevention

Read this SDS and the label before use.
Do not breathe spray mist.
Avoid release to environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS:

Component	CAS Number	W/W%
Spinetoram J	187166-40-1	25.0
Spinetoram L	187166-15-0	
Porcelain clay	1332-58-7	>40.0 - <50.0
Titanium dioxide	13463-67-7	<5.0
Silica, crystalline (quartz)	14808-60-7	<1.0
Balance not individually contributing to hazard		<19.0 – <29.0

4. FIRST AID:

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.

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 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 an emergency responder or ambulance, and 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.

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

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5. FIRE FIGHTING MEASURES:

FLASH POINT: Solid material - Not applicable
METHOD USED: Not applicable
COMBUSTIBILITY: Not combustible

FLAMMABLE LIMITS

LFL: Not determined
UFL: Not determined

EXTINGUISHING MEDIA: Foam, CO₂, or Dry chemical
FIRE AND EXPLOSION HAZARDS: Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Toxic irritating gases may be formed under fire conditions.

FIRE-FIGHTING EQUIPMENT: Use positive-pressure, self-contained breathing apparatus and full protective equipment.

HAZCHEM: 3X

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS/LEAKS: Do not touch or walk through spilled material. Wear gloves, overall and boots. Stop further spill occurring and prevent entry into waterways and drains. **Small spills:** In case of spill on hard surfaces sweep up, and on soft surfaces scoop up, then place in drums for disposal at a licensed local authority landfill. Spill residues may be cleaned up using water and detergent. Contain and absorb wash water. Absorb and collect washings and place in the same sealable container for disposal. Seek advice from the SDS, product label or Dow AgroSciences regarding disposal. **Large spills** Report large spills to Dow AgroSciences Emergency Services at 0800 CHEMCALL (0800 243 622).

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

HANDLING: Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing dust or mist. Use with adequate ventilation. Wash thoroughly with soap and water after handling. Store in a dry place. Store in original container. Do not store near food, foodstuffs, drugs or potable water supplies.

STORAGE: Store in tightly closed original container in a cool, dry well-ventilated area out of direct sunlight when not in use. This product can be stored in an unheated building. Do not store with food, feedstuffs, fertilizers and seeds. See product label for further handling/storage precautions relative to the end use of this product.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

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

EXPOSURE GUIDELINES:

COMPONENT	LIST	TYPE	VALUE
Porcelain clay	OSHS (NZ)	TWA Inspirable dust	10 mg/m ³
		TWA respirable dust	2 mg/m ³
	ACGIH	TWA Respirable fraction	
	OSHA	PEL Respirable fraction	5 mg/m ³
Titanium dioxide	OSHS (NZ)	TWA Inspirable dust	10 mg/m ³
	OSHA	PEL Total dust	15 mg/m ³
	ACGIH	TWA	10 mg/m ³
	OSHA	PEL Total dust	15 mg/m ³

ENGINEERING CONTROLS: Good general ventilation should be sufficient for most conditions.

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RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use safety glasses. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

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: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: particulate filter.

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

9. PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE: Grey granule

ODOR: None

DENSITY: 1.1485 g/mL @ 20 °C

BULK DENSITY: 0.5 g/mL @ 21.8 °C

VAPOUR PRESSURE: $2.1\text{-}5.3 \times 10^{-5}$ Pa for factors J & L

WATER SOLUBILITY: At pH 7 ~ 11 mg/L (XDE-175-J), ~ 48 mg/L (XDE-175-L)

10. STABILITY AND REACTIVITY:

STABILITY: (CONDITIONS TO AVOID) Stable under normal storage conditions.

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 know 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. ERMA did not classify this material as an eye irritant.

SKIN: Brief contact is essentially non-irritating to skin. Prolonged skin contact is unlikely to result in absorption of harmful amounts. Did not cause allergic skin reactions when tested in mice. The dermal LD₅₀ for rats (male and female) is >5,000 mg/kg. ERMA did not classify this material as a skin irritant.

INGESTION: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. The oral LD₅₀ for female rats is >5,000 mg/kg.

INHALATION: No adverse effects are anticipated from inhalation. The dust inhalation LC₅₀ for rats (male and female) is >5.28 mg/L.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: The active ingredient, in animals, has been shown to cause vacuolation 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 major component(s), contains component(s) which have been reported to cause effects on the following organs in animals: respiratory tract, skin, liver, and kidney. ERMA has classified this material as 6.9B.

CANCER INFORMATION: Spinetoram did not cause cancer in laboratory animals. Lung fibrosis and tumors have been observed in rats exposed to titanium dioxide in two lifetime inhalation studies. Effects are believed to be due to overloading of the normal respiratory clearance mechanisms caused by the extreme study conditions. Workers exposed to titanium dioxide in the workplace have not shown an unusual incidence of chronic respiratory disease or lung cancer. Titanium dioxide was not carcinogenic in laboratory animals in lifetime feeding studies.

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TERATOLOGY (BIRTH DEFECTS): Spinetoram did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

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

MUTAGENICITY: For spinetoram, in-vitro and animal genetic toxicity studies were negative. For the major component(s), has been shown to have mutagenic activity in bacteria. Animal genetic toxicity studies were negative in some cases and positive in other cases.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE:

MOVEMENT & PARTITIONING:

Based largely or completely on information for spinetoram J & L.

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

Based largely or completely on information for porcelain clay, and titanium dioxide.

Partitioning from water to n-octanol is not applicable.

DEGRADATION & PERSISTENCE:

Based on the stringent test guidelines for XDE175-J & -L this substance cannot be considered readily biodegradable, however, these results do not necessarily mean that the material is not biodegradable under environmental conditions. The photolysis half-life in water is ≤ 0.5 days.

The soil half-life for factors J & L is 1-5 days. No hydrolysis is expected to occur. Biotic degradation under laboratory conditions in soil is expected to be short (half-life 3-29 days). However, in laboratory aquatic systems degradation is expected to be slow. Aerobic half-life 117 – 124 days. Biotic degradation under field conditions is expected to be rapid for aquatic systems (Half-life < 1 day) and for soil systems 1-5 days. ERMA has classified this material as persistent based on the laboratory aquatic data.

ECOTOXICOLOGY:

Based largely or completely on data for the active ingredient.

This material is expected to be highly toxic to aquatic organisms on an acute basis (LC_{50} or EC_{50} is between 0.1

and 1 mg/L in the most sensitive species). ERMA has classified this substance as highly toxic (9.1A).

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

Material is highly toxic to bees on contact, but the foliage residue (aged 3 hours or more) is not toxic.

Material is non-toxic to earthworms

Material is toxic to parasitic wasp and predatory mites, but not to ladybirds or rove beetles.

ERMA has classified it as 9.4A - highly toxic to terrestrial invertebrates.

This material is not expected to damage plants.

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:

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

DANGEROUS GOODS CLASSIFICATION

UN No: 3077

Class: 9

Packing group: III

SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S (SPINETORAM) Marine pollutant

IMDG:

EMS Number: F-A, S-F

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ICAO/IATA:

Cargo Packing Instruction: 911

Passenger Packing Instruction: 911

Compliance with the above requirements is deemed to comply with the applicable requirements of the Hazardous substances Identification and Emergency Management Regulations.

15. REGULATORY INFORMATION:

ACVMG APPROVAL NUMBER: P7635

ERMA New Zealand Approval Code: HSR007822

16. OTHER INFORMATION:

Glossary

ACGIH: American Conference of Governmental Industrial Hygienists.

BCF: Bioconcentration Factor - a measure of 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).

BEI®: ACGIH® has recommended a Biological Exposure Index or Indices (BEIs®) for this substance:

Dow AgroSciences Industrial Hygiene Guideline: An internal company standard based on an 8 hour TWA.

EC₅₀: 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.

ERMA: The Environmental Risk Management Authority of New Zealand.

K_{oc}: the organic carbon partition coefficient (mL soil water /g organic carbon).

K_{ow}: See P_{ow}

LC₅₀: Lethal Concentration 50%. A concentration of chemical in air or water that will kill 50% of the test organisms.

LD₅₀: 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.

OSH: Occupational Safety and Health Service of The Department of Labour New Zealand.

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.

Skin: A 'skin' notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

STEL: Short-Term Exposure Limit. A term used to indicate the maximum average concentration allowed for a continuous 15 minute exposure period.

TEL: Tolerable Exposure Limit set by ERMA

TLV: 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.

WES: Work place exposure standard set by ERMA or OSH.

References

AS/NZS 1715-1994 Selection Use and Maintenance of Respiratory Protective Devices.
ASNZS 1716 - 1994 Respiratory protective devices.

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A guide to Respiratory Protection (published by the Occupational Safety and Health Service with support of NZ Safety Ltd 1999
Guidelines for Personal Protection for Agrichemical Users NZ Safety Limited.
Environmental Risk Management Authority Decision for ERMA Approval Code (Refer to Section 15).
Land Transport Rule 45001/1: Dangerous Goods 1999.
International Maritime Dangerous Goods Code (IMDG)
Maritime Rule 24A Carriage of Cargoes-Dangerous Goods
International Air Transport Association (IATA) Dangerous Goods Regulation

VERSION TRACKING

Replaces version dated: 18 April 2008
Sections amended: 3,5,7,8,9,12,13,14
Product number: GF-1640

FOR FURTHER PRODUCT INFORMATION CALL DOW AGROSCIENCES CUSTOMER SERVICE REPRESENTATIVES TOLL FREE 0800 803 939 DURING BUSINESS HOURS.

Dow AgroSciences (NZ) Ltd. urges each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this 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 SDSs, we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.

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