

Product name: Twinguard® Isoclast active Insecticide**Issue Date:** 23.06.2025

Corteva Agriscience New Zealand Limited encourages and expects you to read and understand the entire SDS, as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container. This safety sheet adheres to the standards and regulatory requirements of New Zealand and may not meet the regulatory requirements in other countries.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Twinguard® Isoclast active Insecticide**Purpose:** End use Insecticide product**COMPANY IDENTIFICATION**

CORTEVA AGRISCIENCE NEW ZEALAND LIMITED
LOCKED BAG 2017
NEW PLYMOUTH 4342
NEW ZEALAND

Customer Information Number:

0800-803-939

NZCustomerservice@corteva.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)

Transport Emergency Only Dial: 111

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

2. HAZARDS IDENTIFICATION

Hazard classification

NEW ZEALAND HAZARDOUS SUBSTANCES CLASSIFICATION: Classified as hazardous according to criteria in the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Notice 2017, and the Hazardous Substances (Classification) Notice 2017. Refer to Section 15 for Approval Number.

GHS Hazard Classification:

Skin sensitisation - Category 1

Respiratory sensitisation – Category 1

Specific target organ toxicity (liver) – repeated exposure – Category 1

Hazardous to the aquatic environment (acute) - Category 1

Hazardous to the aquatic environment (chronic) - Category 1

Hazardous to soil organisms
Hazardous to terrestrial invertebrates



Signal word: **DANGER!**

Hazard statements:

May cause an allergic skin reaction.
May cause allergy or asthma symptoms or breathing difficulties if inhaled
Causes damage to organs (liver) through prolonged or repeated exposure
Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

Read label before use.
Do not breathe dust/vapours/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
In case of inadequate ventilation wear respiratory protection.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.

Response

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. IF experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician.
IF ON SKIN: wash with plenty of water. IF SKIN irritation or rash occurs: Get medical advice/attention. Specific treatment (see First Aid section).
Wash contaminated clothing before re-use.
Get medical advice/attention if you feel unwell.
Collect spillage.

Storage

Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This substance is a mixture.

Component	CASRN	Concentration
Sulfoxaflor	946578-00-3	20.0 %
Spinetoram J & L (CAS# 187166-40-1 & 187166-15-0)	935545-74-7	20.0 %
Sodium N-methyl-N-oleoyltaurine	137-20-2	1.0 – 3.0 %

4. FIRST AID MEASURES

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: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). 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. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before re-use. Shoes and other leather items which cannot be decontaminated should be disposed of properly.

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 any immediate medical attention and special treatment needed

Notes to physician: 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. FIREFIGHTING MEASURES

Hazchem Code: 2Z

Suitable extinguishing media: Water spray. Alcohol resistant foam. Dry chemical fire. Carbon dioxide.

Unsuitable extinguishing media: High volume water jet

Special hazards arising from the substance or mixture

Hazardous combustion products: Exposure to combustion products may be a hazard to health. 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: Sulfur oxides. Nitrogen oxides. Hydrogen fluoride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Applying foam will release significant amounts of hydrogen gas that can be trapped under the foam blanket. Most fire extinguishing media will cause hydrogen evolution,

and once the fire is put out, may accumulate in poorly ventilated or confined areas and result in flash fire or explosion if ignited.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Remove undamaged containers from fire area if it is safe to do so. Use water spray to cool unopened containers. Do not allow extinguishing medium to contact container contents. Hand-held dry chemical or carbon dioxide extinguishers may be used for small fires. 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 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. Avoid dust formation. Avoid breathing dust. 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. Local authorities should be advised if significant spillages cannot be contained. Spills or discharge to natural waterways is likely to kill aquatic organisms. Retain and dispose of contaminated wash water

Methods and materials for containment and cleaning up: Prevent further leakage or spillage if safe to do so. Contain spilled material if possible. Pick up and arrange disposal without creating dust. Sweep up or vacuum up spillage and collect in suitable container for disposal. Recovered material should be stored in a vented container. The vent must prevent the ingress of water as further reaction with spilled materials can take place which could lead to over-pressurisation of the container. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep out of reach of children. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. Do not swallow. Do not breathe vapours/dust. Avoid contact with skin and eyes. Do not get on skin or clothing. Smoking, eating and drinking should be prohibited in the application area. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Good housekeeping and controlling of dusts are necessary for safe handling of product. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store in closed original properly labelled container. Store in a dry place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. 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 kg or more, either alone or in

aggregate with other hazardous substances. See Hazardous substances Emergency Management and Identification Regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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.

Control parameters

Exposure limits are listed below, if they exist. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value/Notation
Sulfoxaflor	ACGIH	TWA Inhalable particulate matter	0.1 mg/m ³
Kaolin	ACGIH	TWA Respirable particulate matter	2 mg/m ³
	NZ OEL	WES-TWA Respirable dust	2 mg/m ³
	NZ OEL	WES-TWA	10 mg/m ³

Exposure controls

Engineering controls: 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.

Individual protection measures

Eye/face protection: Use chemical goggles.

Skin protection

Hand protection: 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: Polyvinyl chloride ("PVC" or "vinyl"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). When prolonged or frequently repeated contact may occur, a glove is recommended to prevent contact with the solid material. 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.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

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, in dusty atmospheres, use an approved particulate respirator.

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 equipment.

AS/NZS 2161: Occupational protective gloves.

AS/NZS 2210: Occupational protective footwear.

AS/NZS 4501: Occupational protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Solid.
Colour	White
Odour	Musty
Odour Threshold	No data available
pH	8.88 <i>pH Electrode</i>
Melting point/range	Not data available
Freezing point	Not applicable
Boiling point (760 mmHg)	Not applicable
Flash point - closed cup	Not applicable
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not available
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapour Pressure	Not applicable
Relative Vapour Density (air = 1)	Not applicable
Relative Density (water = 1)	No test data available
Water solubility	No test data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	Not applicable
Decomposition temperature	No test data available
Dynamic Viscosity	Not applicable
Kinematic Viscosity	No data available
Explosive properties	No
Oxidizing properties	No significant increase (> 5 ^o c) in temperature
Bulk Density	0.48 g/cm ³ <i>Loose Volumetric</i>
Molecular weight	No data available.

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: No decomposition if stored and applied as directed. Stable under normal conditions.

Possibility of hazardous reactions: Stable under recommended storage conditions. No hazards to be specially mentioned.

Conditions to avoid: None known.

Incompatible materials: Avoid contact with: Strong oxidizers.

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: Ammonia. Hydrogen fluoride. Nitrogen oxides. Sulfur oxides. Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product

Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
LD50, Rat, female, > 5,000 mg/kg. OECD Test Guideline 402

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.
LD50, Rat, male and female, > 5,000 mg/kg. OECD Test Guideline 402

Acute inhalation toxicity

No adverse effects are anticipated from single exposure to dust. Based on the available data, respiratory irritation was not observed.
LC50, Rat, male and female, 4 Hour, dust/mist, > 5.16 mg/L. OECD Test Guideline 403

Sulfoxaflor

Acute oral toxicity

Observations in animals include Muscle spasms or twitches. Tremors. Convulsions.
LD50, Rat, female, 1,000 mg/kg

Acute dermal toxicity

No deaths occurred at this concentration. The substance or mixture has no acute dermal toxicity.
LD50, Rat > 5,000 mg/kg

Acute inhalation toxicity

The substance or mixture has no acute inhalation toxicity. The LC50 value is greater than the Maximum Attainable Concentration. No deaths occurred at this concentration.
LC50, Rat: dust/mist > 2.09 mg/l

Spinetoram J & L

Acute oral toxicity

LD50, Rat, female, > 5,000 mg/kg

Acute dermal toxicity

LD50, Rat, male & female > 5,000 mg/kg

Acute inhalation toxicity

LC50, Rat, male & female, dust/mist, 4h > 5.50 mg/L

Sodium N-methyl-N-oleoyltaurine

Acute oral toxicity

LD50, Rat, > 2,000 mg/kg

Acute dermal toxicity

LD50, Rat, > 2,000 mg/kg

Skin corrosion/irritation

Product: Rabbit. No skin irritation. OECD Test Guideline 404

Sulfoxaflor: Rabbit. No skin irritation.

Spinetoram J & L: Rabbit. No skin irritation. OECD Test Guideline 404

Serious eye damage/eye irritation

Product: Rabbit. No eye irritation. OECD Test Guideline 405

Sulfoxaflor: Rabbit. No eye irritation.

Spinetoram J & L: Rabbit. No eye irritation. OECD Test Guideline 405

Sodium N-methyl-N-oleoyltaurine: Rabbit. Eye irritation.

Skin sensitisation

Product: Mouse. Local lymph node assay (LLNA). The product is a skin sensitiser, sub-category 1B. OECD Test Guideline 429

Sulfoxaflor: Mouse. Does not cause skin sensitisation.

Spinetoram J & L: Mouse. The product is a skin sensitiser, sub-category 1B.

Sodium N-methyl-N-oleoyltaurine: Guinea pig. Does not cause skin sensitisation.

Specific Target Organ Systemic Toxicity (Single Exposure)

Product: Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Sulfoxaflor: Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Spinetoram J & L: Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Sodium N-methyl-N-oleoyltaurine: Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Product: Evaluation of available data suggests that this material is not an STOT-RE toxicant.

Repeated dose toxicity

Sulfoxaflor: In animals, effects have been reported on the following organs: Liver.

Spinetoram J & L: 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.

Sodium N-methyl-N-oleoyltaurine: Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Carcinogenicity

Product: Animal testing did not show any carcinogenic effects.

Sulfoxaflor: Has caused cancer in laboratory animals. However, the effects are species specific and are not relevant to humans.

Spinetoram J & L: Did not cause cancer in laboratory animals.

Reproductive toxicity

Sulfoxaflor: In animal studies, has been shown to interfere with reproduction. However, the effects are species specific and are not relevant to humans. These concentrations exceed relevant human dose levels. Has caused birth defects in laboratory animals at high doses. In laboratory animals, excessive doses toxic to the parent animals caused decreased weight and survival of offspring. However, the effects are species specific and are not relevant to humans.

Spinetoram J & L: Suspected human reproductive toxicant. Did not cause birth defects or other effects in the foetus even at doses which caused toxic effects in the mother.

Sodium N-methyl-N-oleoyltaurine: Screening studies suggest that this material does not affect reproduction.

Germ cell mutagenicity

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

Spinetoram J & L: In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Sodium N-methyl-N-oleoyltaurine: In vitro genetic toxicity studies were negative.

Aspiration Hazard

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

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

Spinetoram J & L: Based on physical properties, not likely to be an aspiration hazard.

Sodium N-methyl-N-oleoyltaurine: Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity**Product****Acute toxicity to fish**

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 < 0.1 mg/L in the most sensitive species).

LC50, Rainbow trout (*Oncorhynchus mykiss*), flow-through test, 96 Hour, 25 mg/l

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), 48 Hour, 0.059 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

ErC50, *Pseudokirchneriella subcapitata* (green algae), 72 Hour, > 15 mg/l

Toxicity to Above Ground Organisms

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

Oral LD50, *Colinus virginianus* (Bobwhite quail), mortality, > 2,000 mg/kg bodyweight.

Contact LD50, *Apis mellifera* (bees), 48 Hour, 0.21 micrograms/bee

Oral LD50, *Apis mellifera* (bees), 48 Hour, 0.47 micrograms/bee

Toxicity to soil-dwelling organisms

LC50, *Eisenia fetida* (earthworms), 12.0 mg/kg

Sulfoxaflor**Acute toxicity to fish**

Very toxic to aquatic life

LC50, Rainbow trout (*Oncorhynchus mykiss*), static test, 96 Hour, > 387 mg/L. OECD Test Guideline 203 or equivalent.

LC50 (*Lepomis macrochirus* (Bluegill sunfish)), 96 Hour > 363 mg/L

EC50 (*Cyprinus carpio* (Carp)), 96 Hour, > 402 mg/L

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), 48 Hour, static test, > 399 mg/L, OECD Test Guideline 202 or equivalent.

LC50 (*Chironomus* sp. (midge)), 96 Hour, 0.622 mg/L

Acute toxicity to algae/aquatic plants

ErC50, *Pseudokirchneriella subcapitata* (green algae), static test, 96 Hour, > 100 mg/L. OECD Test Guideline 201 or equivalent.

ErC50 (*Lemna gibba*), 7 day > 100 mg/L

Chronic toxicity to fish

Very toxic to aquatic life with long lasting effects

NOEC (*Pimephales promelas* (fathead minnow)), mortality, 30 day, flow-through test > 12.9 mg/L

Chronic toxicity to aquatic invertebrates

NOEC, *Daphnia magna* (Water flea), 21 days, growth, semi-static test > 50.5 mg/L, OECD Test Guideline 202 or equivalent

NOEC (saltwater mysid *Mysidopsis bahia*), offspring, 28 day, flow through test, 0.114 mg/L. OECD Test Guideline 211 or equivalent.

Toxicity to Above Ground Organisms

Oral LD50, *Colinus virginianus* (Bobwhite quail), 676 mg/kg bodyweight.

Dietary LC50, *Colinus virginianus* (Bobwhite quail), 5,620 mg/kg bodyweight.

Oral LD50, *Apis mellifera* (bees), 48 Hour, 0.146 micrograms/bee

Contact LD50, *Apis mellifera* (bees), 48 Hour, 0.539 micrograms/bee

Toxicity to soil-dwelling organisms

LC50, *Eisenia fetida* (earthworms), 12.0 mg/kg

Spinetoram J & L**Acute toxicity to fish**

LC50 (*Lepomis macrochirus* (Bluegill sunfish)), flow-through test, 96 Hour > 2.69 mg/L. OECD Test Guideline 203 or equivalent.

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), 48 Hour, static test, > 0.229 mg/L, OECD Test Guideline 202 or equivalent.

LC50 (saltwater mysid *Mysidopsis bahia*), 96 Hour, flow-through test, 0.355 mg/L

LC50 (*Chironomus riparius* (harlequin fly)), 48 Hour, 0.0031 mg/L

Acute toxicity to algae/aquatic plants

ErC50, *Pseudokirchneriella subcapitata* (green algae), biomass, static test, 72 Hour, > 1.06 mg/L. OECD Test Guideline 201 or equivalent.

ErC50 (diatom *Navicula* sp.), biomass, 72 Hour, static test, 0.127 mg/L. OECD Test Guideline 201 or equivalent.

ErC50 (*Lemna gibba*), Growth rate inhibition, 7 day, semi-static test > 14.2 mg/L

M-Factor (acute aquatic toxicity): 100

Chronic toxicity to fish

NOEC (*Pimephales promelas* (fathead minnow)), weight, 32 day, flow-through test > 0.182 mg/L

LOEC (*Pimephales promelas* (fathead minnow)), weight, 32 day, flow-through test > 0.392 mg/L

MATC (Maximum Acceptable Toxicant Level) (*Pimephales promelas* (fathead minnow)), weight, 32 day, flow-through test, 0.267 mg/L

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), flow-through test, 0.000062 mg/L.

M-Factor (Chronic aquatic toxicity): 1,000

Toxicity to micro-organisms

EC50 (Bacteria), 3 Hour, > 10 mg/L

Toxicity to Above Ground Organisms

Oral LD50, Colinus virginianus (Bobwhite quail), 2,250 mg/kg bodyweight.

Dietary LC50, Colinus virginianus (Bobwhite quail), 5,620 mg/kg bodyweight.

Oral LD50, Apis mellifera (bees), 48 Hour, 0.11 micrograms/bee

Toxicity to soil-dwelling organisms

LC50, Eisenia fetida (earthworms), 14 day, > 500 mg/kg

Persistence and degradability**Sulfoxaflor**

Biodegradability: Material is not readily biodegradable according to OECD/EEC guidelines.

Biodegradation: 0 %

Exposure time: 28 d

Method: OECD Test Guideline 310

Theoretical Oxygen Demand: 1.90 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 7.762 Hour

Rate constant: 1.653E-11 cm³/s

Method: Estimated.

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

Biodegradability: Aerobic, activated sludge, 20 mg/L, not biodegradable

Biodegradation: 0.1 - 9.1 %

Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

10-day Window: Fail

Sodium N-methyl-N-oleoyltaurine

Biodegradability: Readily biodegradable. Passes OECD test(s) for ready biodegradability.

Biodegradation: 80 %

Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

10-day Window: Pass

Bioaccumulative potential**Sulfoxaflor**

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

Partition coefficient: n-octanol/water (log Pow): pH 7, 0.802 at 20 °C. Measured

Spinetoram J & L

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): pH 7, 4.49 at 20 °C

Bioconcentration factor (BCF): Oncorhynchus mykiss (rainbow trout), 28 d, 348

Sodium N-methyl-N-oleoyltaurine

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

Partition coefficient: n-octanol/water (log Pow): Pow: 1.36 at 20 °C

Mobility in Soil**Sulfoxaflor**

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 40 Measured

Spinetoram J & L

Potential for mobility in soil is slight (Koc between 2,000 and 5,000).

Sodium N-methyl-N-oleoyltaurine

No relevant data found.

Results of PBT and vPvB assessment**Sulfoxaflor**

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

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Spinetoram J & L

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

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Sodium N-methyl-N-oleoyltaurine

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

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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 2017. 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.

14. TRANSPORT INFORMATION

PUBLIC PASSENGER VEHICLE TRANSPORT: To be transported ONLY in the sealed original container.

Classification for ROAD and Rail transport:

International Regulations

UNRTDG

UN number	: UN 3077
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Sulfoxaflor, Spinetoram)
Class	: 9
Packing group	: III
Labels	: 9
Environmentally hazardous	: no

IATA-DGR

UN/ID No.	: UN 3077
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Sulfoxaflor, Spinetoram)
Class	: 9
Packing group	: III
Labels	: Miscellaneous
Packing instruction (cargo aircraft)	: 956
Packing instruction (passenger aircraft)	: 956

IMDG-Code

UN number	: UN 3077
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Sulfoxaflor, Spinetoram)
Class	: 9
Packing group	: III
Labels	: 9
EmS Code	: F-A, S-F
Marine pollutant	: Yes (Sulfoxaflor, Spinetoram)
Remarks	: Stowage category A

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations**NZS 5433**

UN number	: UN 3077
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Sulfoxaflor, Spinetoram)
Class	: 9
Packing group	: III
Labels	: 9
Marine pollutant	: no

Hazchem Code: ZZ**Matters needing attention for transportation**

Marine Pollutants assigned UN number 3077 and 3082 in single or combination packaging containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code, IATA Special provision A197, and ADR/RID special provision 375.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. REGULATORY INFORMATION

ACVMG Approval Number: P9554**Approval Number:** HSR101660**HSW Controls**

ADVICE TO PRODUCT USERS REGARDING GHS CONTROLS: Users of this product should make reference to the New Zealand Hazardous Substances and New Organisms Act and Regulations, and the Health and Safety at Work Act 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 for more information <http://www.epa.govt.nz>

16. OTHER INFORMATION

Revision

Identification Number: / A157 / Issue Date: 23.06.2025 / Version: 23.07.2024

DAS Code: GF-2860

Sections amended: 2, 15

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
NZ OEL	New Zealand. Workplace Exposure Standards for Atmospheric Contaminants
TWA	8-hour, time-weighted average
WES-TWA	Workplace Exposure Standard - Time Weighted average

Full text of other abbreviations

ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; ASTM - American Society for the Testing of Materials; ECx - Concentration associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; N.O.S. - Not otherwise specified; NOEC - Non-Observed Effective Concentration; OECD - Organization for Economic Co-operation and Development; NZIoC - New Zealand Inventory of Chemicals; OPPTS - Office of Chemical Safety and Pollution Prevention; (Q)SAR - (Quantitative) Structure Activity Relationship; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SDS - Safety Data Sheet; UN - United Nations.

CORTEVA AGRISCIENCE NEW ZEALAND LIMITED 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 SDS's, we are not and cannot be responsible for SDS's 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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