SAFETY DATA SHEET
according to the Hazardous Products Regulations

DELEGATE™ Insecticide

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	02/15/2025	800080000105	Date of first issue: 02/15/2025

Corteva Agriscience™ encourages you 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 Data Sheet adheres to the standards and regulatory requirements of Canada and may not meet the regulatory requirements in other countries.

SECTION 1. IDENTIFICATION

Product name : DELEGATE™ Insecticide
Other means of identification : No data available

Manufacturer or supplier's details
COMPANY IDENTIFICATION
Manufacturer/importer : CORTEVA AGRISCIENCE CANADA COMPANY
SUITE 240, 115 QUARRY PARK RD. SE
CALGARY AB, T2C 5G9
CANADA

Customer Information Number : 800-667-3852
E-mail address : solutions@corteva.com

Emergency telephone number : Corteva Canada Solutions: 1-800-667-3852

Recommended use of the chemical and restrictions on use
Recommended use : End use insecticide product

SECTION 2. HAZARDS IDENTIFICATION

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
Spinetoram J & L (CAS# 187166-40-1 & 187166-15-0)	Spinetoram J & L (CAS# 187166-40-1 & 187166-15-0)	935545-74-7	25
Kaolin	Kaolin	1332-58-7	>= 15 - < 40 *
Sodium N-methyl-N-oleoyltaurine	Sodium N-methyl-N-oleoyltaurine	137-20-2	>= 1 - < 5 *
Titanium dioxide	Titanium dioxide	13463-67-7	>= 1 - < 5 *
Sodium chloride	Sodium chloride	7647-14-5	>= 0.5 - < 1.5 *
Quartz	Quartz	14808-60-7	>= 0.1 - < 1 *
Balance	Balance	Not Assigned	> 20

* Actual concentration or concentration range is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

If inhaled : 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.

In case of 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.
In case of 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.
If swallowed	:	No emergency medical treatment necessary.
Most important symptoms and effects, both acute and delayed	:	None known.
Protection of first-aiders	:	If potential for exposure exists refer to Section 8 for specific personal protective equipment.
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.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	None known.
Specific hazards during firefighting	:	Exposure to combustion products may be a hazard to health. Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon oxides Nitrogen oxides (NOx)
Specific extinguishing methods	:	Remove undamaged containers from fire area if it is safe to do so. Evacuate area. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Avoid dust formation. Use personal protective equipment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities. Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained. Prevent from entering into soil, ditches, sewers, underwater. See Section 12, Ecological Information.
Methods and materials for containment and cleaning up	:	Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in. Pick up and arrange disposal without creating dust. 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 overpressurization of the container. Keep in suitable, closed containers for disposal. Sweep up or vacuum up spillage and collect in suitable container for disposal. See Section 13, Disposal Considerations, for additional information.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice. Smoking, eating and drinking should be prohibited in the application area. Do not swallow. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Take care to prevent spills, waste and minimize release to the environment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
Conditions for safe storage	:	Store in a closed container. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in properly labelled containers. Store in accordance with the particular national regulations.
Materials to avoid	:	Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Kaolin	1332-58-7	TWA (Respirable)	2 mg/m3	CA AB OEL
		TWA (Respirable)	2 mg/m3	CA BC OEL
		TWAEV (respirable dust)	2 mg/m3	CA QC OEL
		TWA (Respirable particulate matter)	2 mg/m3	ACGIH
Titanium dioxide	13463-67-7	TWA	10 mg/m3	CA AB OEL
		TWA (Total dust)	10 mg/m3	CA BC OEL
		TWA (respirable dust fraction)	3 mg/m3	CA BC OEL
		TWAEV (total dust)	10 mg/m3	CA QC OEL
Sodium chloride	7647-14-5	TWA	10 mg/m3	Corteva OEL
Quartz	14808-60-7	TWA (Respirable particulates)	0.025 mg/m3	CA AB OEL
		TWA (Respirable fraction)	0.1 mg/m3	CA ON OEL
		TWA (Respirable)	0.025 mg/m3 (Silica)	CA BC OEL
		TWAEV (respirable dust)	0.05 mg/m3	CA QC OEL
		TWA (Respirable particulate matter)	0.025 mg/m3 (Silica)	ACGIH

Engineering measures : Use engineering controls to maintain airborne level below exposure limit requirements or guidelines.
If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation.
Local exhaust ventilation may be necessary for some operations.

Personal protective equipment

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, use an approved respirator.
Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material.
For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

Hand protection

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

of preferred glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). 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.

Eye protection : Use safety glasses (with side shields).
If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

Skin and body protection : Wear clean, body-covering clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Granules.
Colour	:	White to off-white
Odour	:	Musty
Odour Threshold	:	No data available
pH	:	8.7 (22.6 °C) Method: Measured (1% aqueous suspension)
Melting point/ range	:	No data available
Freezing point		Not applicable
Boiling point/boiling range	:	Not applicable
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Density	:	Not applicable
Bulk density	:	0.5 g/cm3 (21.8 °C) Method: Tapped Volumetric
Solubility(ies)		
Water solubility	:	Disperses in water

Auto-ignition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Explosive properties	:	No
Oxidizing properties	:	No

SECTION 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	:	Exposure to elevated temperatures can cause product to decompose.
Incompatible materials	:	Strong acids Strong bases
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: Carbon oxides Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	LD50 (Rat, female): > 5,000 mg/kg Method: OECD Test Guideline 425 Symptoms: No deaths occurred at this concentration. Remarks: Information source: Internal study report
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 5.28 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg Method: OECD Test Guideline 402 Symptoms: No deaths occurred at this concentration. Remarks: Information source: Internal study report

Components:

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

Acute oral toxicity	:	LD50 (Rat, female): > 5,000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 5.50 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg

Kaolin:
Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Sodium N-methyl-N-oleoyltaurine:
Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

Titanium dioxide:
Acute oral toxicity : LD50 (Rat): > 10,000 mg/kg

Acute inhalation toxicity : LC50 (Rat, male): > 6.82 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): 10,000 mg/kg

Sodium chloride:
Acute oral toxicity : LD50 (Rat): > 3,550 mg/kg
Remarks: Excessive exposure may cause:
Nausea and/or vomiting.

Acute inhalation toxicity : LC50 (Rat): > 42 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): 10,000 mg/kg

Skin corrosion/irritation
Product:
Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation
Remarks : Information source: Internal study report

Components:
Spinetoram J & L (CAS# 187166-40-1 & 187166-15-0):
Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

Kaolin:
Species : Rabbit
Result : No skin irritation

Titanium dioxide:
Result : No skin irritation

Sodium chloride:
Species : Rabbit
Result : No skin irritation

Quartz:
Result : No skin irritation

Serious eye damage/eye irritation
Product:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405
Remarks	:	Information source: Internal study report

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

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405

Kaolin:

Species	:	Rabbit
Result	:	No eye irritation

Sodium N-methyl-N-oleoyltaurine:

Species	:	Rabbit
Result	:	Eye irritation

Titanium dioxide:

Result	:	No eye irritation

Sodium chloride:

Species	:	Rabbit
Result	:	No eye irritation

Quartz:

Result	:	No eye irritation

Respiratory or skin sensitisation
Product:

Test Type	:	Local lymph node assay (LLNA)
Species	:	Mouse
Assessment	:	Does not cause skin sensitisation.
Method	:	OECD Test Guideline 429
Remarks	:	Information source: Internal study report
Assessment	:	Does not cause respiratory sensitisation.

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

Species	:	Mouse
Result	:	The product is a skin sensitiser, sub-category 1B.

Sodium N-methyl-N-oleoyltaurine:

Species	:	Guinea pig
Result	:	Does not cause skin sensitisation.

Titanium dioxide:

Species	:	Mouse
Result	:	Does not cause skin sensitisation.
Species	:	Guinea pig
Result	:	Does not cause skin sensitisation.

Germ cell mutagenicity
Components:
Spinetoram J & L (CAS# 187166-40-1 & 187166-15-0):

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were negative., Animal genetic toxicity studies were negative.

Sodium N-methyl-N-oleoyltaurine:

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were negative.

Titanium dioxide:

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were negative in some cases and positive in other cases., Animal genetic toxicity studies were negative.

Sodium chloride:

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were predominantly negative.

Quartz:

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were negative in some cases and positive in other cases.

Carcinogenicity
Product:

Carcinogenicity - Assessment	:	Animal testing did not show any carcinogenic effects.

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

Carcinogenicity - Assessment	:	Did not cause cancer in laboratory animals.

Kaolin:

Carcinogenicity - Assessment	:	Animal testing did not show any carcinogenic effects.

Titanium dioxide:

Carcinogenicity - Assessment	:	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.

Quartz:

Carcinogenicity - Assessment	:	Has caused cancer in humans., Has caused cancer in laboratory animals., Human carcinogen.

Reproductive toxicity
Product:

Reproductive toxicity - Assessment	:	Suspected human reproductive toxicant

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

Reproductive toxicity - Assessment	:	Suspected human reproductive toxicant Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Sodium N-methyl-N-oleoyltaurine:

Reproductive toxicity - Assessment : Screening studies suggest that this material does not affect reproduction.

Quartz:
Reproductive toxicity - Assessment : For similar material(s):, Did not cause birth defects or any other fetal effects in laboratory animals.

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

Components:
Spinetoram J & L (CAS# 187166-40-1 & 187166-15-0):
Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

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

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

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

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

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

STOT - repeated exposure
Components:
Quartz:
Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

Repeated dose toxicity
Components:
Spinetoram J & L (CAS# 187166-40-1 & 187166-15-0):
Remarks : 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.

Kaolin:
Remarks : Repeated excessive exposure to crystalline silica may cause silicosis, a progressive and disabling disease of the lungs.

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

Titanium dioxide:
Remarks : Repeated excessive inhalation exposures to dusts may cause respiratory effects.
In animals, effects have been reported on the following organs:
Lung.

Sodium chloride:

Remarks : Medical experience with sodium chloride has shown a strong association between elevated blood pressure and prolonged dietary overuse. Related effects could occur in the kidneys.

Quartz:
Remarks : In humans, effects have been reported on the following organs:
Kidney.
Repeated excessive exposure to crystalline silica may cause silicosis, a progressive and disabling disease of the lungs.

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

Components:
Spinetoram J & L (CAS# 187166-40-1 & 187166-15-0):
Based on physical properties, not likely to be an aspiration hazard.

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

Sodium N-methyl-N-oleoyltaurine:
Based on available information, aspiration hazard could not be determined.

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

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

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

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Product:

Toxicity to fish : EC50 (Lepomis macrochirus (Bluegill sunfish)): 12.52 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
Remarks: Information source: Internal study report

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 23.52 mg/l
Exposure time: 48 h
Test Type: semi-static test
Method: OECD Test Guideline 202
Remarks: Information source: Internal study report

Toxicity to algae/aquatic plants :
Remarks: Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

ErC50 (diatom Navicula sp.): 0.564 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Remarks: Information source: Internal study report

Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): > 4,000 mg/kg
Exposure time: 14 d
Remarks: Information source: Internal study report

Toxicity to terrestrial organisms : Remarks: Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

oral LD50 (Colinus virginianus (Bobwhite quail)): > 2,250 mg/kg
Remarks: Information source: Internal study report

contact LD50 (Apis mellifera (bees)): 0.079 µg/bee
Exposure time: 96 h
Remarks: Information source: Internal study report

oral LD50 (Apis mellifera (bees)): 0.22 µg/bee
Exposure time: 96 h
Remarks: Information source: Internal study report

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Components:

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

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 2.69 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.229 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202 or Equivalent

LC50 (saltwater mysid Mysidopsis bahia): 0.355 mg/l
Exposure time: 96 h
Test Type: flow-through test

EC50 (Chironomus riparius (harlequin fly)): 0.0031 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 1.06 mg/l
End point: Biomass
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent

ErC50 (diatom Navicula sp.): 0.127 mg/l
End point: Biomass
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent
ErC50 (Lemna gibba): > 14.2 mg/l

End point: Growth rate inhibition
Exposure time: 7 d
Test Type: semi-static test

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.182 mg/l
End point: weight
Exposure time: 32 d
Test Type: flow-through test

LOEC (Pimephales promelas (fathead minnow)): 0.392 mg/l
End point: weight
Exposure time: 32 d
Test Type: flow-through test

MATC (Maximum Acceptable Toxicant Level) (Pimephales promelas (fathead minnow)): 0.267 mg/l
End point: weight
Exposure time: 32 d
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.000062 mg/l
Test Type: flow-through test

Toxicity to microorganisms : EC50 (Bacteria): > 10 mg/l
Exposure time: 3 h

Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): > 500 mg/kg
Exposure time: 14 d

Toxicity to terrestrial organisms : oral LD50 (Colinus virginianus (Bobwhite quail)): > 2250 mg/kg bodyweight.

dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5620 mg/kg diet.

oral LD50 (Apis mellifera (bees)): 0.11 micrograms/bee
Exposure time: 48 h

Sodium N-methyl-N-oleoyltaurine:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 1.32 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 5.76 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 197 mg/l
Exposure time: 72 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 2 mg/l
Exposure time: 21 d

Titanium dioxide:

Toxicity to fish : Remarks: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

NOEC mortality (Leuciscus idus (Golden orfe)): > 1,000 mg/l
Exposure time: 48 h

Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
Exposure time: 48 h
Test Type: static test

Sodium chloride:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 5,840 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203 or Equivalent

LC50 (Pimephales promelas (fathead minnow)): 10,610 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,900 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae/aquatic plants : EC50 (Other): 2,430 mg/l
End point: Growth inhibition (cell density reduction)
Exposure time: 120 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent

Toxicity to microorganisms : IC50 (activated sludge): > 1,000 mg/l
Method: OECD 209 Test

Quartz:

Toxicity to fish : Remarks: Not expected to be acutely toxic to aquatic organisms.

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Persistence and degradability

Components:

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

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 20 mg/l
Result: Not biodegradable
Biodegradation: 0.1 - 9.1 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent
Remarks: 10-day Window: Fail

Sodium N-methyl-N-oleoyltaurine:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 80 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent
Remarks: 10-day Window: Pass
Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Titanium dioxide:

Biodegradability : Remarks: Biodegradation is not applicable.

Quartz:

Biodegradability : Remarks: Biodegradation is not applicable.

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

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)
Bioconcentration factor (BCF): 348
Exposure time: 28 d

Partition coefficient: n-octanol/water : log Pow: 4.49 (20 °C)
pH: 7
Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Sodium N-methyl-N-oleoyltaurine:

Partition coefficient: n-octanol/water : Pow: 1.36 (20 °C)
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Titanium dioxide:

Partition coefficient: n-octanol/water : Remarks: Partitioning from water to n-octanol is not applicable.

Sodium chloride:

Partition coefficient: n-octanol/water : Remarks: No bioconcentration is expected because of the relatively high water solubility.
Partitioning from water to n-octanol is not applicable.

Quartz:

Partition coefficient: n-octanol/water : Remarks: Partitioning from water to n-octanol is not applicable.

Balance:

Partition coefficient: n-octanol/water : Remarks: No relevant data found.

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

Distribution among environmental compartments : Remarks: Potential for mobility in soil is slight (Koc between 2000 and 5000).

Titanium dioxide:

Distribution among environmental compartments : Remarks: No data available.

Sodium chloride:

Distribution among environmental compartments : Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

Quartz:

Distribution among environmental compartments : Remarks: No relevant data found.

Balance:

Distribution among environmental compartments : Remarks: No relevant data found.

Other adverse effects
Components:
Spinetoram J & L (CAS# 187166-40-1 & 187166-15-0):

Results of PBT and vPvB assessment : Substance is not persistent, bioaccumulative, and toxic (PBT). Substance is not very persistent and very bioaccumulative (vPvB).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Kaolin:

Results of PBT and vPvB assessment : 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).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Sodium N-methyl-N-oleoyltaurine:

Results of PBT and vPvB assessment : 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).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Titanium dioxide:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Sodium chloride:

Results of PBT and vPvB assessment : 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).

Ozone-Depletion Potential : Regulation: (Update: 12/17/2010; RT)
Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Quartz:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Balance:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : 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.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Spinetoram)
Class	:	9
Packing group	:	III
Labels	:	9
Environmentally hazardous	:	yes

IATA-DGR

UN/ID No.	:	UN 3077
Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (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. (Spinetoram)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes(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

TDG

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Spinetoram)
Class	:	9
Packing group	:	III
Labels	:	9
ERG Code	:	171
Marine pollutant	:	yes(Spinetoram)

Further information
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.

For Canadian Ground transportation TDG Exemption: 1.45.1 Marine Pollutants (Part 3, Documentation, and Part 4, Dangerous Goods Safety Marks, do not apply if they are in transport solely on land by road vehicle or railway vehicle).

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.

SECTION 15. REGULATORY INFORMATION

The components of this product are reported in the following inventories:

DSL : This product contains components that are not listed on the Canadian DSL nor NDSL.

Pest Control Products Act (PCPA) Registration Number : 28778

Read the PCPA label, authorized under the Pest Control Products Act, prior to using or handling this pest control product.
This chemical is a pest control product registered by Health Canada Pest Management Regulatory Agency and is subject to certain labelling requirements under the Pest Control Products Act (PCPA). There are Canada-specific environmental requirements for handling, use, and disposal of this pest control product that are indicated on the label. These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets. Following is the hazard information required on the pest control products label:
PCPA Label Hazard Communications:
Read the label and booklet before using. Keep out of reach of children.

Toxic to bees exposed to direct treatment, drift, or residues on flowering crops or weeds.
This product is toxic to:
Small wild mammals
Non-target terrestrial plants
May Be Toxic
Certain beneficial insects

SECTION 16. OTHER INFORMATION

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL
CA ON OEL	:	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.

CA QC OEL	:	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
Corteva OEL	:	Corteva Occupational Exposure Limit
ACGIH / TWA	:	8-hour, time-weighted average
CA AB OEL / TWA	:	8-hour Occupational exposure limit
CA BC OEL / TWA	:	8-hour time weighted average
CA ON OEL / TWA	:	Time-Weighted Average Limit (TWA)
CA QC OEL / TWAEV	:	Time-weighted average exposure value
Corteva OEL / TWA	:	8-hr TWA

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; 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.
DSL - Domestic substances List. WHMIS - Workplace Hazardous Materials Information System.

Revision Date	:	02/15/2025
Date format	:	mm/dd/yyyy

Product code: GF-1640

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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