

# SAFETY DATA SHEET



## Lumiverd™

Version 1.0      Revision Date: 10/03/2022      SDS Number: 800080101019      Date of last issue: -  
Date of first issue: 10/03/2022

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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 the United States and may not meet the regulatory requirements in other countries.

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### SECTION 1. IDENTIFICATION

Product name : Lumiverd™

#### Manufacturer or supplier's details

#### COMPANY IDENTIFICATION

Manufacturer/importer : CORTEVA AGRISCIENCE LLC  
9330 ZIONSVILLE RD  
INDIANAPOLIS, IN, 46268-1053  
UNITED STATES

Customer Information Number : 800-992-5994

E-mail address : customerinformation@corteva.com

Emergency telephone : INFOTRAC (CONTRACT 84224).  
+32 3 575 55 55

#### Recommended use of the chemical and restrictions on use

Recommended use : End use insecticide product

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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Combustible dust

Eye irritation : Category 2A

#### GHS label elements

Hazard pictograms :



Signal Word : Warning

Hazard Statements : May form combustible dust concentrations in air.  
H319 Causes serious eye irritation.

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Precautionary Statements : **Prevention:**  
P264 Wash skin thoroughly after handling.  
P280 Wear eye protection/ face protection.

**Response:**  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.

### Other hazards

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS-No.	Concentration (% w/w)
spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50)	168316-95-8	80
Kaolin	1332-58-7	>= 3 - < 10
Di-2-ethylhexyl sodium sulfosuccinate	577-11-7	>= 1 - < 3
Amorphous precipitated silica	112926-00-8	>= 1 - < 3
titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]	13463-67-7	>= 0.1 - < 0.3
Balance	Not Assigned	> 3

Actual concentration 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.  
If inhaled, remove to fresh air.

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 immediately available.

If swallowed : No emergency medical treatment necessary.

Most important symptoms and effects, both acute and : None known.

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delayed  
Protection of first-aiders : 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.

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.

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### SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray  
Alcohol-resistant foam

Unsuitable extinguishing media : None known.

Specific hazards during fire fighting : 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.

Further information : Use water spray to cool unopened containers.  
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 fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.  
Use personal protective equipment.

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### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Avoid dust formation.  
Avoid breathing dust.  
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

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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 over-pressurization 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.

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### SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Do not breathe vapors/dust.  
Do not smoke.  
Handle in accordance with good industrial hygiene and safety practice.  
Smoking, eating and drinking should be prohibited in the application area.  
Do not get on skin or clothing.  
Do not get in eyes.  
Avoid contact with skin and eyes.  
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 labeled containers.  
Store in accordance with the particular national regulations.

Materials to avoid : Strong oxidizing agents

Packaging material : Unsuitable material: None known.

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### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis

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spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50)	168316-95-8	TWA	0.3 mg/m <sup>3</sup>	Dow IHG
Kaolin	1332-58-7	TWA (Respirable particulate matter)	2 mg/m <sup>3</sup>	ACGIH
		TWA (total dust)	15 mg/m <sup>3</sup>	OSHA Z-1
		TWA (respirable fraction)	5 mg/m <sup>3</sup>	OSHA Z-1
		TWA (Total dust)	10 mg/m <sup>3</sup>	OSHA P0
		TWA (respirable dust fraction)	5 mg/m <sup>3</sup>	OSHA P0
		PEL (respirable)	0.05 mg/m <sup>3</sup>	OSHA CARC
Amorphous precipitated silica	112926-00-8	TWA (Dust)	20 Million particles per cubic foot (Silica)	OSHA Z-3
		TWA (Dust)	80 mg/m <sup>3</sup> / %SiO <sub>2</sub> (Silica)	OSHA Z-3
		TWA	6 mg/m <sup>3</sup>	OSHA P0
titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]	13463-67-7	TWA	2.4 mg/m <sup>3</sup>	Dow IHG
		TWA (total dust)	15 mg/m <sup>3</sup>	OSHA Z-1
		TWA (Total dust)	10 mg/m <sup>3</sup>	OSHA P0
		TWA (Respirable particulate matter)	2.5 mg/m <sup>3</sup> (Titanium dioxide)	ACGIH
		TWA (Respirable particulate matter)	0.2 mg/m <sup>3</sup> (Titanium dioxide)	ACGIH

**Engineering measures** : 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.

**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

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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.

### Hand protection

Remarks : Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyvinyl chloride ("PVC" or "vinyl"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). 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 chemical goggles.

Skin and body 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.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Powder
Color	: White to off-white
Odor	: Musty
Odor Threshold	: No data available
pH	: 9.4 (74.1 °F / 23.4 °C) Concentration: 1 % Method: pH Electrode 1% aqueous solution.
Freezing point	: Not applicable
Melting point/range	: No data available
Boiling point/boiling range	: Not applicable
Flash point	: Not applicable
Evaporation rate	: Not applicable
Flammability (solid, gas)	: May form combustible dust concentrations in air.
Upper explosion limit / Upper flammability limit	: Not applicable
Lower explosion limit / Lower	: Not applicable

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flammability limit

Vapor pressure : Not applicable

Relative vapor density : Not applicable

Relative density : No data available

Density : No data available

Bulk density : 0.38 g/mL (68 °F / 20 °C)

Solubility(ies)

    Water solubility : Soluble

Autoignition temperature : Not applicable

Viscosity

    Viscosity, dynamic : Not applicable

    Viscosity, kinematic : Not applicable

Explosive properties : Not explosive

Oxidizing properties : No significant increase (>5C) in temperature.

Reference substance: Potassium permanganate

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### 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.  
None known.

Conditions to avoid : None known.

Incompatible materials : Acids

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)

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

##### **Product:**

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method

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Acute inhalation toxicity : Acute toxicity estimate: > 200 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

**Components:****spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50):**

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

Acute inhalation toxicity : LC50 (Rat): > 5.18 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

**Kaolin:**

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

**Di-2-ethylhexyl sodium sulfosuccinate:**

Acute oral toxicity : LD50 (Rat): > 2,100 mg/kg  
Remarks: May cause abdominal discomfort or diarrhea.

Acute dermal toxicity : LD50 (Rabbit, male): > 10,000 mg/kg  
Method: OECD Test Guideline 402

**Amorphous precipitated silica:**

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

Acute inhalation toxicity : LC50 (Rat): > 2.08 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Symptoms: No deaths occurred at this concentration.  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: Maximum attainable concentration.

Acute dermal toxicity : LD50: > 2,000 mg/kg  
Method: Estimated.  
Assessment: The substance or mixture has no acute dermal toxicity

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

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

Acute inhalation toxicity : LC50 (Rat, male): > 6.82 mg/l



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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

**Skin corrosion/irritation****Components:****spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50):**

Species : Rabbit  
Result : No skin irritation

**Kaolin:**

Species : Rabbit  
Result : No skin irritation

**Di-2-ethylhexyl sodium sulfosuccinate:**

Species : Rabbit  
Result : Skin irritation

**Amorphous precipitated silica:**

Species : Rabbit  
Result : No skin irritation

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Result : No skin irritation

**Serious eye damage/eye irritation****Components:****Kaolin:**

Species : Rabbit  
Result : No eye irritation

**Di-2-ethylhexyl sodium sulfosuccinate:**

Species : Rabbit  
Result : Corrosive

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Result : No eye irritation

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**Respiratory or skin sensitization****Components:****spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50):**

Species : Guinea pig  
Assessment : Does not cause skin sensitization.

**Di-2-ethylhexyl sodium sulfosuccinate:**

Species : human  
Assessment : Does not cause skin sensitization.

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Remarks : Did not demonstrate the potential for contact allergy in mice.  
Did not cause allergic skin reactions when tested in guinea pigs.

Remarks : For respiratory sensitization:  
No relevant data found.

**Germ cell mutagenicity****Components:****spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50):**

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

**Di-2-ethylhexyl sodium sulfosuccinate:**

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

**Amorphous precipitated silica:**

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

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

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.

**Carcinogenicity****Components:****spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50):**

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

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**Kaolin:**

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

**Amorphous precipitated silica:**

Carcinogenicity - Assessment : Animal testing and human experience demonstrate no significant risk of human cancer from exposure to relatively pure amorphous silica.

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

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.

**Reproductive toxicity****Components:****spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50):**

Reproductive toxicity - Assessment : In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.  
Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

**Di-2-ethylhexyl sodium sulfosuccinate:**

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction. Available data are inadequate for evaluation of potential to cause birth defects., Available data are inadequate for evaluation of potential to cause fetotoxicity.

**Amorphous precipitated silica:**

Reproductive toxicity - Assessment : Did not cause birth defects or any other fetal effects in laboratory animals.

**STOT-single exposure****Components:****spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50):**

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

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**Kaolin:**

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

**Di-2-ethylhexyl sodium sulfosuccinate:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

**Amorphous precipitated silica:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter  $\leq 10 \mu\text{m}$ ]:**

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

**Repeated dose toxicity****Components:****spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50):**

Remarks : In animals, Spinosad 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.

**Di-2-ethylhexyl sodium sulfosuccinate:**

Remarks : May cause abdominal discomfort or diarrhea.

**Amorphous precipitated silica:**

Remarks : Diatomaceous earth or amorphous silica is considered a nuisance dust and does not cause the lung injury associated with crystalline silica. However, repeated excessive exposures to dust of amorphous silica (which is the main component in this product) may cause potentially reversible lung effects. Repeated exposures to dusts of this material are not anticipated to result in systemic toxicity or permanent lung injury; however, excessive exposures may cause less severe respiratory effects.

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter  $\leq 10 \mu\text{m}$ ]:**

Remarks : Repeated excessive inhalation exposures to dusts may cause

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respiratory effects.  
In animals, effects have been reported on the following organs:  
Lung.

**Aspiration toxicity****Components:****spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50):**

Based on available information, aspiration hazard could not be determined.

**Kaolin:**

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

**Di-2-ethylhexyl sodium sulfosuccinate:**

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

**Amorphous precipitated silica:**

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

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

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

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**SECTION 12. ECOLOGICAL INFORMATION**
**Ecotoxicity****Product:**

Toxicity to fish	:	LC50 (Cyprinus carpio (Carp)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 or Equivalent Remarks: As product:
Toxicity to terrestrial organisms	:	LD50 (Colinus virginianus (Bobwhite quail)): > 2,000 mg/kg > 2000 mg/kg bodyweight. GLP: yes  oral LD50 (Apis mellifera (bees)): 0.49 micrograms/bee GLP: yes

**Ecotoxicology Assessment**

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

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**Components:****spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50):**

- Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 4 g/L  
Exposure time: 96 h  
Method: OECD Test Guideline 203 or Equivalent
- LC50 (Rainbow trout (Oncorhynchus mykiss)): 27 mg/l  
Exposure time: 96 h
- LC50 (Lepomis macrochirus (Bluegill sunfish)): 5.9 mg/l  
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.5 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202 or Equivalent
- EC50 (eastern oyster (Crassostrea virginica)): 0.295 mg/l
- EC50 (Chironomus sp.): 0.014 mg/l  
Exposure time: 48 h
- Toxicity to algae/aquatic plants : EbC50 (diatom Navicula sp.): 0.107 mg/l  
End point: Biomass  
Exposure time: 5 d
- EbC50 (Pseudokirchneriella subcapitata (green algae)): 39 mg/l  
Exposure time: 7 d
- EC50 (Lemna gibba): 10.6 mg/l  
Exposure time: 14 d
- EC50 (blue-green alga Anabaena flos-aquae): 6.1 mg/l  
Exposure time: 120 h
- Toxicity to microorganisms : (Bacteria): > 100 mg/l
- Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): > 970 mg/kg  
Exposure time: 14 d
- Toxicity to terrestrial organisms : dietary LC50 (Anas platyrhynchos (Mallard duck)): > 5156 mg/kg diet.  
Exposure time: 5 d
- oral LD50 (Colinus virginianus (Bobwhite quail)): > 2000 mg/kg bodyweight.
- dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5253 mg/kg diet.  
Exposure time: 5 d
- oral LD50 (Apis mellifera (bees)): 0.06 micrograms/bee  
Exposure time: 48 h

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contact LD50 (Apis mellifera (bees)): 0.05 micrograms/bee  
Exposure time: 48 h

**Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life.

**Di-2-ethylhexyl sodium sulfosuccinate:**

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): 68 mg/l  
Exposure time: 96 h  
Method: Method Not Specified.

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 6.6 mg/l  
aquatic invertebrates      Exposure time: 48 h

**Amorphous precipitated silica:**

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 5,000 - 10,000 mg/l  
Exposure time: 96 h  
Test Type: Static

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l  
aquatic invertebrates      Exposure time: 24 h  
Test Type: Static  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae/aquatic : EC50 (Pseudokirchneriella subcapitata (green algae)): 440  
plants      mg/l  
End point: Biomass  
Exposure time: 72 h

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

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

**Persistence and degradability****Components:****spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50):**

Biodegradability : Result: Not readily biodegradable.

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Biodegradation: < 1 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B or Equivalent  
Remarks: 10-day Window: Fail

Biochemical Oxygen Demand (BOD)

: 66.000 %  
Incubation time: 5 d  
Method: DOW Test

68.000 %  
Incubation time: 10 d  
Method: DOW Test

76.000 %  
Incubation time: 20 d  
Method: DOW Test

77.000 %  
Incubation time: 28 d  
Method: DOW Test

Stability in water

: Test Type: Hydrolysis  
Method: Stable

Test Type: Hydrolysis  
Method: Stable

Test Type: Hydrolysis  
Degradation half life (half-life): 200 - 259 d (25 °C) pH: 9

Test Type: Hydrolysis  
Degradation half life (half-life): 0.84 - 0.96 d pH: 7

### Di-2-ethylhexyl sodium sulfosuccinate:

Biodegradability

: Result: Readily biodegradable.  
Remarks: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Inoculum: Activated sludge, non-adapted  
Biodegradation: > 60 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F or Equivalent  
Remarks: 10-day Window: Fail

Photodegradation

: Test Type: Half-life (indirect photolysis)  
Sensitizer: OH radicals  
Rate constant: 2.31E-11 cm<sup>3</sup>/s  
Method: Estimated.

### titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:

Biodegradability

: Remarks: Biodegradation is not applicable.



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**Bioaccumulative potential****Components:****spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50):**

Bioaccumulation : Species: Fish  
Bioconcentration factor (BCF): 33  
Exposure time: 28 d  
Method: Measured

Partition coefficient: n-octanol/water : log Pow: 4.01  
Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

**Di-2-ethylhexyl sodium sulfosuccinate:**

Bioaccumulation : Species: Fish  
Bioconcentration factor (BCF): 3.47 - 3.78  
Method: Measured

Partition coefficient: n-octanol/water : log Pow: 1.998  
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Amorphous precipitated silica:**

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

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

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:****spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50):**

Distribution among environmental compartments : Koc: 701  
Method: Measured  
Remarks: Potential for mobility in soil is low (Koc between 500 and 2000).

Stability in soil : Dissipation time: 8.68 - 9.44 d  
Method: Photolysis

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

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Distribution among environmental compartments : Remarks: No data available.

**Balance:**

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

**Other adverse effects****Components:****spinosad (ISO) (reaction mass of spinosyn A and spinosyn D in ratios between 95:5 to 50:50):**

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.

**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.

**Di-2-ethylhexyl sodium sulfosuccinate:**

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.

**Amorphous precipitated silica:**

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.

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

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 : This substance has not been assessed for persistence, bioac-

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assessment cumulation 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. (spinosad)  
Class : 9  
Packing group : III  
Labels : 9

##### IATA-DGR

UN/ID No. : UN 3077  
Proper shipping name : Environmentally hazardous substance, solid, n.o.s. (spinosad)  
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. (spinosad)  
Class : 9  
Packing group : III

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Labels : 9  
EmS Code : F-A, S-F  
Marine pollutant : yes  
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.

### Domestic regulation

#### 49 CFR

Not regulated as a dangerous good

### 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 5L 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.

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## SECTION 15. REGULATORY INFORMATION

**SARA 311/312 Hazards** : Combustible dust  
Serious eye damage or eye irritation

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### US State Regulations

#### Pennsylvania Right To Know

Kaolin	1332-58-7
Amorphous precipitated silica	112926-00-8

#### California Prop. 65

WARNING: This product can expose you to chemicals including Kaolin, Quartz, formaldehyde, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### The ingredients of this product are reported in the following inventories:

TSCA : Product contains substance(s) not listed on TSCA inventory.

### TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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**Federal Insecticide, Fungicide and Rodenticide Act**

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**CAUTION**

Causes moderate eye irritation

**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)
Dow IHG	:	Dow Industrial Hygiene Guideline
OSHA CARC	:	OSHA Specifically Regulated Chemicals/Carcinogens
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-3	:	USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
ACGIH / TWA	:	8-hour, time-weighted average
Dow IHG / TWA	:	Time Weighted Average (TWA):
Dow IHG / TWA	:	Time weighted average
OSHA CARC / PEL	:	Permissible exposure limit (PEL)
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average
OSHA Z-3 / TWA	:	8-hour time weighted average

AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; 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; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population;

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LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 10/03/2022

Product code: GF-733

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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