

TRACER<sup>™</sup> 480 SC

Version	Revision Date:	SDS Number:	Date of last issue: -
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Corteva Agriscience<sup>™</sup> 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 South Africa and may not meet the regulatory requirements in other countries.

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade name : TRACER<sup>™</sup> 480 SC

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Use of the Sub-  
stance/Mixture : Plant Protection Product, Insecticide

**1.3 Details of the supplier of the safety data sheet****COMPANY IDENTIFICATION****Manufacturer/importer**

Corteva Agriscience RSA Proprietary Limited  
Block A, 2nd Floor, Lakefield Office Park, 272 West Avenue  
Centurion, Gauteng, 1063  
SOUTH AFRICA

**Customer Information** : +27 (0) 12 683 5700

**Number**

**E-mail address** : SDS@corteva.com

**1.4 Emergency telephone number**

24-Hour Local Emergency Contact: +27 82 895 0621

24-Hour Emergency Contact: +32 3 575 55 55

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**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

Short-term (acute) aquatic hazard, Category 1 H400: Very toxic to aquatic life.


Long-term (chronic) aquatic hazard, Category 1 H410: Very toxic to aquatic life with long lasting effects.

**2.2 Label elements**

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Hazard pictograms : 

Signal word : Warning

Hazard statements : H410 Very toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements : EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statements : **Prevention:**  
P273 Avoid release to the environment.  
**Response:**  
P391 Collect spillage.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

### Additional Labelling

EUH208 Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
spinosyn A	131929-60-7 603-209-00-0	Aquatic Chronic 1; H410 Aquatic Acute 1; H400  M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	22,1
spinosyn D	131929-63-0 603-209-00-0	Aquatic Acute 1; H400 Aquatic Chronic 1;	22,1

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		H410 M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	
Spinosyn B	131929-61-8	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	0,489
Naphthalenesulfonic acid, formaldehyde ammonium salt copolymer	9069-80-1	Eye Irrit. 2; H319	>= 1 - < 3
1,2-benzisothiazol-3(2H)-one	2634-33-5 220-120-9 613-088-00-6	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 3; H412 M-Factor (Acute aquatic toxicity): 1	>= 0,025 - < 0,05

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

Protection of first-aiders : If potential for exposure exists refer to Section 8 for specific personal protective equipment.

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection).

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.

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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.

If swallowed : No emergency medical treatment necessary.

**4.2 Most important symptoms and effects, both acute and delayed**

None known.

**4.3 Indication of any immediate medical attention and special treatment needed**

Treatment : 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: Firefighting measures**

**5.1 Extinguishing media**

Suitable extinguishing media : Water spray  
Alcohol-resistant foam

Unsuitable extinguishing media : None known.

**5.2 Special hazards arising from the substance or mixture**

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)

**5.3 Advice for firefighters**

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

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.

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Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**6.2 Environmental precautions**

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.  
Prevent spreading over a wide area (e.g. by containment or oil barriers).  
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.

**6.3 Methods and material for containment and cleaning up**

Methods for cleaning up : Clean up remaining materials from spill with suitable absorbent.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in.  
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped,  
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.  
Wipe up with absorbent material (e.g. cloth, fleece).  
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
See Section 13, Disposal Considerations, for additional information.

**6.4 Reference to other sections**

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**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Advice on safe handling : Do not breathe vapours/dust.  
Handle in accordance with good industrial hygiene and safety

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practice.  
Smoking, eating and drinking should be prohibited in the application area.  
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.

**7.2 Conditions for safe storage, including any incompatibilities**

Requirements for storage areas and containers : 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.

Advice on common storage : Strong oxidizing agents

Packaging material : Unsuitable material: None known.

**7.3 Specific end use(s)**

Specific use(s) : Plant protection products subject to Regulation (EC) No 1107/2009.

**SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:**

Substance name	End Use	Exposure routes	Potential health effects	Value
Propylene glycol	Workers	Skin contact	Acute systemic effects	
	Remarks:No data available			
	Workers	Inhalation	Acute systemic effects	
	Remarks:No data available			
	Workers	Skin contact	Acute local effects	
	Remarks:No data available			
	Workers	Inhalation	Acute local effects	
	Remarks:No data available			
	Workers	Skin contact	Long-term systemic effects	
	Remarks:No data available			
	Workers	Inhalation	Long-term systemic effects	168 mg/m3
	Workers	Skin contact	Long-term local effects	
	Remarks:No data available			
	Workers	Inhalation	Long-term local effects	10 mg/m3
	Consumers	Skin contact	Acute systemic effects	
	Remarks:No data available			

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	Consumers	Inhalation	Acute systemic effects	
Remarks: No data available				
	Consumers	Skin contact	Acute local effects	
Remarks: No data available				
	Consumers	Inhalation	Acute local effects	
Remarks: No data available				
	Consumers	Skin contact	Long-term systemic effects	
Remarks: No data available				
	Consumers	Inhalation	Long-term systemic effects	50 mg/m <sup>3</sup>
	Consumers	Skin contact	Long-term local effects	
Remarks: No data available				
	Consumers	Inhalation	Long-term local effects	10 mg/m <sup>3</sup>

### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Propylene glycol	Fresh water	260 mg/l
	Marine water	26 mg/l
	Intermittent use/release	183 mg/l
	Sewage treatment plant	20000 mg/l
	Fresh water sediment	572 mg/kg dry weight (d.w.)
	Marine sediment	57,2 mg/kg dry weight (d.w.)
	Soil	50 mg/kg dry weight (d.w.)

## 8.2 Exposure controls

### 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

Eye/face protection : Use safety glasses (with side shields).  
Safety glasses (with side shields) should be consistent with EN 166 or equivalent.

Hand protection

Remarks : Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Avoid gloves made of: Polyvinyl alcohol ("PVA"). When pro-

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longed or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. Glove thickness alone is not a good indicator of the level of protection a glove provides against a chemical substance as this level of protection is also highly dependent on the specific composition of the material that the glove is fabricated from. The thickness of the glove must, depending on model and type of material, generally be more than 0.35 mm to offer sufficient protection for prolonged and frequent contact with the substance. As an exception to this general rule it is known that multilayer laminate gloves may offer prolonged protection at thicknesses less than 0.35 mm. Other glove materials with a thickness of less than 0.35 mm may offer sufficient protection when only brief contact is expected. 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.

Skin and body protection	:	Wear clean, body-covering clothing.
Respiratory protection	:	Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

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**SECTION 9: Physical and chemical properties**
**9.1 Information on basic physical and chemical properties**

Appearance	:	Liquid.
Colour	:	Off-white
Odour	:	Mild
Odour Threshold	:	No data available
pH	:	7,52 Method: CIPAC MT 75.1 GLP: yes (neat)
Melting point/range	:	Not applicable
Freezing point	:	No data available



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Boiling point/boiling range : No data available

Flash point : > 100 °C  
Method: EC Method A9, closed cup  
GLP: yes  
none below boiling point

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable to liquids

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : No data available

Density : 1,09 g/cm<sup>3</sup> (20 °C)  
Method: Calculated.

Solubility(ies)  
Water solubility : Dispersible  
Partition coefficient: n-octanol/water : No data available

Auto-ignition temperature : Method: EC Method A15  
GLP: yes  
none below 400 degC

Viscosity  
Viscosity, dynamic : 134,6 mPa.s (20 °C)

Explosive properties : No  
Method: EEC A14  
GLP: yes

Oxidizing properties : No  
GLP: yes

### 9.2 Other information

Surface tension : 43 mN/m

Particle Size Distribution : No data available

Self-ignition : No data available

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**SECTION 10: Stability and reactivity****10.1 Reactivity**

Not classified as a reactivity hazard.

**10.2 Chemical stability**

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

**10.3 Possibility of hazardous reactions**

Hazardous reactions : Stable under recommended storage conditions.  
No hazards to be specially mentioned.  
None known.

**10.4 Conditions to avoid**

Conditions to avoid : None known.

**10.5 Incompatible materials**

Materials to avoid : Strong acids  
Strong bases

**10.6 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 (NO<sub>x</sub>)

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**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity****Product:**

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg  
Remarks: Based on information for a similar material:

Acute inhalation toxicity : LC50 (Rat): > 5,0 mg/l  
Exposure time: 4 h  
Test atmosphere: Aerosol  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: For similar material(s):

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg  
Remarks: Based on information for a similar material:

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**Components:****spinosyn A:**

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg  
LD50 (Mouse, male): 6.124 mg/kg  
LD50 (Mouse, female): 7.119 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5,18 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg  
Symptoms: No deaths occurred at this concentration.

**Spinosyn B:**

Acute oral toxicity : LD50 (Mouse): 3.162 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5,18 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist

**1,2-benzisothiazol-3(2H)-one:**

Acute oral toxicity : LD50 (Rat): 675,3 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0,25 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

**Skin corrosion/irritation****Product:**

Result : No skin irritation

**Components:****1,2-benzisothiazol-3(2H)-one:**

Species : Rabbit  
Result : Skin irritation

**Serious eye damage/eye irritation****Product:**

Result : No eye irritation

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**Components:****Naphthalenesulfonic acid, formaldehyde ammonium salt copolymer:**

Species : Rabbit  
Result : Eye irritation

**1,2-benzisothiazol-3(2H)-one:**

Species : Rabbit  
Result : Corrosive

**Respiratory or skin sensitisation****Components:****spinosyn A:**

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

**Spinosyn B:**

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

**1,2-benzisothiazol-3(2H)-one:**

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

**Germ cell mutagenicity****Components:****spinosyn A:**

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

**Spinosyn B:**

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

**1,2-benzisothiazol-3(2H)-one:**

Germ cell mutagenicity- Assessment : Not mutagenic when tested in bacterial or mammalian systems.

**Carcinogenicity****Components:****spinosyn A:**

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

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**Spinosyn B:**

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

**Reproductive toxicity****Components:****spinosyn A:**

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.

**Spinosyn B:**

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.

**1,2-benzisothiazol-3(2H)-one:**

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction., In animal studies, did not interfere with fertility.  
Did not cause birth defects in laboratory animals.

**STOT - single exposure****Product:**

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

**Components:****1,2-benzisothiazol-3(2H)-one:**

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

**Repeated dose toxicity****Components:****spinosyn A:**

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.

**Spinosyn B:**

Remarks : In animals, Spinosad has been shown to cause vacuolization

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of cells in various tissues.  
Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

**1,2-benzisothiazol-3(2H)-one:**

Remarks : Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

**Aspiration toxicity****Product:**

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

**Components:****spinosyn A:**

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

**Spinosyn B:**

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

**SECTION 12: Ecological information****12.1 Toxicity****Product:**

Toxicity to fish	:	Remarks: For similar material(s): Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species).  LC50 (Cyprinus carpio (Carp)): > 100 mg/l Exposure time: 96 h Remarks: For similar material(s):  LC50 (Danio rerio (zebra fish)): > 120 mg/l Exposure time: 96 h Remarks: For similar material(s):
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 19 mg/l Exposure time: 48 h Test Type: semi-static test Method: OECD Test Guideline 211 or Equivalent
Toxicity to algae/aquatic plants	:	EbC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l Exposure time: 72 h  EbC50 (diatom Navicula sp.): 0,667 mg/l End point: Biomass Exposure time: 120 h

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EC50 (diatom *Navicula* sp.): 0,86 mg/l  
End point: Growth rate  
Exposure time: 72 h  
Method: OECD Test Guideline 201

Toxicity to soil dwelling organisms : Test Type: Based on information for a similar material:  
LC50: > 458 mg/kg  
Exposure time: 14 d  
Species: *Eisenia fetida* (earthworms)

LC50: > 291 mg/kg  
Exposure time: 56 d  
Species: *Eisenia fetida* (earthworms)

Toxicity to terrestrial organisms : oral LD50: 0,049 micrograms/bee  
Exposure time: 48 h  
Species: *Apis mellifera* (bees)

contact LD50: 0,05 micrograms/bee  
Exposure time: 48 h  
Species: *Apis mellifera* (bees)

### Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

### Components:

#### **spinosyn A:**

Toxicity to fish : LC50 (*Cyprinus carpio* (Carp)): 3,49 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203 or Equivalent

LC50 (*Oncorhynchus mykiss* (rainbow trout)): 30 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203 or Equivalent

LC50 (*Cyprinus carpio* (Carp)): 4,99 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)): 14 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic plants : ErC50 (*Pseudokirchneriella subcapitata* (green algae)): > 105,5 mg/l

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End point: Growth rate inhibition  
 Exposure time: 7 d  
 Test Type: static test  
 Method: OECD Test Guideline 201 or Equivalent

ErC50 (diatom *Navicula* sp.): 0,107 mg/l  
 Exposure time: 5 d  
 Test Type: static test  
 Method: OECD Test Guideline 201 or Equivalent

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish (Chronic toxicity) : NOEC: 0,498 mg/l  
 Exposure time: 32 d  
 Species: *Oncorhynchus mykiss* (rainbow trout)  
 Test Type: flow-through test

NOEC: 1,15 mg/l  
 End point: weight  
 Exposure time: 35 d  
 Species: *Cyprinodon variegatus* (sheepshead minnow)  
 Test Type: flow-through test

LOEC: 0,962 mg/l  
 Exposure time: 32 d  
 Species: *Oncorhynchus mykiss* (rainbow trout)  
 Test Type: flow-through test

LOEC: 2,38 mg/l  
 End point: weight  
 Exposure time: 35 d  
 Species: *Cyprinodon variegatus* (sheepshead minnow)  
 Test Type: flow-through test

MATC (Maximum Acceptable Toxicant Level): 0,692 mg/l  
 Exposure time: 32 d  
 Species: *Oncorhynchus mykiss* (rainbow trout)  
 Test Type: flow-through test

MATC (Maximum Acceptable Toxicant Level): 1,65 mg/l  
 End point: weight  
 Exposure time: 35 d  
 Species: *Cyprinodon variegatus* (sheepshead minnow)  
 Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,0842 mg/l  
 End point: number of offspring  
 Exposure time: 28 d  
 Species: saltwater mysid *Mysidopsis bahia*  
 Test Type: flow-through test

NOEC: 0,0016 mg/l  
 Exposure time: 25 d



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Species: Midge (Chironomus riparius)  
Test Type: flow-through test

LOEC: 0,173 mg/l  
End point: number of offspring  
Exposure time: 28 d  
Species: saltwater mysid Mysisidopsis bahia  
Test Type: flow-through test

LOEC: 0,0032 mg/l  
Exposure time: 25 d  
Species: Midge (Chironomus riparius)  
Test Type: flow-through test

MATC (Maximum Acceptable Toxicant Level): 0,121 mg/l  
End point: number of offspring  
Exposure time: 28 d  
Species: saltwater mysid Mysisidopsis bahia  
Test Type: flow-through test

MATC (Maximum Acceptable Toxicant Level): 0,0022 mg/l  
Exposure time: 25 d  
Species: Midge (Chironomus riparius)  
Test Type: flow-through test

M-Factor (Chronic aquatic toxicity) : 10

Toxicity to soil dwelling organisms : LC50: 48.000 mg/kg  
Exposure time: 14 d  
Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organisms : oral LD50: > 2000 mg/kg bodyweight.  
Species: Colinus virginianus (Bobwhite quail)

dietary LC50: > 5253 mg/kg diet.  
Species: Colinus virginianus (Bobwhite quail)

oral LD50: 0,06 micrograms/bee  
Exposure time: 48 h  
Species: Apis mellifera (bees)

contact LD50: 0,05 micrograms/bee  
Exposure time: 48 h  
Species: Apis mellifera (bees)

### spinosyn D:

M-Factor (Acute aquatic toxicity) : 10

M-Factor (Chronic aquatic toxicity) : 10

### Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

**Spinosyn B:**

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 21,4 mg/l  
Exposure time: 48 h  
Test Type: semi-static test

EC50 (Daphnia magna (Water flea)): 6,39 mg/l  
Exposure time: 48 h  
Test Type: semi-static test

EC50 (Daphnia magna (Water flea)): 6,5 mg/l  
Exposure time: 48 h  
Test Type: static test

Toxicity to algae/aquatic plants : ErC50 (Navicula pelliculosa (Freshwater diatom)): 0,29 - 0,36 mg/l  
End point: Growth rate inhibition  
Exposure time: 72 h  
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 1

M-Factor (Chronic aquatic toxicity) : 1

Toxicity to soil dwelling organisms : LC50: > 1.000 mg/kg  
Exposure time: 14 d  
Species: Eisenia fetida (earthworms)  
GLP:yes

**1,2-benzisothiazol-3(2H)-one:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,9 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)): 3,7 mg/l  
Exposure time: 48 h  
Test Type: flow-through test  
Method: OECD Test Guideline 202 or Equivalent

LC50 (Mysid shrimp (Mysidopsis bahia)): 1,9 mg/l  
Exposure time: 96 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 0,8 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201 or Equivalent

NOEC (Pseudokirchneriella subcapitata (green algae)): 0,21

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mg/l  
 End point: Growth rate  
 Exposure time: 72 h  
 Test Type: static test  
 Method: OECD Test Guideline 201 or Equivalent

ErC50 (diatom *Skeletonema costatum*): 0,36 mg/l  
 Exposure time: 72 h  
 Test Type: static test  
 Method: OECD Test Guideline 201 or Equivalent

NOEC (diatom *Skeletonema costatum*): 0,15 mg/l  
 End point: Growth rate  
 Exposure time: 72 h  
 Test Type: static test  
 Method: OECD Test Guideline 201 or Equivalent

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (Bacteria (active sludge)): 28,52 mg/l  
 Exposure time: 3 h  
 Test Type: Respiration inhibition of activated sludge

**12.2 Persistence and degradability****Components:****spinosyn A:**

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

Remarks: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

Stability in water : Test Type: Photolysis  
 Degradation half life: 200 - 259 d  
 pH: 9

**1,2-benzisothiazol-3(2H)-one:**

Biodegradability : Result: Readily biodegradable.  
 Biodegradation: 24 %  
 Exposure time: 28 d  
 Method: OECD Test Guideline 301B or Equivalent  
 Remarks: Abiotic degradation: The material is rapidly degradable by abiotic means.

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**12.3 Bioaccumulative potential****Components:****spinosyn A:**

Bioaccumulation : Species: Fish  
 Bioconcentration factor (BCF): 33  
 Remarks: Based on information for a similar material:  
 Spinosyn D.

Species: Fish  
 Bioconcentration factor (BCF): 19  
 Remarks: Spinosyn A.

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

**1,2-benzisothiazol-3(2H)-one:**

Bioaccumulation : Species: Fish  
 Bioconcentration factor (BCF): 3,2  
 Method: Calculated.

Partition coefficient: n-octanol/water : log Pow: 1,19  
 Method: OECD Test Guideline 117 or Equivalent  
 Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**12.4 Mobility in soil****Components:****spinosyn A:**

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

Stability in soil : Test Type: Photolysis  
 Dissipation time: 8,68 - 9,44 d  
 Test Type: aerobic degradation  
 Dissipation time: 14,5 d

**1,2-benzisothiazol-3(2H)-one:**

Distribution among environmental compartments : Koc: 104  
 Method: Estimated.  
 Remarks: Potential for mobility in soil is high (Koc between 50 and 150).  
 Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

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**12.5 Results of PBT and vPvB assessment****Product:**

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**Components:****spinosyn A:**

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).

**Spinosyn B:**

Assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

**Naphthalenesulfonic acid, formaldehyde ammonium salt copolymer:**

Assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

**1,2-benzisothiazol-3(2H)-one:**

Assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

**12.6 Other adverse effects****Product:**

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**Components:****spinosyn A:**

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

**Spinosyn B:**

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

**Naphthalenesulfonic acid, formaldehyde ammonium salt copolymer:**

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

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**1,2-benzisothiazol-3(2H)-one:**

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

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**SECTION 13: Disposal considerations****13.1 Waste treatment methods**

Product : 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.

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**SECTION 14: Transport information****14.1 UN number**

UNRTDG : UN 3082  
IMDG : UN 3082  
IATA : UN 3082

**14.2 UN proper shipping name**

UNRTDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Spinosad)  
IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Spinosad)  
IATA : Environmentally hazardous substance, liquid, n.o.s. (Spinosad)

**14.3 Transport hazard class(es)**

UNRTDG : 9  
IMDG : 9  
IATA : 9

**14.4 Packing group**

UNRTDG

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Packing group : III  
Labels : 9

### IMDG

Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Remarks : Stowage category A

### IATA (Cargo)

Packing instruction (cargo aircraft) : 964  
Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous

### IATA (Passenger)

Packing instruction (passenger aircraft) : 964  
Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous

## 14.5 Environmental hazards

### IMDG

Marine pollutant : yes(Spinosad)

## 14.6 Special precautions for user

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.

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.

## 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

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## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.      E1      ENVIRONMENTAL HAZARDS

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**15.2 Chemical safety assessment**

A Chemical Safety Assessment is not required for this substance when it is used in the specified applications.

The mixture is evaluated within the frame of the provisions of Regulation (EC) No. 1107/2009.

Refer to the label for exposure assessment information.

**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.

Classification was done in accordance with UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Purple Book and complies with the Regulations for Hazardous Chemical Agents, 2021.

**Full text of H-Statements**

H302	: Harmful if swallowed.
H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H318	: Causes serious eye damage.
H319	: Causes serious eye irritation.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
H412	: Harmful to aquatic life with long lasting effects.

**Full text of other abbreviations**

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Dam.	: Serious eye damage
Eye Irrit.	: Eye irritation
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; 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; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - Interna-



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tional Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECl - 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

**Further information****Classification of the mixture:**

Aquatic Acute 1	H400
Aquatic Chronic 1	H410

**Classification procedure:**

Based on product data or assessment
Based on product data or assessment

Product code: GF-976

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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