SAFETY DATA SHEET

SPINTOR™ SC

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.09.2023	800080003051	Date of first issue: 19.09.2023

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 Georgia and may not meet the regulatory requirements in other countries.

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product name : SPINTOR™ SC

Manufacturer or supplier's details

COMPANY IDENTIFICATION

Manufacturer/importer : Corteva Agriscience International S.a.r.l.
Route de Suisse 160
CH-1290 Versoix
Switzerland

E-mail address : SDS@corteva.com

Emergency telephone number : +32 3 575 55 55

Recommended use of the chemical and restrictions on use

Recommended use : End use insecticide product

2. HAZARDS IDENTIFICATION

GHS Classification

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

GHS-Labelling

Hazard pictograms :

Signal word : Warning

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

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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.

Other hazards which do not result in classification
None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Components

Chemical name	CAS-No.	Classification	MAC value mg/m3 / TSEL value	Concentration (% w/w)
spinosyn A	131929-60-7	Acute Tox.5; H313 Aquatic Acute2; H401 Aquatic Chronic1; H410	No data available	5,01
spinosyn D	131929-63-0	Aquatic Acute1; H400 Aquatic Chronic1; H410	No data available	5,01
Propylene glycol	57-55-6		MPC-STEL: 7 mg/m3 Class 3 - Moderately dangerous Data Source: RU OEL	>= 3 - < 10
Naphthalenesulfonic acid, formaldehyde ammonium salt copolymer	9069-80-1	Eye Irrit.2A; H319	No data available	>= 1 - < 3
Spinosyn B	131929-61-8	Acute Tox.5; H303 Acute Tox.5; H333 Aquatic Acute1; H400 Aquatic Chronic1; H410	No data available	0,11
1,2-benzisothiazol-3(2H)-one	2634-33-5	Acute Tox.4; H302	No data available	>= 0,05 - < 0,1

		Skin Irrit.2; H315 Eye Dam.1; H318 Skin Sens.1; H317 Aquatic Acute1; H400 Aquatic Chronic3; H412		

For explanation of abbreviations see section 16.

4. FIRST AID MEASURES

If inhaled	:	No emergency medical treatment necessary.
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.
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.

5. FIREFIGHTING MEASURES

Flammable properties

Flash point	:	> 93,3 °C Method: Closed Cup
Ignition temperature	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flammability (solid, gas)	:	Not applicable to liquids
Suitable extinguishing media	:	Water spray Alcohol-resistant foam

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	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. 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.
Methods and materials for containment and cleaning up	:	Clean up remaining materials from spill with suitable absorbant. 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.

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.
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

Packaging material : Unsuitable material: None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
spinosyn A	131929-60-7	TWA	0,3 mg/m3	Dow IHG
Propylene glycol	57-55-6	MPC-STEL (mixture of vapour and aerosol)	7 mg/m3	RU OEL
	Further information: Class 3 - Moderately dangerous			
1,2-benzisothiazol-3(2H)-one	2634-33-5	TWA	0,06 mg/m3	Dow IHG
		STEL	0,1 mg/m3	Dow IHG

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.

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, 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 : Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

Eye protection : Use safety glasses (with side shields).

Skin and body protection : No precautions other than clean body-covering clothing should be needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid.
Colour	:	Off-white
Odour	:	Mild
Odour Threshold	:	No data available
pH	:	7,9 Concentration: 10 % Method: pH Electrode (10% solution in water)
Melting point/range	:	Not applicable
Freezing point		No data available
Boiling point/boiling range	:	No data available
Flash point	:	> 93,3 °C Method: Closed Cup
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	:	1,056 g/cm3 (20 °C) Method: OECD 109
Solubility(ies)		
Water solubility	:	Dispersible
Auto-ignition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	389,0 cP (25 °C)
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	No significant increase (>5C) in temperature. Reference substance: Monoammonium phosphate
Surface tension	:	43 - 45 mN/m, 20 °C

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. May form explosive dust-air mixture.
Conditions to avoid	:	None known.
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)

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	LD50 (Rat, male and female): > 5.000 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	:	LC50 (Rat): > 5,0 mg/l Test atmosphere: Aerosol Assessment: The substance or mixture has no acute inhalation toxicity

Remarks: For similar material(s):

Acute dermal toxicity : LD50 (Rabbit, male and female): > 5.000 mg/kg
Method: OECD Test Guideline 402

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

Propylene glycol:

Acute oral toxicity : LD50 (Rat): > 20.000 mg/kg

Acute inhalation toxicity : LC50 (Rabbit): 317,042 mg/l
Exposure time: 2 h
Test atmosphere: dust/mist
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Mist may cause irritation of upper respiratory tract (nose and throat).

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute dermal toxicity

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:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

Components:

Propylene glycol:

Species : Rabbit
Result : No skin irritation

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

Species : Rabbit
Result : Skin irritation

Serious eye damage/eye irritation

Product:

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

Components:

Propylene glycol:

Species : Rabbit
Result : No eye irritation

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

Product:

Test Type : Buehler Test
Species : Guinea pig
Assessment : Does not cause skin sensitisation.
Method : OECD Test Guideline 406

Components:

spinosyn A:

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

Spinosyn B:

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

Propylene glycol:

Species	:	human
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.

Propylene glycol:

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

Spinosyn B:

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

Propylene glycol:

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.

Propylene glycol:

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

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:

Propylene glycol:

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

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

Propylene glycol:

Remarks : In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

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.

Propylene glycol:

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

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): > 100 mg/l
Exposure time: 96 h
Remarks: For similar material(s):

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 16,9 mg/l Exposure time: 48 h Test Type: semi-static test
Toxicity to algae/aquatic plants	:	Remarks: For similar material(s): 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). 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
Toxicity to soil dwelling organisms	:	Test Type: Based on information for a similar material: LC50 (Eisenia fetida (earthworms)): > 2.000 mg/kg Exposure time: 14 d
Toxicity to terrestrial organisms	:	oral LD50 (Apis mellifera (bees)): 0,11 micrograms/bee Exposure time: 48 h Remarks: Based on information for a similar material: contact LD50 (Apis mellifera (bees)): 0,12 micrograms/bee Exposure time: 48 h Remarks: Based on information for a similar material:

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 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
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 0,498 mg/l Exposure time: 32 d Test Type: flow-through test NOEC (Cyprinodon variegatus (sheepshead minnow)): 1,15 mg/l End point: weight Exposure time: 35 d Test Type: flow-through test LOEC (Oncorhynchus mykiss (rainbow trout)): 0,962 mg/l Exposure time: 32 d Test Type: flow-through test LOEC (Cyprinodon variegatus (sheepshead minnow)): 2,38 mg/l End point: weight Exposure time: 35 d Test Type: flow-through test MATC (Maximum Acceptable Toxicant Level) (Oncorhynchus mykiss (rainbow trout)): 0,692 mg/l Exposure time: 32 d Test Type: flow-through test MATC (Maximum Acceptable Toxicant Level) (Cyprinodon variegatus (sheepshead minnow)): 1,65 mg/l End point: weight Exposure time: 35 d Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (saltwater mysid Mysidopsis bahia): 0,0842 mg/l End point: number of offspring Exposure time: 28 d Test Type: flow-through test NOEC (Midge (Chironomus riparius)): 0,0016 mg/l Exposure time: 25 d

Test Type: flow-through test

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

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

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

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

M-Factor (Chronic aquatic toxicity) : 10

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

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

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

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

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

spinosyn D:

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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 (Eisenia fetida (earthworms)): > 1.000 mg/kg
Exposure time: 14 d
GLP: yes

Propylene glycol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 40.613 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : LC50 (Ceriodaphnia dubia (water flea)): 18.340 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 19.000 mg/l
End point: Growth rate inhibition
Exposure time: 96 h
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Ceriodaphnia dubia (water flea)): 13.020 mg/l
End point: number of offspring
Exposure time: 7 d
Test Type: semi-static test

Toxicity to microorganisms : NOEC (Pseudomonas putida): > 20.000 mg/l
Exposure time: 18 h

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 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

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

Propylene glycol:

Biodegradability : aerobic

Result: Readily biodegradable.
Biodegradation: 81 %
Exposure time: 28 d
Method: OECD Test Guideline 301F or Equivalent
Remarks: 10-day Window: Pass

Biodegradation: 96 %
Exposure time: 64 d
Method: OECD Test Guideline 306 or Equivalent
Remarks: 10-day Window: Not applicable

Biochemical Oxygen Demand (BOD) : 69.000 %
Incubation time: 5 d

70.000 %
Incubation time: 10 d

86.000 %
Incubation time: 20 d

Chemical Oxygen Demand (COD) : 1,53 kg/kg

ThOD : 1,68 kg/kg

Photodegradation : Rate constant: 1,28E-11 cm3/s
Method: Estimated.

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.

ThOD : 2,22 kg/kg

Photodegradation : Sensitiser: OH radicals
Concentration: 1.500.000 1/cm3
Rate constant: 1,696E-11 cm3/s
Method: Estimated.

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).

Propylene glycol:

Bioaccumulation : Bioconcentration factor (BCF): 0,09
Method: Estimated.

Partition coefficient: n-octanol/water : log Pow: -1,07
Method: Measured
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).

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

Propylene glycol:

Distribution among environmental compartments : Koc: < 1
Method: Estimated.
Remarks: 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.
Potential for mobility in soil is very high (Koc between 0 and 50).

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.

Other adverse effects

Components:

spinosyn A:

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.

Spinosyn B:

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.

Propylene glycol:

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.

Naphthalenesulfonic acid, formaldehyde ammonium salt copolymer:

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.

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

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.

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.

14. TRANSPORT INFORMATION

ADR

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (spinosad)
Class	:	9
Packing group	:	III
Labels	:	9
Hazard Identification Number	:	90
Tunnel restriction code	:	(-)
Environmentally hazardous	:	no

UNRTDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Spinosad)
Class	:	9
Packing group	:	III
Labels	:	9
Environmentally hazardous	:	no

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (Spinosad)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964

IMDG-Code

UN number	:	UN 3082

Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Spinosad)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes(Spinosad)
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.

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.

Special precautions for user

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

15. REGULATORY INFORMATION

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

16. OTHER INFORMATION

Full text of H-Statements

H302	Harmful if swallowed.
H303	May be harmful if swallowed.
H313	May be harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H333	May be harmful if inhaled.
H400	Very toxic to aquatic life.
H401	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
Dow IHG	:	Dow Industrial Hygiene Guideline
RU OEL	:	SanPiN 1.2.3685-21 Table 2.1, Table 2.8, Table 2.16 & Table 2.17 Maximum permissible concentrations (MPC) in the air of the working area
Dow IHG / TWA	:	Time Weighted Average (TWA):
Dow IHG / STEL	:	Short term exposure limit
Dow IHG / TWA	:	Time weighted average
RU OEL / MPC-STEL	:	Maximum Permissible Concentration - Short Term Exposure

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.

Product code: NAF-315

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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