

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

1.1 Product Identifier

Product Name: SPINOSTAR
Product Code: 179-01

UFI Code: S5PW-X4YD-Y50W-MDWP

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

Product Use: Insecticide

1.3 Details of the supplier of the safety data sheet

Company: Life Scientific Ltd,
Block 4,
Belfield Office Park,
Beech Hill Road,
Dublin 4
Ireland

Telephone: +353 (0) 1 2832024
Email: info@lifescientific.com
Web: www.lifescientific.com

1.4 Emergency contact information

In case of Emergency: Tel. NHS 111

Section 2. HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EU) No. 1272/2008

Aquatic Acute	Category 1	H400
Aquatic Chronic	Category 1	H410

2.2 Label Elements

Labelling according to Regulation (EU) 1272/2008

Hazard Pictograms:



Signal Word:

Warning

Hazard Phrases:

H410 Very toxic to aquatic life with long lasting effects.

Precautionary Phrases:

P102	Keep out of reach of children.
P391	Collect spillage.
P501	Dispose of contents/container to a licensed hazardous waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste

Other Phrases:

EUH208 Contains: 1,2-benzisothiazolin-3-one. May produce an allergic reaction.
EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

SP 1 Do not contaminate water with the product or its container (Do not clean application equipment near surface water/Avoid contamination via drains from farmyards and roads).

2.3 Other Hazards

This mixture does not contain any ingredients considered persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or greater.

The product does not contain ingredients listed in the list drawn up in accordance with Article 59, paragraph 1, which have properties that disrupt the functioning of the endocrine system, nor substances that have properties that disrupt the functioning of the endocrine system in accordance with the criteria set out in Regulation 2017/2100/ EU or in Regulation 2018/605/EU in a concentration of $\geq 0.1\%$ by weight.

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

No substances fulfil the criteria set out in Annex II, Part A of the REACH Regulation (EC) No 1907/2006.

3.2 Mixtures

Chemical Name	CAS	EC	Classification (Regulation (EC) No 1272/2008)	Concentration (% w/w)
Spinosad (a mixture of spinosyn A and spinosyn D)	Spinosad 168316-95-8 (Spinosyn A 131929-60-7 Spinosyn D 131929-63-0)	434-300-1	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	44.0 % w/w
Propylene glycol	57-55-6	200-338-0	Not classified	< 5.0 % w/w

Section 4. FIRST AID MEASURES

4.1 Description of first aid measures

General information: Have the product container, label or Safety Data Sheet with you when calling the emergency number, a Poison Control Centre or physician, or going for treatment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control centre or doctor for treatment advice.

Ingestion: Call a poison centre or a doctor if you feel unwell. Rinse mouth out with water. Do not induce vomiting.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice. Suitable emergency safety shower facility should be available in work area.

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 centre or doctor for treatment advice. Suitable emergency eye wash facility should be available in work area.

4.2 Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

4.3 Indication of any immediate medical attention and special treatment needed

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 centre or doctor or going for treatment.

Section 5. FIREFIGHTING MEASURES

5.1 Extinguishing media

To extinguish combustible residues of this product, use water fog, carbon dioxide, dry chemical or foam.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn. If exposed to fire from another source and water is evaporated, exposure to high temperatures may cause toxic fumes.

5.3 Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. To extinguish combustible residues of this product, use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this MSDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus and protective fire-fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Section 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

6.2 Environmental precautions

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways are likely to kill aquatic organisms.

6.3 Methods and materials for containment and cleaning up

Contain spilled material if possible. See Section 13, Disposal Considerations, for additional information.

6.4 Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in Sections 8 and 13.

Section 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Precautions for safe handling: Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapour or mist. Wash thoroughly after handling. Use with adequate ventilation.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

7.3 Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

Section 8. EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 Control parameters

Component	Exposure Limit	Value Type
Spinosad	0.3 mg/m3	TWA
Propylene glycol	10 mg/m3	TWA

8.2 Exposure controls

When using this product refer to the label for details. In all other cases, use the following 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. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.
Skin protection:	Hand protection: 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. Other protection: Wear clean, body-covering clothing.
Eye protection:	Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent.
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.
Protective measures:	The use of technical measures should always have priority over the use of personal protective equipment. When selecting personal protective equipment, seek appropriate professional advice. Personal protective equipment should be certified to appropriate standards.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Results based on a similar composition

Form:	Liquid
Colour:	Off-white
Odour:	Mild
pH (at 20 °C):	7 – 8
Melting point:	Not applicable
Flash Point:	> 100 °C EC Method A9 none below boiling point
Freezing point:	No test data available
Boiling point:	No test data available
Flammability (solid, gas)	Not applicable to liquids
Lower explosion limit	No test data available

Upper explosion limit	No test data available
Vapor Pressure	No test data available
Relative Vapor Density (air = 1)	No test data available
Relative Density (water = 1)	1.09 at 20 °C Unspecified
Water solubility	Dispersible
Partition coefficient: noctanol/Water	No data available
Auto-ignition temperature:	EC Method A15 none below 400 degC
Dynamic Viscosity	134.6 mPa.s at 20 °C
Kinematic Viscosity	No test data available
Explosive properties	No EEC A14
Oxidising properties	No

9.2 Other Information

Liquid Density	1.09 g/cm ³ at 20 °C Calculated.
Molecular weight	No data available
Surface tension	43 mN/m

9.2.1 Information with regard to physical hazard classes

Explosivity:	Not explosive
Oxidising properties:	No oxidising properties

9.2.2 Other safety characteristics

Other physico-chemical Properties:	No data available
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Section 10. STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical Stability

Thermally stable at recommended temperatures and pressures.

10.3 Possibility of hazardous reactions

Polymerisation will not occur.

10.4 Conditions to avoid

Active ingredient decomposes at elevated temperatures.

10.5 Incompatible material

None known.

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 monoxide. Carbon dioxide. Nitrogen oxides.

Section 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Results based on a similar composition

LD ₅₀ oral Rat:	> 5,000 mg/kg
LD ₅₀ dermal Rabbit:	> 5,000 mg/kg

LC50 inhalation Rat (4h)	> 5.0 mg/l
Skin corrosion/irritation: Eye irritation:	Prolonged contact may cause slight skin irritation with local redness. May cause slight eye irritation. Corneal injury is unlikely. May cause pain disproportionate to the level of irritation to eye tissues.
Respiratory or skin sensitisation:	Did not cause allergic skin reactions when tested in guinea pigs. For respiratory sensitisation: No relevant data found.
Mutagenicity:	For the active ingredient: In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.
Carcinogenicity:	For the active ingredient: Did not cause cancer in laboratory animals.
Teratogenicity:	For the active ingredient: Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.
Reproductive Toxicity:	For the active ingredient: In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.
Aspiration Hazard: STOT (Single Exposure):	Based on physical properties, not likely to be an aspiration hazard. This material is not an STOT-SE toxicant.
STOT (Repeated Exposure):	For the active ingredient: In animals, Spinosad has been shown to cause vacuolisation of cells in various tissues. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

11.2 Information on other hazards Endocrine disrupting properties:

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.

Section 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Results based on a similar composition

Acute toxicity to fish

LC50, Cyprinus carpio 96h	> 100 mg/l
LC50, Danio rerio (zebra fish), 96h	> 120 mg/l

Acute toxicity to aquatic invertebrates

EC50 Daphnia magna, 48h	19 mg/l, OECD Test Guideline 211 or Equivalent
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Acute toxicity to algae/aquatic plants

EbC50, Pseudokirchneriella, subcapitata (green algae), 72h	> 100 mg/l
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EbC50, diatom Navicula sp., 120h	0.667 mg/l
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EC50, diatom Navicula sp., 72h, Growth rate	0.86 mg/l, OECD Test Guideline 201
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Toxicity to Above Ground Organisms

LD50 oral, Apis mellifera (bees), 48h,	0.049micrograms/bee
LD50 contact, Apis mellifera (bees), 48h	0.05micrograms/bee

Toxicity to soil-dwelling organisms

LC50, Eisenia fetida (earthworms), 14 d,	> 458 mg/kg
LC50, Eisenia fetida (earthworms), 56 d,	> 291 mg/kg

12.2 Persistence and degradability

Biodegradability: Surface photodegradation is expected with exposure to sunlight. Material is not readily biodegradable according to OECD/EEC guidelines.

10-day Window: Fail

Biodegradation: < 1 %

Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

Stability in Water (1/2-life)

Hydrolysis, pH 5, Half-life Temperature 25 °C, Stable
Hydrolysis, pH 7, Half-life Temperature 25 °C, Stable
Hydrolysis, half-life, 0.84 - 0.96 d, pH 7
Hydrolysis, half-life, 200 - 259 d, pH 9, Half-life Temperature 25 °C

Propylene glycol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

10-day Window: Pass

Biodegradation: 81 %

Exposure time: 28 d

Method: OECD Test Guideline 301F or Equivalent

10-day Window: Not applicable

Biodegradation: 96 %

Exposure time: 64 d

Method: OECD Test Guideline 306 or Equivalent

12.3 Bioaccumulative potential

Spinosad

Bioaccumulation: For similar active ingredient. Spinosyn A. Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Partition coefficient: n-octanol/water(log Pow): 4.01

Bioconcentration factor (BCF): 114 Oncorhynchus mykiss (rainbow trout)

Propylene glycol

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

Partition coefficient: n-octanol/water(log Pow): -1.07 Measured

Bioconcentration factor (BCF): 0.09 Estimated.

12.4 Mobility in soil

Spinosad (a mixture of spinosyn A and spinosyn D in ratios between 95:5 to 50:50)

Spinosyn A.

Expected to be relatively immobile in soil (Koc > 5000).

Partition coefficient (Koc): 35024

Propylene glycol

Given its very low Henry's constant, volatilisation 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).

Partition coefficient (Koc): < 1 Estimated

12.5 Results of PBT and vPvB assessment

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

12.6 Endocrine disrupting properties

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.

12.7 Other adverse effects

No data available

Section 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal procedures: 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. The information presented below only applies to the material as supplied. Identification based on characteristic(s) or listing may not apply if the material has been used or is 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

Transport the product in accordance with the provisions of ADR for road, RID for rail, IMDG for the sea, and ICAO / IATA for air transport

14.1 UN Number

3082.

14.2 UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (SPINOSAD).

14.3 Transport hazard class(es)

9.

14.4 Packing group

III.

14.5 Environmental hazards

Not applicable.

14.6 Special precautions for user

EmS: F-A, S-F.

14.7 Transport in bulk according to Annex II of Marpol 73/78 and the IBC code

Consult IMO regulations before transporting ocean bulk.

Section 15. REGULATORY INFORMATION

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

REACH Regulation (EC) No 1907/2006

This product contains only components that have been either pre-registered, registered, are exempt from registration, are regarded as registered or are not subject to registration according to Regulation (EC) No. 1907/2006 (REACH). The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer's/user's responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

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

Listed in Regulation: ENVIRONMENTAL HAZARDS

Number in Regulation: E1

100 t

200 t

15.2 Chemical safety assessment

For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

Section 16. OTHER INFORMATION

Full list of relevant hazard and precautionary statements that were not given in full in sections 2 and 3.

H400 Very toxic to aquatic life
H410 Very toxic to aquatic life with long-lasting effects

The information presented in this document is accurate to the best of our knowledge at the date of its publication. However, the information given is designed only as a guide for the methods of handling, storage, use, transportation and disposal of the product and is not considered a warranty or quality specification. Life Scientific Limited cannot be held responsible for any loss or damage resulting from the handling, storage, use or disposal of the product. The information contained in this document relates only to this specific product.

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