

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

1.1 Product Identifier

Product Name: FLEXURE®
Product Code: 107-01
UFI Code: 4YMK-T2WY-P301-21Y2

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

Product Use: Fungicide

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

Acute toxicity	Category 4	H302
Skin irritation	Category 2	H315
Eye irritation	Category 2	H319
Acute toxicity	Category 4	H332
Specific target organ toxicity - Single exposure	Category 3	H335
Reproductive toxicity	Category 2	H361d
Specific target organ toxicity - Repeated exposure	Category 2	H373
Acute aquatic	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:

H302 Harmful if swallowed
H315 Causes skin irritation
H319 Causes serious eye irritation
H332 Harmful if inhaled
H335 May cause respiratory irritation
H361d Suspected of damaging the unborn child
H373 May cause damage to organs through prolonged or repeated exposure
H410 Very toxic to aquatic life with long lasting effects

Precautionary Phrases:

P102 Keep out of reach of children
P280 Wear protective gloves/protective clothing/eye protection/face protection
P312 Call a POISON CENTRE or doctor/physician if you feel unwell
P337+P313 If eye irritation persists: Get medical advice/attention
P391 Collect spillage
P501 Dispose of contents/container to a licensed hazardous waste disposal contractor or collection site except for triple-rinsed empty containers which can be disposed of as non-hazardous waste

Other Phrases:

EUH401 To avoid risks to human health and the environment, comply with the instructions for use
EUH208 Contains 2-[2-(1-chlorocyclopropyl)-2-hydroxy-3-phenylpropyl]-2,4-dihydro-3H-1,2,4-triazole-3-thione and Spiroxamine. May produce an allergic reaction
SP1 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

Special labelling of certain mixtures: To avoid risks to human health and environment comply with the instructions for use.

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)
Prothioconazole	178928-70-6	-	Aqua. Acute 1, H400 Aquatic Chronic 1, H410	16.3
Spiroxamine	118134-30-8	601-505-4	Acute Tox 4, H302 Acute Tox 4, H332 Acute Tox 4, H312 Skin Irrit. 2, H315 Skin sens. 1, H317 Repr. 2, H361d Aquatic Acute 1, H400 Aquatic Chronic 1, H410	30.6
N,N-Dimethyl decanamide	14433-76-2	238-405-1	Skin Irrit 2 H315 Eye Irrit 2 H319 STOT SE 3 H335 Aquatic Chronic 3 H412	>20

Further information

Prothioconazole	178928-70-6	M-Factor: 10 (Acute), 10 (chronic)
Spiroxamine	118134-30-8	M-Factor: 100 (Acute), 100 (chronic)

Section 4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice:	Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.
Inhalation:	Move to fresh air. Keep patient warm and at rest. Call a physician or poison control center immediately.
Skin contact:	Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. If symptoms persist, call a physician.
Eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.
Ingestion:	Do NOT induce vomiting. Rinse mouth. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

No known symptoms

4.3 Indication of any immediate medical attention and special treatment needed

Treatment:	Treat symptomatically. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. There is no specific antidote.
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Section 5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable:	High volume water jet

5.2 Special hazards arising from the substance or mixture

In the event of fire the following may be released: Hydrogen chloride (HCl), Hydrogen cyanide (hydrocyanic acid), Carbon monoxide (CO), Sulphur oxides, Nitrogen oxides (NOx)

5.3 Advice for firefighters

In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.

Further information: Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

Section 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.

6.2 Environmental precautions

Do not allow to get into surface water, drains and ground water. If spillage enters drains leading to sewage works inform local water company immediately. If spillage enters rivers or watercourses, inform the Environment Agency

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Clean contaminated floors and objects thoroughly, observing environmental regulations. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

Section 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice. Ensure adequate ventilation.

7.2 Conditions for safe storage, including any incompatibilities

Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in a place accessible by authorized persons only. Protect from freezing. Keep away from direct sunlight.

7.3 Specific end use(s)

Refer to the label and/or leaflet.

Section 8. EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 Control parameters

Component	CAS number	Control parameters	Source
Prothioconazole	178928-70-6	1.4 mg/m ³	Supplier
Spiroxamine	118134-30-8	0.6 mg/ m ³	Supplier

8.2 Exposure controls

Individual protection measures, such as personal protective equipment:

Use personal protective equipment that is clean and properly maintained. Store personal protective equipment in a clean place, away from the work area.

When using, do not eat, drink or smoke. Remove and wash contaminated clothing before reuse. Ensure adequate ventilation, especially in confined areas.

Eye / face protection:

Avoid contact with eyes. Use safety eyewear designed to protect against liquid splashes. It is necessary to wear safety goggles in accordance with standard EN166.

Protection of hands:

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

Material Nitrile rubber
Rate of permeability > 480 min
Glove thickness > 0.4 mm
Protective index Class 6
Directive Protective gloves complying with EN 374.

Body protection:

Wear standard coveralls and Category 3 Type 6 suit. Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.

If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.

Respiratory protection:

Wear respirator with an organic vapours and gas filter mask (protection factor 10) conforming to EN140 type A or equivalent. Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance

Form: Liquid, slightly turbid
Colour: golden brown
Odour: Aromatic

Chemical properties

pH: 6.0 - 8.0 at (1%, 23°C)
Melting point: 140.3 °C based on Prothioconazole
-170 °C based on Spiroxamine
Boiling point/boiling range:
Flash point: 139 °C
Evaporation rate: No data available
Ignition temperature: 315 °C
Upper/lower flammability or explosive limits: As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Vapour pressure: No data available
Vapour density (air): Not applicable
Density : 0.98 g/cm³ at 20 °C
Solubility(ies): Water Dispersible
Partition coefficient: n-octanol/water: Prothioconazole: log Pow: 3.82 at 20 °C at pH 7
Spiroxamine: log Pow: 2.8 - 3.0 at 20 °C at pH 7

The results above are based on a similar formulation.

9.2 Other Information

Explosivity: Not explosive
Oxidising properties: No oxidizing properties

Section 10. STABILITY AND REACTIVITY

10.1 Reactivity

Stable under normal conditions

10.2 Chemical Stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions when stored and handled according to prescribed instructions.

10.4 Conditions to avoid

Extremes of temperature and direct sunlight

10.5 Incompatible material

Store only in the original container

10.6 Hazardous decomposition products

No decomposition products expected under normal conditions of use.

Section 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Oral Toxicity LD50 Rat:	> 500- > 1000 mg/kg
Acute Dermal Toxicity LD50 Rat:	> 4000 mg/kg
Acute inhalation Toxicity LC50 Rat:	Irritation to respiratory system (exposure time 4 hours, ca. 2.212 mg/L)
Eye Irritation, Rabbit:	Irritating to eyes
Skin Irritation, Rabbit:	Irritating to skin
Sensitisation, Guinea pig:	Not sensitising

Assessment STOT Specific target organ toxicity – repeated exposure

Prothioconazole did not cause specific target organ toxicity in experimental animal studies.

Spiroxamine caused specific target organ toxicity in experimental animal studies in dogs in the following organ(s):
Eyes.

N,N-Dimethyldecanamide did not cause specific target organ toxicity in experimental animal studies.

Assessment mutagenicity

Prothioconazole was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Spiroxamine was not mutagenic or genotoxic in a battery of in vitro and in vivo tests

N,N-Dimethyldecanamide was not genotoxic in a battery of in vitro tests.

Assessment carcinogenicity

Prothioconazole was not carcinogenic in lifetime feeding studies in rats and mice.

Spiroxamine was not carcinogenic in lifetime feeding studies in rats and mice

N,N-Dimethyldecanamide is not considered carcinogenic.

Assessment toxicity to reproduction

Prothioconazole caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Prothioconazole is related to parental toxicity.

Spiroxamine caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Spiroxamine is related to parental toxicity.

N,N-Dimethyldecanamide is not considered a reproductive toxicant at non-maternally toxic dose levels

Assessment developmental toxicity

Prothioconazole caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Prothioconazole are related to maternal toxicity.

Spiroxamine caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Spiroxamine are related to maternal toxicity

N,N-Dimethyldecanamide did not cause developmental toxicity in rats and rabbits.

The results above are based on a similar formulation.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : 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

LC ₅₀ Rainbow trout (96 h):	6.57 mg/L
EC ₅₀ Daphnia magna (48 h):	6.3 mg/L
IC ₅₀ Green algae (72 h):	0.1 mg/L

ErC₅₀ *Skeletonema costatum* (72h): 0.03278 mg/l- relates to prothioconazole

12.2 Persistence and degradability

Biodegradability: Prothioconazole is not readily biodegradable.
N,N-Dimethyldecanamide rapidly biodegradable.
Spiroxamine is not readily biodegradable.

Koc: Prothioconazole: Koc:1765
Spiroxamine: Koc: 2415

12.3 Bioaccumulative potential

Prothioconazole, does not bioaccumulate.
N,N-Dimethyldecanamide does not bioaccumulate.
Spiroxamine does not bioaccumulate.

12.4 Mobility in soil

Mobility: Prothioconazole has slight mobility in soils.
N,N-Dimethyldecanamide has slight mobility in soils.
Spiroxamine: Slightly mobile in soils.

12.5 Results of PBT and vPvB assessment

Prothioconazole: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

N,N-Dimethyldecanamide: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

Spiroxamine: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

12.6 Endocrine disrupting properties

Product:

Assessment: 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

Do not discharge into drains or rivers. Waste management is performed without endangering human health and without harming the environment, and in particular without risk to water, air, soil, fauna and flora.
Recycle or dispose of in accordance with current legislation, preferably via a certified collector or company.
Do not contaminate the ground or water with waste; do not dispose of waste into the environment.

Contaminated packaging: Empty container completely, rinse three times. Keep the label on the recipient. Follow advice on product label.

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., (SPIROXAMINE, PROTHIOCONAZOLE SOLUTION).

14.3 Transport hazard class(es)

9.

14.4 Packing group

III.

14.5 Environmental hazards

Dangerous for the environment
Emergency action code: 3Z

14.6 Special precautions for user

See sections 6-8 of this Safety Data Sheet

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

No transport in bulk according to the IBC Code.

Section 15. REGULATORY INFORMATION

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

To avoid risks to human health and the environment, comply with the instructions for use.

15.2 Chemical safety assessment

None

Section 16. OTHER INFORMATION

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

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes severe eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H361d	Suspected of damaging the unborn child
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic organisms.
H410	Very toxic to aquatic organisms with long lasting effects.
H412	Harmful 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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