2542/2021

Medallion® TL

Fungicide

syngenta®

GROUP 12 FUNGICIDE F

Product registration number: MAPP 15287

MEDALLION® TL is a suspension concentrate formulation containing 125 g/l fludioxonil.

A broad spectrum foliar fungicide with protectant and contact properties for control of Fusarium patch (*Microdochium nivale*), useful levels of control of Leaf Spot (*Drechslera spp.*) and reduction of Anthracnose (*Colletotrichum graminicola*) on managed amenity turf and amenity grassland.

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

Syngenta UK Limited
CPC4 Capital Park, Fulbourn, Cambridge CB21 5XE
Tel: Cambridge (01223) 883400

In case of toxic or transport emergency ring +44 (0)1484 538444 any time

SHAKE WELL BEFORE USE.
PROTECT FROM FROST.

The Voluntary Initiative

This product label is compliant with the CPA Voluntary Initiative (VI) guidance.

1 Litre

L1090425 GBRI/07A PPE 4164337

MEDALLION® TL
A suspension concentrate formulation containing 125 g/l fludioxonil.

Warning
Very toxic to aquatic life with long lasting effects.
Keep out of reach of children.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
Collect spillage.
Dispose of contents/container to a licensed hazardouswaste disposal contractor or collection site except for empty triple rinsed clean containers which can be disposed of as non-hazardous waste.
Contains 1,2-benzisothiazol-3-one. May produce an allergic reaction.
To avoid risks to human health and the environment comply with the instructions for use.

MAPP 15287

IMPORTANT INFORMATION
FOR USE ONLY AS A HORTICULTURAL FUNGICIDE
For use on:

Crops	Maximum individual dose (product/ha)	Maximum number of treatments
Managed amenity turf and amenity grassland	3 litres	4 per year

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.

SAFETY PRECAUTIONS

(a) Operator Protection
WASH HANDS AND EXPOSED SKIN before eating and drinking and after work.

(b) Environmental protection
To protect aquatic organisms, respect an unsprayed buffer zone to surface water bodies in line with LERAP requirements.

LERAP B

DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5 m of the top of the bank of a static or flowing waterbody, unless a Local Environmental Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 1 m of the top of a ditch which is dry at the time of application. DO NOT ALLOW DIRECT SPRAY from hand-held sprayers to fall within 1 m of the top of the bank of a static or flowing water body. Aim spray away from water.

This product qualifies for inclusion within the Local Environmental Risk Assessment for Pesticides (LERAP) Scheme. Before each spraying operation from a horizontal boom sprayer or broadcast air assisted sprayer either a LERAP must be carried out in accordance with CRD published guidance or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for inspection for three years.

Do not contaminate water with the product or its container. Do not clean application equipment near surface water. Avoid contamination via drains from yards and roads.

(c) Storage and disposal
KEEP IN ORIGINAL CONTAINER, tightly closed in a safe place.
RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinsing three times. Add washings to sprayer at time of filling and dispose of safely.
DO NOT RE-USE CONTAINER for any other purpose.

Product names marked ® or ™ , the ALLIANCE FRAME the SYNGENTA Logo and the PURPOSE ICON are Trademarks of a Syngenta Group Company

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L1090425 GBRI/07A PPE 4164337

This leaflet is part of the approved Product Label.

DIRECTIONS FOR USE
IMPORTANT: This information is approved as part of the Product Label. All instructions within this section must be carefully read in order to obtain safe and successful use of this product.

GENERAL INFORMATION
MEDALLION® TL is a suspension concentrate formulation containing 125 g/l fludioxonil. Fludioxonil is a long lasting contact fungicide belonging to the phenylpyrrole chemistry group, that provides broad-spectrum activity against a wide range of turf diseases. It is believed to inhibit transport-associated phosphorylation of glucose, which subsequently results in the inhibition of fungal mycelial growth.

RESTRICTIONS
Prevent spray drift on to surrounding areas Do not apply when ground is frozen or during drought.
DO NOT apply to turf under heat or moisture stress.

DISEASES CONTROLLED
MEDALLION TL is a broad spectrum foliar fungicide with protectant and contact properties for the control of the following diseases in managed amenity turf and amenity grassland:

- Fusarium Patch (*Microdochium nivale*)
- Leaf Spot (*Drechslera spp.*)* [useful levels of control]
- Anthracnose (*Colletotrichum graminicola*) [reduction]

* Qualified minor use recommendation made on the basis of limited data.

For optimum turf quality and disease control, use MEDALLION TL in conjunction with turf management practices that promote good plant health.

Correct identification of the disease(s) is essential in selecting the most appropriate control measures.

CROP SPECIFIC INFORMATION
Begin applications when conditions are favourable for disease infection, at the very beginning of disease symptom expression.

Rates of Use
Apply 3 litres MEDALLION TL per hectare in 125-500 litres water per hectare.
For spot treatments, use 30 ml of MEDALLION TL in 1.25-5 litres of water to treat an area of 100 square metres.

Timing
Apply in a preventative spray programme, starting when conditions become favourable for disease development. Apply 3 litres MEDALLION TL per hectare with a maximum number of 4 sprays per year.
A minimum interval of 14 days should be observed between applications.

RESISTANCE MANAGEMENT
Some turf disease pathogens are known to have developed resistance to products used repeatedly for their control. In order to minimise the likelihood of the development of resistance, it is recommended that MEDALLION TL should be used in a programme with products of different chemical groups.

Use MEDALLION TL in a disease control programme, alternating treatments with other fungicides having different modes of action.

MEDALLION TL contains fludioxonil (a phenylpyrrole) and applications should be made in accordance with FRAC guidelines.

Apply MEDALLION TL at full recommended rates. Utilize management practices which encourage healthy turf and reduce turf stress.

APPLICATION

VOLUME OF WATER AND SPRAYING
MEDALLION TL may be applied through all types of spray equipment commonly used for making ground applications. Application equipment should be calibrated before use.
MEDALLION TL is recommended to be applied in 125-500 litres water/ha with all application methods.

MIXING AND SPRAYING
Tractor-mounted/trailed sprayers: Make sure the sprayer is clean and set to give an even application at the correct volume and an even deposit. Half fill the spray tank with the required volume of clean water and start agitation. Add the required amount of MEDALLION TL to the spray tank. Agitate the mixture thoroughly before use and continue agitation during spraying.

Thoroughly wash all spray equipment with water immediately after use.

Hand-held and knapsack sprayers: Half fill the spray tank with clean water and add the required quantity of MEDALLION TL to the tank. Complete filling, mix thoroughly and use immediately.

Thoroughly wash all spraying equipment immediately after use.

Wash out containers thoroughly, preferably using an integrated pressure rinsing device, or manually rinse three times. Add washings to the sprayer at the time of filling. Complete filling to the required volume and continue to agitate throughout the spraying operation.

Do not leave the spray liquid in the sprayer for long periods (such as during meal breaks or overnight). Make up only the amount of spray required for immediate use.

For further information please see www.greencast.co.uk or www.greencast.ie

COMPANY ADVISORY INFORMATION
1. Some diseases can quickly damage turf. Treatment at a late stage of disease development will be more difficult and can leave bare soil patches needing renovation.
2. Use preventative sprays, especially against diseases which occur in winter and early spring.
3. If diseases recur regularly, check management practices, especially fertilizer treatment as this can affect disease occurrence if either in excess or deficient.

Good Field Practice
As part of our Product Stewardship policy, Syngenta Crop Protection recommend the following precautions should also be observed:

- Wear appropriate clothing - coveralls and protective gloves, when handling the concentrate.

This product is to be used only in accordance with the recommendations and instructions given on the labels provided with this pack. Use in any other circumstances is entirely at user's risk.

MEDALLION® TL is a trade mark of a Syngenta Group Company.

SAFETY PRECAUTIONS

(a) Operator Protection

WASH HANDS AND EXPOSED SKIN before eating and drinking and after work.

(b) Environmental protection

To protect aquatic organisms, respect an unsprayed buffer zone to surface water bodies in line with LERAP requirements.
DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5 m of the top of the bank of a static or flowing waterbody, unless a Local Environmental Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 1 m of the top of a ditch which is dry at the time of application. DO NOT ALLOW DIRECT SPRAY from hand-held sprayers to fall within 1 m of the top of the bank of a static or flowing water body. Aim spray away from water.
This product qualifies for inclusion within the Local Environmental Risk Assessment for Pesticides (LERAP) Scheme. Before each spraying operation from a horizontal boom sprayer or broadcast air assisted sprayer either a LERAP must be carried out in accordance with CRD published guidance or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for inspection for three years.
Do not contaminate water with the product or its container. Do not clean application equipment near surface water. Avoid contamination via drains from yards and roads.

(c) Storage and disposal

KEEP IN ORIGINAL CONTAINER, tightly closed in a safe place.
RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinsing three times. Add washings to sprayer at time of filling and dispose of safely.
DO NOT RE-USE CONTAINER for any other purpose.

Section 6 of the Health and Safety at Work Act
Additional Product Safety Information

(This section does not form part of the product label under the Plant Protection Products Regulations 1995.)

The product label provides information on a specific pesticidal use of the product; do not use otherwise, unless you have assessed any potential hazard involved, the safety measures required and that the particular use has 'extensions of use' approval or is otherwise permitted under the Plant Protection Product Regulations.

The information on this label is based on the best available information including data from test results.

Safety Data Sheet v8.0

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

1.1 Product identifier
Trade name : MEDALLION TL
Design code : A17856B
Product Registration Number : MAPP 15287

1.2 Relevant identified uses of the substance or mixture and uses advised against
Use of the Substance/Mixture: Fungicide
Recommended restrictions on use: professional use

1.3 Details of the supplier of the safety data sheet
Company : Syngenta UK Limited
CPC4, Capital Park, Fulbourn, Cambridge CB21 5XE, United Kingdom
Telephone : +44 (0) 1223 883400
Telefax : +44 (0) 1223 882195
E-mail address of person responsible for the SDS: customer.services@syngenta.com

1.4 Emergency telephone number
Emergency telephone number: +44 1484 538444

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification (REGULATION (EC) No 1272/2008)
Long-term (chronic) aquatic hazard, Category 1 - H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements
Labelling (REGULATION (EC) No 1272/2008)
Hazard pictograms :

Signal word: Warning
Hazard statements:
H410 Very toxic to aquatic life with long lasting effects.
Supplemental Hazard Statements:
EUH208 Contains 1,2-benzisothiazol-3-one. May produce an allergic reaction.
EUH401 To avoid risks to human health and the environment, comply with the instructions for use.
Precautionary statements:
P102 Keep out of reach of children.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P391 Collect spillage.
P501 Dispose of contents/container to a licensed hazardouswaste disposal contractor or collection site except for empty triple rinsed clean containers which can be disposed of as nonhazardous waste.

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.

Ecological information: 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.
Toxicological information: 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 3: Composition/information on ingredients
3.2 Mixtures
Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
fludioxonil (ISO)	131341-86-1 608-069-00-4	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 10	>= 10 - < 20
poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]--hydroxy-	99734-09-5	Aquatic Chronic 3; H412	>= 1 - < 2.5
bronopol (INN)	52-51-7 200-143-0 603-085-00-8	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H335 (Respiratory system) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 1	>= 0.025 - < 0.1
1,2-benzisothiazol-3(2H)-one	2634-33-5 220-120-9 613-088-00-6 01-2120761540-60	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 2; H411 M-Factor (Acute aquatic toxicity): 1 specific concentration limit Skin Sens. 1; H317 >= 0,05 %	>= 0.025 - < 0.05

For explanation of abbreviations see section 16.

SECTION 4: First aid measures
4.1 Description of first aid measures
General advice : Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.
If inhaled : Move the victim to fresh air. If breathing is irregular or stopped, administer artificial respiration. Keep patient warm and at rest. Call a physician or poison control centre immediately.
In case of skin contact : Take off all contaminated clothing immediately. Wash off immediately with plenty of water. If skin irritation persists, call a physician. Wash contaminated clothing before re-use.
In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.
If swallowed : If swallowed, seek medical advice immediately and show this container or label. Do NOT induce vomiting.
4.2 Most important symptoms and effects, both acute and delayed
Symptoms : Nonspecific. No symptoms known or expected.
4.3 Indication of any immediate medical attention and special treatment needed
Treatment : There is no specific antidote available. Treat symptomatically.

SECTION 5: Firefighting measures
5.1 Extinguishing media
Suitable extinguishing media : Extinguishing media - small fires: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media - large fires: Alcohol-resistant foam or Water spray
Unsuitable extinguishing media: Do not use a solid water stream as it may scatter and spread fire.
5.2 Special hazards arising from the substance or mixture
Specific hazards during firefighting: As the product contains combustible organic components, fire
will produce dense black smoke containing hazardous products of combustion (see section 10). Exposure to decomposition products may be a hazard to health.
5.3 Advice for firefighters
Special protective equipment for firefighters: Wear full protective clothing and 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
Personal precautions : Refer to protective measures listed in sections 7 and 8.
6.2 Environmental precautions
Environmental precautions : Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform
respective authorities.
6.3 Methods and material for containment and cleaning up
Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Clean contaminated surface thoroughly. Clean with detergents. Avoid solvents. Retain and dispose of contaminated wash water.
6.4 Reference to other sections
For disposal considerations see section 13., Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage
7.1 Precautions for safe handling
Advice on safe handling : No special protective measures against fire required. Avoid contact with skin and eyes. When using do not eat, drink or smoke. For personal protection see section 8.
7.2 Conditions for safe storage, including any incompatibilities
Requirements for storage areas and containers: No special storage conditions required. Keep containers
tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.
7.3 Specific end use(s)
Specific use(s) : For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

SECTION 8: Exposure controls/personal protection
8.1 Control parameters
Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
fludioxonil (ISO)	131341-86-1	TWA	5 mg/m³	Syngenta
propane-1,2-diol	57-55-6	TWA (particles)	10 mg/m³	GB EH40
		TWA (Total vapour and particles)	150 ppm 474 mg/m³	GB EH40

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
propane-1,2-diol	Workers	Inhalation	Long-term systemic effects	168 mg/m³
	Consumers	Inhalation	Long-term local effects	10 mg/m³
	Consumers	Inhalation	Long-term systemic effects	30 mg/m³
	Workers	Inhalation	Long-term local effects	10 mg/m³
bronopol (INN)	Workers	Inhalation	Long-term systemic effects	3.5 mg/m³
	Workers	Inhalation	Acute systemic effects	10.5 mg/m³
	Workers	Inhalation	Long-term local effects	2.5 mg/m³
	Workers	Inhalation	Acute local effects	2.5 mg/m³
	Workers	Dermal	Long-term systemic effects	2 mg/kg
	Workers	Dermal	Acute systemic effects	6 mg/kg
	Workers	Dermal	Long-term local effects	0.008 mg/cm²
	Workers	Dermal	Acute local effects	0.008 mg/cm²
	Consumers	Inhalation	Long-term systemic effects	0.6 mg/m³
	Consumers	Inhalation	Acute systemic effects	1.8 mg/m³
	Consumers	Inhalation	Long-term local effects	0.6 mg/m³
	Consumers	Inhalation	Acute local effects	0.6 mg/m³
	Consumers	Dermal	Long-term systemic effects	0.7 mg/kg
	Consumers	Dermal	Acute systemic effects	2.1 mg/kg
	Consumers	Dermal	Long-term local effects	0.004 mg/cm²
	Consumers	Dermal	Acute local effects	0.004 mg/cm²
	Consumers	Oral	Long-term systemic effects	0.18 mg/kg
	Consumers	Oral	Acute systemic effects	0.5 mg/kg
1,2-benzisothiazol-3(2H)-one	Workers	Inhalation	Long-term systemic effects	6.81 mg/m³
	Workers	Dermal	Long-term systemic effects	0.966 mg/kg
	Consumers	Inhalation	Long-term systemic effects	1.2 mg/m³
	Consumers	Dermal	Long-term systemic effects	0.345 mg/kg

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

Substance name	Environmental Compartment	Value
propane-1,2-diol	Fresh water	260 mg/l
	Marine water	26 mg/l
	Intermittent use/release	183 mg/l
	Sewage treatment plant	20000 mg/l
	Marine sediment	57.2 mg/kg
	Fresh water sediment	572 mg/kg
	Soil	50 mg/kg
bronopol (INN)	Fresh water	0.01 mg/l
	Marine water	0.001 mg/l
	Freshwater - intermittent	0.003 mg/l
	Sewage treatment plant	0.43 mg/l
	Fresh water sediment	0.041 mg/kg
	Marine sediment	0.003 mg/kg
	Soil	0.5 mg/kg
1,2-benzisothiazol-3(2H)-one	Fresh water	0.00403 mg/l
	Marine water	0.000403 mg/l
	Sewage treatment plant	1.03 mg/l
	Fresh water sediment	0.0499 mg/kg
	Marine sediment	0.00499 mg/kg
	Freshwater - intermittent	0.0011 mg/l
	Marine water - intermittent	0.000110 mg/l
	Soil	3 mg/kg

8.2 Exposure controls
Engineering measures
Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated. The extent of these protection measures depends on the actual risks in use. Maintain air concentrations below occupational exposure standards. Where necessary, seek additional occupational hygiene advice.
Personal protective equipment
Eye protection : No special protective equipment required.
Hand protection
Remarks : No special protective equipment required.
Skin and body protection : No special protective equipment required.
Select skin and body protection based on the physical job requirements.
Respiratory protection : No personal respiratory protective equipment normally required.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
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.

SECTION 9: Physical and chemical properties
9.1 Information on basic physical and chemical properties
Physical state : suspension
Colour : beige grey to grey green
Odour : sweetish
Odour Threshold : No data available
Melting point/range : No data available
Boiling point/boiling range : No data available

Flammability : No data available
Upper explosion limit / Upper flammability limit: No data available
Lower explosion limit / Lower flammability limit: No data available
Flash point : Method: Pensky-Martens closed cup, does not flash
Auto-ignition temperature : 610 °C
Decomposition temperature: No data available
pH : 5 - 9, Concentration: 1 % w/v
Viscosity, dynamic : 77 - 233 mPa.s (20 °C), 64 - 196 mPa.s (40 °C)
Viscosity, kinematic : No data available
Water solubility : No data available
Solubility in other solvents : No data available
Partition coefficient: noctanol/ water: No data available
Vapour pressure : No data available
Density : 1.06 g/cm3 (20 °C)
Relative vapour density : No data available
Particle size : No data available

9.2 Other information

Explosives : Not explosive
Oxidizing properties : The substance or mixture is not classified as oxidizing.
Evaporation rate : No data available
Surface tension : 39.4 mN/m, 0.1 % w/v, 20 °C

SECTION 10: Stability and reactivity

10.1 Reactivity

None reasonably foreseeable.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : No decomposition if used as directed.

10.5 Incompatible materials

Materials to avoid : None known.

10.6 Hazardous decomposition products

Hazardous decomposition products : No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of exposure: Ingestion, Inhalation, Skin contact, Eye contact

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat, female): 5,000 mg/kg
Acute inhalation toxicity : LC50 (Rat, male and female): > 2.59 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg

Components:

fludioxonil (ISO):
Acute oral toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Acute inhalation toxicity : LC50 (Rat, male and female): > 2.6 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]- -hydroxy-:
Acute oral toxicity : LD50 Oral (Rat): 5,000 mg/kg

bronopol (INN):
Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.
Acute dermal toxicity : Assessment: The component/mixture is moderately toxic after single contact with skin.

1,2-benzisothiazol-3(2H)-one:
Acute oral toxicity : LD50 (Rat, male): 670 mg/kg
Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation **Product:** Species : Rabbit Result : No skin irritation **Components:** **fludioxonil (ISO):** Species : Rabbit Result : No skin irritation **bronopol (INN):** Result : Irritating to skin. **1,2-benzisothiazol-3(2H)-one:** Species : Rabbit Result : Mild skin irritation	**Serious eye damage/eye irritation** **Product:** Species : Rabbit Result : No eye irritation **Components:** **fludioxonil (ISO):** Species : Rabbit Result : No eye irritation **bronopol (INN):** Result : Risk of serious damage to eyes. **1,2-benzisothiazol-3(2H)-one:** Species : Rabbit Result : Risk of serious damage to eyes.
Respiratory or skin sensitisation **Product:** Test Type : Buehler Test Species : Guinea pig Result : Did not cause sensitisation on laboratory animals. **Components:** **fludioxonil (ISO):** Species : Guinea pig Result : Did not cause sensitisation on laboratory animals. **1,2-benzisothiazol-3(2H)-one:** Result : Probability or evidence of skin sensitisation in humans	**Germ cell mutagenicity** **Components:** **fludioxonil (ISO):** Germ cell mutagenicity- Assessment: Animal testing did not show any mutagenic effects. **poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl) phenyl]- -hydroxy-:** Germ cell mutagenicity- Assessment: In vitro tests did not show mutagenic effects **1,2-benzisothiazol-3(2H)-one:** Germ cell mutagenicity- Assessment: Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity **Components:** **fludioxonil (ISO):** Carcinogenicity - Assessment: No evidence of carcinogenicity in animal studies. **Reproductive toxicity** **Components:** **fludioxonil (ISO):** Reproductive toxicity - Assessment: No toxicity to reproduction	**STOT - single exposure** **Components:** **bronopol (INN):** Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

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
Product:

Toxicity to fish :	LC50 (*Oncorhynchus mykiss* (rainbow trout)): 5.4 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates:	EC50 (*Daphnia magna* (Water flea)): 30 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants:	ErC50 (*Raphidocelis subcapitata* (freshwater green alga)): 5.4 mg/l Exposure time: 96 h NOEC (*Raphidocelis subcapitata* (freshwater green alga)): 1 mg/l End point: Growth rate Exposure time: 96 h EC10 (*Raphidocelis subcapitata* (freshwater green alga)): 2.9 mg/l End point: Growth rate Exposure time: 96 h
Components:	
fludioxonil (ISO):	
Toxicity to fish :	LC50 (*Oncorhynchus mykiss* (rainbow trout)): 0.23 mg/l Exposure time: 96 h LC50 (*Pimephales promelas* (fathead minnow)): 0.7 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates:	EC50 (*Daphnia magna* (Water flea)): 0.4 mg/l Exposure time: 48 h EC50 (*Americamysis*): 0.27 mg/l Exposure time: 96 h
Toxicity to algae/aquatic plants :	ErC50 (*Raphidocelis subcapitata* (freshwater green alga)): > 0.44 mg/l Exposure time: 96 h NOEC (*Raphidocelis subcapitata* (freshwater green alga)): 0.132 mg/l End point: Growth rate Exposure time: 96 h ErC50 (*Skeletonema costatum* (marine diatom)): 0.43 mg/l Exposure time: 96 h NOEC (*Skeletonema costatum* (marine diatom)): 0.14 mg/l End point: Growth rate Exposure time: 96 h
M-Factor (Acute aquatic toxicity):	1, M-Factor=1 used for transport classification
Toxicity to microorganisms :	EC50 (activated sludge): > 1,000 mg/l Exposure time: 3 h
Toxicity to fish (Chronic toxicity):	NOEC: 0.04 mg/l Exposure time: 28 d Species: *Oncorhynchus mykiss* (rainbow trout) NOEC: 0.018 mg/l Exposure time: 116 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):	Species: *Pimephales promelas* (fathead minnow) NOEC: 0.035 mg/l Exposure time: 21 d Species: *Daphnia magna* (Water flea) NOEC: 0.018 mg/l Exposure time: 28 d Species: *Americamysis*
M-Factor (Chronic aquatic toxicity):	10, M-Factor=1 used for transport classification
poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]- -hydroxy-:	
Toxicity to fish :	LC50 (*Danio rerio* (zebra fish)): 21 mg/l Exposure time: 96 h
Ecotoxicology Assessment Chronic aquatic toxicity :	Harmful to aquatic life with long lasting effects.
bronopol (INN):	
Toxicity to algae/aquatic plants:	NOEC (algae): 0.0025 mg/l Exposure time: 72 h EC50 (algae): 0.068 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity):	10
M-Factor (Chronic aquatic toxicity):	1
1,2-benzisothiazol-3(2H)-one:	
Toxicity to fish :	LC50 (*Oncorhynchus mykiss* (rainbow trout)): 2.18 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates:	EC50 (*Daphnia magna* (Water flea)): 2.94 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants:	ErC50 (*Raphidocelis subcapitata* (freshwater green alga)): 0.15 mg/l Exposure time: 72 h EC10 (*Raphidocelis subcapitata* (freshwater green alga)): 0.04 mg/l End point: Growth rate Exposure time: 72 h
M-Factor (Acute aquatic toxicity):	1

Toxicity to fish (Chronic toxicity): NOEC: 0.3 mg/l
Exposure time: 28 d
Species: *Oncorhynchus mykiss* (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): NOEC: 1.7 mg/l
Exposure time: 21 d
Species: *Daphnia* (water flea)

12.2 Persistence and degradability

Components:

fludioxonil (ISO):

Biodegradability : Result: Not readily biodegradable.
Stability in water : Degradation half life: 450 - 700 d
Remarks: Persistent in water.

bronopol (INN):

Biodegradability : Result: Readily biodegradable.

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

Biodegradability : Result: rapidly degradable

12.3 Bioaccumulative potential

Components:

fludioxonil (ISO):

Bioaccumulation : Remarks: Does not bioaccumulate.
Partition coefficient: noctanol/ water: log Pow: 4.12 (25 °C)

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

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

12.4 Mobility in soil

Components:

fludioxonil (ISO):

Distribution among environmental compartments: Remarks: immobile
Stability in soil : Dissipation time: 14 d
Percentage dissipation: 50 % (DT50)
Remarks: Product is not persistent.

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:

fludioxonil (ISO):

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).

poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]- -hydroxy-:

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).

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

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).

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

Product: Do not contaminate ponds, waterways or ditches with chemical or used container. Do not dispose of waste into sewer. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations.
Contaminated packaging : Empty remaining contents. Triple rinse containers. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.
Waste Code: uncleaned packagings. 15 01 10, packaging containing residues of or contaminated by hazardous substances.

SECTION 14: Transport information

14.1 UN number or ID number

ADN	ADR	RID	IMDG	IATA
UN 3082	UN 3082	UN 3082	UN 3082	UN 3082

14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUDIOXONIL)
ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUDIOXONIL)
RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUDIOXONIL)
IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUDIOXONIL)
IATA : Environmentally hazardous substance, liquid, n.o.s. (FLUDIOXONIL)

14.3 Transport hazard class(es)

ADN	ADR	RID	IMDG	IATA
9	9	9	9	9

14.4 Packing group

ADN	ADR	RID
Packing group : III Classification Code: M6 Hazard Identification Number: 90 Labels : 9	Packing group : III Classification Code : M6 Hazard Identification Number: 90 Labels : 9 Tunnel restriction code : (-)	Packing group : III Classification Code : M6 Hazard Identification Number : 90 Labels : 9
IMDG	**IATA (Cargo)**	**IATA (Passenger)**
Packing group : III Labels : 9 EmS Code : F-A, S-F	Packing instruction (cargo aircraft): 964 Packing instruction (LQ) : Y964 Packing group : III Labels : Miscellaneous	Packing instruction (passenger aircraft): 964 Packing instruction (LQ) : Y964 Packing group : III Labels : Miscellaneous

14.5 Environmental hazards

ADN	ADR	RID
Environmentally hazardous : yes	Environmentally hazardous : yes	Environmentally hazardous : yes
IMDG	**IATA (Passenger)**	**IATA (Cargo)**
Marine pollutant : yes	Environmentally hazardous : yes	Environmentally hazardous : yes

14.6 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.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).: Not applicable

REACH - List of substances subject to authorisation (Annex XIV): Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer: Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast): Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals: Not applicable

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

		Quantity 1	Quantity 2
E1	ENVIRONMENTAL HAZARDS	100 t	200 t

Other regulations:

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work. Use plant protection products safely. Always read the label and product information before use.

15.2 Chemical safety assessment

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

SECTION 16: Other information

Full text of H-Statements

H302 : Harmful if swallowed.
H312 : Harmful in contact with skin.
H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H335 : May cause respiratory irritation.
H400 : Very toxic to aquatic life
H410 : Very toxic to aquatic life with long lasting effects.
H411 : 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
Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation
STOT SE : Specific target organ toxicity - single exposure
GB EH40 : UK. EH40 WEL - Workplace Exposure Limits
GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - 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 - International 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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:		Classification procedure:
Aquatic Chronic 1	H410	Calculation method

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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