



GROUP 12 FUNGICIDE



Product registration number: MAPP 16725

A flowable concentrate for seed treatment containing 480 g/litre fludioxonil.

MAXIM® 480FS is a seed treatment for the control of *Leptosphaeria maculans* in cabbage, *Alternaria* spp. in carrot, *Botrytis allii* in bulb onion, moderate control of *Colletotrichum dematium* in spinach, control of *Didymella bryoniae* and *Fusarium oxysporum* in melons, watermelons, pumpkin (winter squash), summer squash (edible peel) and cucumbers. Also control of *Fusarium oxysporum* in tomatoes, aubergines and peppers and control of *Rhizoctonia solani* in lettuce, endive, escarole and Belgium endive (witloof chicory).

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.

PROTECT FROM FROST
SHAKE WELL BEFORE USE

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12 x 1 litres

12 x 1 litres

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



MAXIM® 480 FS

A flowable concentrate for seed treatment containing 480 g/litre 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 hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

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

Contains 1,2-benzisothiazol-3-one. May produce an allergic reaction.

MAPP 16725



Maxim[®] 480 FS

syngenta.

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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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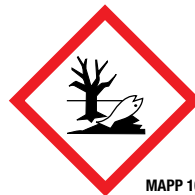
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Contains 1,2-benzisothiazol-3-one. May produce an allergic reaction.



MAPP 16725

IMPORTANT INFORMATION: FOR USE ONLY AS A PROFESSIONAL SEED TREATMENT

For use on:

Crop	Maximum individual dose (Product)	Maximum Number of Treatments	Latest Time of Application
Bulb onion (seed), cabbage (seed), carrot (seed), spinach (seed), Aubergine (seed), courgette and summer squash (seed), cucumber (seed), lettuce (seed), melon (seed), pepper and chili (seed), tomato (seed), watermelon (seed), winter squash and pumpkin (seed) and Endive (seed)	100 ml/100 kg seeds	One per batch	Pre-drilling

Other specific restrictions:

- Must only to be applied to spinach seed that will be precision drilled.
- This product must only be applied to endive seed that will be precision drilled whether the crop is grown as endive, escarole or chicory-witloof (chicory/ Belgian endive).
- Treated seed of Aubergine, courgette and summer squash, cucumber, endive, lettuce, melon, tomato, watermelon, winter squash and pumpkin must only be sown under 'permanent protection' situations which provide full enclosure (including continuous top and side barriers down to below ground level) and which are present and maintained over a number of years.
- Reasonable precautions must be taken to prevent access of birds, wild mammals and honey-bees to treated crops sown under permanent protection with full enclosure.
- A minimum of 21 days must elapse between sowing and transplanting crops outdoors following sowing under permanent protection with full enclosure.

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

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) AND

SUITABLE PROTECTIVE GLOVES when handling the concentrate, or contaminated surfaces or treated seed.

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) when bagging treated seed.

However engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.

KEEP OUT OF REACH OF CHILDREN

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS.

WHEN USING, DO NOT EAT, DRINK OR SMOKE.

(b) Environmental Protection

TO PROTECT BIRDS TREATED SEED SHOULD NOT BE LEFT ON THE SOIL SURFACE. BURY OR REMOVE SPILLAGES.

Do not contaminate water with the product and its container.

Do not clean application equipment near surface water. Avoid contamination via drains from farmyards and roads.

(c) Storage and disposal

EMPTY CONTAINER COMPLETELY and dispose of safely.

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 purpose.

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.

Resistance Management

For advice on resistance management refer to the latest Fungicide Resistance Action Group (FRAG) guidelines.

Since the occurrence of resistance cannot be forecast, neither Syngenta UK Limited nor its distributors can accept responsibility for any loss or damage to crops caused by the failure of MAXIM 480FS to control resistant strains. For crops with multiple crop cycles per year (lettuce etc) alternation with seed treatments based on other actives against soil-borne pathogens is advisable.

DISEASES CONTROLLED

MAXIM 480FS is a fungicidal seed treatment for the control of *Leptosphaeria maculans* in cabbage, *Alternaria spp.* in carrot, *Botrytis allii* in bulb onion and moderate control of *Colletotrichum dematium* in spinach. Control of *Didymella bryoniae* and *Fusarium oxysporum* in melons, watermelons, pumpkin (winter squash), summer squash (edible peel) and cucumbers. Also control of *Fusarium oxysporum* in tomatoes, aubergines and peppers and control of *Rhizoctoni solani* in lettuce, endive, escarole and Belgium endive (witloof chicory).

CROP SPECIFIC INFORMATION

Crops

For use on all varieties of cabbage, carrot, bulb onion, spinach melons, watermelons, pumpkin (winter squash), summer squash (edible peel), cucumbers, tomatoes, aubergines, peppers, lettuce, endive, escarole and Belgium endive (witloof chicory).

Timing

Before drilling

Rates of Use

Apply MAXIM 480FS at 100 ml per 100 kg seed.

MIXING AND APPLICATION

MAXIM 480FS should be applied through continuous flow or batch seed treaters. Adequate seed coverage should be obtained if MAXIM 480FS is added during the mixing of the seeds. Calibration of the dose rates needs to be done before use. The method depends on the equipment used. Consult the manual for the machine or seek further advice from Syngenta. The treatment equipment used should be a closed system in order to minimise the risk of contact with the product. Safety precautions should be followed throughout.

MAXIM 480FS is usually applied during the process of pelleting vegetable seeds. Pelleting requires specialist equipment. If necessary Syngenta UK Limited can be consulted for advice on application during the pelleting process.

Mixing Procedure

1. Calculate the quantity of seeds to be treated.
2. Calculate the dose rate of product to be applied
3. Prepare the mixture. It is possible to use a mixture of 50% water to 50% product but this also depends on the application machinery being used. The mixture quantity to be applied needs to be sufficient in order to have a good loading of the seeds.

4. Ensure that there is good agitation to keep the product evenly suspended.
5. Ensure that the application equipment is properly calibrated for the seed to be treated.
6. Apply the product. Do not leave the mixed slurry for any period without agitation.

Calibrate the application equipment before use. For further advice please contact Syngenta UK Ltd.

Seed Quality

Do not use MAXIM 480FS on sprouted, cracked or damaged seed. Use only good quality seed tested for viability using a suitable germination test before treatment.

Storage of Treated Seed

Seed should be stored in a cool, dry, ventilated building.

Treated seed may be stored up to 6 months following application of MAXIM 480FS providing the advice above regarding storage conditions is adhered to.

Seedbed Preparation and Drilling

Drilling equipment should be calibrated with seed treated with MAXIM 480FS before use. Check drill calibration before drilling for each batch of seed to ensure an accurate drilling rate.

MAXIM 480FS is not known to have any adverse effect on seed germination or crop emergence but poor seed quality or seedbed conditions (waterlogged, capped, dry, fluffy or cloddy seedbeds) may result in delayed emergence and/or poor establishment.

Seed Spillages

In case of seed spillage, clean up as much as possible into the related seed sack and re-use the clean seed. Bury the remainder completely.

After Use

Dispose of product concentrate, empty containers and contaminated seed bags according to the "Code of Practice for the Safe Use Of Pesticides on Farms and Holdings" available from HMSO. Do not re-use containers for any purpose.

Safe Handling of Product and Treated Seed

Avoid skin contact with product, treated seed and dust, throughout all operations in the treatment plant. Launder coveralls daily.

SEED BAG LABEL TEXT

This seed has been treated with MAXIM 480FS

MAXIM 480FS is a fungicidal seed treatment for the control of *Leptosphaeria maculans* in cabbage, *Alternaria spp.* in carrot, *Botrytis allii* in bulb onion and moderate control of *Colletotrichum dematium* in spinach. Control of *Didymella bryoniae* and *Fusarium oxysporum* in melons, watermelons, pumpkin (winter squash), summer squash (edible peel) and cucumbers. Also control of *Fusarium oxysporum* in tomatoes, aubergines and peppers and control of *Rhizoctoni solani* in lettuce, endive, escarole and Belgium endive (witloof chicory).

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SAFETY PRECAUTIONS

WEAR SUITABLE PROTECTIVE GLOVES when handling treated seed.
BURY OR REMOVE SPILLAGES.
TO PROTECT BIRDS/WILD MAMMALS, treated seed should not be left on the soil surface. Bury or remove spillages.
DO NOT HANDLE seed unnecessarily.
DO NOT USE TREATED SEED as food or feed.
KEEP TREATED SEED SECURE from people, domestic stock/pets and wildlife at all times during storage and use.
DO NOT RE-USE SACKS OR CONTAINERS THAT HAVE BEEN USED FOR TREATED SEED for food or feed.
WASH HANDS AND EXPOSED SKIN before meals and after work.
DO NOT APPLY TREATED SEED FROM THE AIR.

RESISTANCE MANAGEMENT

For crops with multiple crop cycles per year (lettuce etc) alternation with seed treatments based on other actives against soil-borne pathogens is advisable.

RESTRICTIONS

This product must only be applied to endive seed that will be precision drilled whether the crop is grown as endive, escarole or chicory-witloof (chicory/ Belgian endive).

Treated seed of Aubergine, courgette and summer squash, cucumber, endive, lettuce, melon, tomato, water-melon, winter squash and pumpkin must only be sown under 'permanent protection' situations which provide full enclosure (including continuous top and side barriers down to below ground level) and which are present and maintained over a number of years.

Reasonable precautions must be taken to prevent access of birds, wild mammals and honey-bees to treated crops sown under permanent protection with full enclosure.

A minimum of 21 days must elapse between sowing and transplanting crops outdoors following sowing under permanent protection with full enclosure.

NOTES

- Safe Handling of treated seed
Avoid skin contact with treated seed and dust during all drilling operations. Launder coveralls daily.
- Drilling
Spinach seed treated with MAXIM 480FS must be precision drilled.
Check drill calibration before drilling for each batch of seed to ensure an accurate drilling rate. Avoid adverse seedbed conditions and deep or shallow drilling which may adversely affect crop establishment and reduce the level of pest control.
- Storage
Seed should be stored in a cool, dry, well ventilated building and be drilled as soon as possible after treatment. Drill within the season of treatment.
- Seed Spillages
In case of seed spillage, clean up as much as possible into the related seed sack and re-use the clean seed. Bury the remainder completely.

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SAFETY DATA SHEET - V5.1

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

1.1 Product Identifier

Trade name: MAXIM 480FS
Design code: A9459C
Product Registration number: MAPP 16725

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 Ltd
CPC4, Capital Park, Fulbourn, Cambridge, CB21 5XE
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 phone No.: +44 1484 538444

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Short-term (acute) aquatic hazard, Category 1 - H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard,, Category 1 - H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Hazard pictograms	
	
Signal Word	Warning
Hazard Statements	H410 Very toxic to aquatic life with long lasting effects.

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 hazardous-waste disposal contractor or collection site except for empty triple rinsed clean containers which can be disposed of as non-hazardous waste.

Additional Labelling

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

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

2.3 Other hazards

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

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 Acute1; H400 Aquatic Chronic1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 10	>= 30 - < 50
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
bronopol (INN)	52-51-7 200-143-0 603-085-00-8 01-2119980938-15	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H335 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 1	>= 0.025 - < 0.1

Chemical Name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Substances with a workplace exposure limit :			
propane-1,2,3-triol	56-81-5 200-289-5 01-2119471987-18	Aquatic Acute1; H400 Aquatic Chronic1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 10	>= 10 - < 20

For explanation of abbreviations see section 16.

4. FIRST-AID MEASURES

4.1 Description of first aid measures

General Advice: Have the product container, label or Material Safety Data Sheet with you when calling the Syngenta emergency number, a poison control centre 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.

5. FIRE-FIGHTING 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 fire-fighters

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.

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 materials 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

Refer to protective measures listed in sections 7 and 8. For disposal considerations see section 13.

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 uses

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

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
fludioxonil	131341-86-1	TWA	5 mg/m ³	SYNGENTA
propane-1,2,3-triol	56-81-5	TWA (Mist)	10 mg/m ³	GB EH40

Derived No Effect Level (DNEL):

Substance name	End Use	Exposure routes	Potential health effects	Value
propane-1,2,3-triol	Workers	Inhalation	Long-term local effects	220 mg/m ³
	Consumers	Inhalation	Long-term local effects	132 mg/m ³
1,2-benzisothiazol-3(2H)-one	Workers	Inhalation	Long-term systemic effects	6.81 mg/m ³
	Workers	Dermal	Long-term systemic effects	0.966 mg/kg
	Consumers	Inhalation	Long-term systemic effects	1.2 mg/m ³
bronopol (INN)	Consumers	Dermal	Long-term systemic effects	0.345 mg/kg
	Workers	Inhalation	Long-term systemic effects	3.5 mg/m ³
	Workers	Inhalation	Acute systemic effects	10.5 mg/m ³
	Workers	Inhalation	Long-term local effects	2.5 mg/m ³
	Workers	Inhalation	Acute local effects	2.5 mg/m ³
	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/cm ²
	Workers	Dermal	Acute local effects	0.008 mg/cm ²
	Consumers	Inhalation	Long-term systemic effects	0.6 mg/m ³
	Consumers	Inhalation	Acute systemic effects	1.8 mg/m ³
	Consumers	Inhalation	Long-term local effects	0.6 mg/m ³
Consumers	Inhalation	Acute local effects	0.6 mg/m ³	
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/cm ²	
Consumers	Dermal	Acute local effects	0.004 mg/cm ²	
Consumers	Oral	Long-term systemic effects	0.18 mg/kg	
Consumers	Oral	Acute systemic effects	0.5 mg/kg	

Predicted No Effect Concentration (PNEC):

Substance name	Environmental Compartment	Value
propane-1,2,3-triol	Sewage treatment plant	1000 mg/l
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

Substance name	Environmental Compartment	Value
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

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	liquid
Colour:	off-white to grey
Odour:	No data available
Odour Threshold:	No data available
pH:	5 - 9. Concentration: 1 % w/v
Melting point/range:	No data available
Boiling point/boiling range:	No data available
Flash point:	Method: Pensky-Martens closed cup, does not flash
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
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
Density:	1.219 g/cm ³ (25 °C)
Solubility in other solvents:	No data available
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	475 °C
Decomposition temperature:	No data available
Viscosity, dynamic:	61 - 154 mPa.s (40 °C). 82 - 191 mPa.s (20 °C)
Explosive properties:	Not explosive
Oxidizing properties:	The substance or mixture is not classified as oxidizing.

9.2 Other Information

Surface tension:	31.0 mN/m, 20 °C
Particle size :	No data available

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.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

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): > 2.64 mg/l Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity: LD50 (Rat, male and female): > 5,050 mg/kg

Components:

fluidioxonil (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

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

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.

Skin corrosion/irritation

Product:

Species: Rabbit
Result: No skin irritation

Components:

fludioxonil (ISO):

Species: Rabbit
Result: No skin irritation

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

Species : Rabbit
Result : Mild skin irritation

bronopol (INN):

Result: Irritating to skin.

Serious eye damage/eye irritation

Product:

Species: Rabbit
Result: No eye irritation

Components:

fludioxonil (ISO):

Species: Rabbit
Result: No eye irritation

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

Species: Rabbit
Result: Risk of serious damage to eyes.

bronopol (INN):

Result: Risk of serious damage to eyes.

Respiratory or skin sensitisation

Product:

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.

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.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Product:

Toxicity to fish: LC50 (*Danio rerio* (zebra fish)): 1.13 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50 (*Daphnia magna* (Water flea)): 50.25 mg/l
Exposure time: 48 h
ErC50 (*Raphidocelis subcapitata* (freshwater green alga)):: 0.82 mg/l
Exposure time: 72 h
NOEC (*Raphidocelis subcapitata* (freshwater green alga)): 0.01 mg/l
End point: Growth rate
Exposure time: 72 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 otheraquatic 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)): 0.259 mg/l
 Exposure time: 96 h
 EC10 (*Raphidocelis subcapitata* (freshwater green alga)): 0.077 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
 Species: *Pimephales promelas* (fathead minnow)

Toxicity to daphnia and otheraquatic invertebrates
 (Chronic toxicity):
 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

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)

bronopol (INN):
 Toxicity to algae:
 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

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.

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

Biodegradability : Result: rapidly degradable

bronopol (INN):

Biodegradability: Result: Readily biodegradable.

12.3 Bioaccumulative potential

Components:

fludioxonil (ISO):

Bioaccumulation : Remarks: Does not bioaccumulate.
 Partition coefficient: n-octanol/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 : Percentage dissipation: 50 % (DT50: 14 d)
 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).

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 Other adverse effects

Product:

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

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 for local recycling or waste disposal. Do not re-use empty containers.

14. TRANSPORT INFORMATION

14.1 UN number

ADR: UN 3082
RID: UN 3082
IMDG: UN 3082
IATA: UN 3082

14.2 UN proper shipping name

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)

ADR: 9
RID: 9
IMDG: 9
IATA: 9

14.4 Packing group

ADR

Packing group: III
Classification Code: M6
Hazard Identification Number: 90
Labels: 9

Tunnel restriction code: (-)

RID

Packing group: III
Classification Code: M6
Hazard Identification Number: 90
Labels: 9

IMDG

Packing group: III

Labels: 9

EmS Code: F-A, S-F

IATA (Cargo)

Packing instruction (cargo aircraft): 964

Packing instruction (LQ): Y964

Packing group: III

Labels: Miscellaneous

IATA (Passenger)

Packing instruction (passenger aircraft): 964

Packing instruction (LQ): Y964

Packing group: III

Labels: Miscellaneous

14.5 Environmental hazards

ADR

Environmentally hazardous: yes

RID

Environmentally hazardous: yes

IMDG

Marine pollutant: yes

IATA (Passenger)

Environmentally hazardous: yes

IATA (Cargo)

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

Not applicable for product as supplied.

15. REGULATORY INFORMATION

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

Relevant EU provisions transposed through retained EU law

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII): Conditions of restriction for the following entries should be considered: Number on list 3

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59): 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

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

GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation: 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
E2	ENVIRONMENTAL HAZARDS	100 t	200 t

Other regulations:

15.2 Chemical safety assessment

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

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.

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; AICS - Australian Inventory of Chemical Substances; 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:

Aquatic Acute 1 H400

Aquatic Chronic 1 H410

Classification procedure:

On basis of test data.

On basis of test data.

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.