Lxxxxxxx IREL/03A PPE xxxxxxx

Vibrance® Duo

syngenta®

A flowable concentrate for seed treatment containing 25 g/litre sedaxane and 25 g/litre fludioxonil.

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Product registration number: PCS No. 06263

VIBRANCE® Duo is a seed treatment for the control of a wide range of diseases in winter wheat, winter triticale, winter rye and spring oats.

In case of toxic or transport emergency ring +44 (0) 1484 538444 (24hr)

PROTECT FROM FROST
MIX THOROUGHLY BEFORE USE

Containers should be handled only by mechanical means

1000 litres

FOR PROFESSIONAL USE ONLY

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

VIBRANCE® Duo is a flowable concentrate for seed treatment containing 25 g/litre sedaxane and 25 g/l fludioxonil.

Warning

May cause an allergic skin reaction.
Harmful if inhaled.
Suspected of causing cancer.
Toxic to aquatic life with long lasting effects.

Keep out of reach of children.
Obtain special instructions before use.
Avoid breathing mist or vapours.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
IF exposed or concerned: Get medical advice/ attention.
Collect spillage.
Dispose of contents/container to a licensed hazardous waste disposal contractor except for empty triple rinsed containers which can be disposed of as non hazardous waste.

PCS No. 06263 **UFI:** RGSJ-A5VX-E00K-32AR

ADDITIONAL PRECAUTIONS SPECIFIC TO 1000 LITRE INTERMEDIATE BULK CONTAINERS (IBC).

FOLLOW THE OPERATING INSTRUCTIONS SUPPLIED WITH EACH IBC AT ALL TIMES.
(REF. "SAFE OPERATION OF VIBRANCE DUO DISPENSING SYSTEM USING IBC")
OPEN THE CONTAINER ONLY AS DIRECTED.
EMPTY IBC'S SHOULD BE TREATED AS FULL CONTAINERS WITH RESPECT TO STORAGE, TRANSPORT AND HANDLING AS THEY WILL STILL BE CONTAMINATED INTERNALLY.
DO NOT RINSE OUT THE CONTAINER.
DO NOT RE-USE THE CONTAINER FOR ANY OTHER PURPOSE.
ENSURE THAT VALVES ARE CLOSED, ALL CAPS ARE SECURED AND THAT THE PRODUCT LABEL IS LEGIBLE.

Authorisation Holder	**Marketing Company**
Syngenta UK Ltd CPC4, Capital Park, Fulbourn, Cambridge, CB21 5XE, England Tel: +44 (0)1223 883400	Syngenta Ireland Limited Block 6, Cleaboy Business Park, Old Kilmeaden Road, Waterford, Ireland Tel: (051) 377203

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CONDITIONS OF USE
FOR USE ONLY AS AN AGRICULTURAL SEED TREATMENT

Crops	Maximum individual dose (litres/tonne)	Maximum Number of Treatments	Latest time of application
Winter wheat (seed), winter triticale (seed), winter rye (seed)	2	One per batch	Before drilling
Spring oats (seed)	1	One per batch	Before drilling

ADDITIONAL SAFETY INFORMATION

Treated seed must not be used for food or feed.
Sacks containing treated seed must not be re-used for food or feed.

Operator protection
WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) AND SUITABLE PROTECTIVE GLOVES when handling the concentrate, contaminated surfaces or treated seed.
WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) AND SUITABLE PROTECTIVE GLOVES when bagging treated seed.
KEEP OUT OF REACH OF CHILDREN.
KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS.
WHEN USING, DO NOT EAT, DRINK OR SMOKE.

Environmental protection
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.
To protect birds and wild mammals, the treated seeds must be entirely incorporated in the soil; ensure that the treated seeds are also entirely incorporated at the end of rows.
To protect birds and wild mammals, remove any spillages.

Storage and disposal
EMPTY CONTAINER COMPLETELY and dispose of safely.
KEEP IN ORIGINAL CONTAINER tightly closed in a safe place.
DO NOT RE-USE CONTAINER for any purpose.

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 Ireland Limited nor its distributors can accept responsibility for any loss or damage to crops caused by the failure of VIBRANCE® Duo to control resistant strains.

DISEASES CONTROLLED

Wheat
VIBRANCE Duo is a fungicidal seed treatment for the control of bunt (*Tilletia caries*), loose smut (*Ustilago tritici*), and a moderate control of *Fusarium*, *Michrodochium spp.* and *Septoria spp.*

Triticale
VIBRANCE Duo is a fungicidal seed treatment for the moderate control of seedling blight and foot rot (*Michrodochium nivale* and *Fusarium spp.*).

Oats
VIBRANCE Duo will control loose smut (*Ustilago avenae*).

Rye
VIBRANCE Duo is a fungicidal seed treatment for the control of stripe smut (*Urocystis occulta*) and for the moderate control of seedling blight and foot rot (*Michrodochium nivale* and *Fusarium spp.*).

CROP SPECIFIC INFORMATION
For use on all varieties of wheat, triticale, oats and rye.

Timing
Before drilling.

Rates of Use
Winter wheat, winter triticale and winter rye: Apply 2 litres product per tonne of seed.
Spring oat: Apply 1 litre of product per tonne of seed.

APPLICATION
For all bulk containers: Prior to use the drum should be agitated by rolling the drum on its base to ensure uniform distribution of the product in the tank prior to application. This should be done using suitable mechanical means.

VIBRANCE Duo should be applied directly to the seed using conventional seed treatment equipment.

Calibrate the application equipment before use. For further advice please contact Syngenta Ireland Limited.

DRILLING
Seed treated with VIBRANCE Duo may affect the flow of the seed through drills. It is therefore important to check the calibration of the drill with VIBRANCE Duo treated seed before drilling commences.

STORAGE AFTER TREATMENT
Sowing treated seed that has been stored for prolonged periods (beyond the season of treatment) may adversely affect effectiveness and/or crop safety.

SEED BAG LABEL TEXT

This seed has been treated with VIBRANCE Duo

VIBRANCE Duo contains 25 g/l sedaxane and 25 g/l fludioxonil.
VIBRANCE Duo is a seed treatment for the control of a wide range of diseases in winter wheat, winter triticale, winter rye and spring oats.

PCS No. 06263

SAFETY PRECAUTIONS

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS AND GLOVES) when handling treated seed.
BURY OR REMOVE SPILLAGES. To protect game and wildlife, 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.
SACKS CONTAINING TREAT SEED MUST NOT BE RE-USED USED FOR for food or feed.
WASH HANDS AND EXPOSED SKIN before meals and after work.
DO NOT APPLY TREATED SEED FROM THE AIR.

NOTES

1. Safe Handling of treated Seed
   Avoid skin contact with treated seed and dust during all drilling operations. Launder coveralls daily.
2. Drilling
   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.
3. 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.
4. Seed Spillages
   In case of seed spillage, clean up as much as possible into the treated seed sack and re-use the clean seed. Bury the remainder completely.

Syngenta Ireland Ltd
Block 6, Cleaboy Business Park,
Old Kilmeaden Road, Waterford,
Ireland
Tel: (051) 377203

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 'extension of use' approval or is otherwise permitted under the Plant Protection Products Regulations.

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

SAFETY DATA SHEET V6.0

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

1.1 Product Identifier

Trade name: VIBRANCE DUO
Design code: A20078E
Product Registration Number: PCS 06263
Unique Formula Identifier(UFI): RGSJ-A5VX-E00K-32AR

1.2 Relevant Identified Uses of the substance or mixture and uses advised against

Use of the substance/mixture: Fungicide, Seed treatment
Recommended restrictions on use: professional use

1.3 Details of the supplier of the safety data sheet

Company: Syngenta Ireland Limited
Block 6 Cleaboy Business Park, Old Kilmeaden Road, Waterford, Ireland
Phone: (051) 377203
Fax: (051) 354748
E-mail address of person responsible for the SDS: cropsales.ie@syngenta.com

1.4 Emergency telephone number

Emergency telephone number: Syngenta +44 1484 538444
Poisons Information Centre of Ireland
Members of Public: +353 (1) 809 2166. (8.00 a.m. to 10.00 p.m. 7 days a week)
Healthcare Professionals: +353 (1) 809 2566 (24-hour service)

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2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4	H332: Harmful if inhaled.
Skin sensitisation, Sub-category 1B	H317: May cause an allergic skin reaction.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Long-term (chronic) aquatic hazard, Category 2	H411: 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	H317	May cause an allergic skin reaction.
	H332	Harmful if inhaled.
	H351	Suspected of causing cancer.
	H411	Toxic to aquatic life with long lasting effects.
Precautionary Statements	P201	Obtain special instructions before use.
	P261	Avoid breathing mist or vapours.
	P280	Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
	P304+ P340+	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a
	P312	POISON CENTER/ doctor if you feel unwell.
	P308+P313	IF exposed or concerned: Get medical advice/ attention.
	P391	Collect spillage.

Hazardous components which must be listed on the label:
• sedaxane
• 1,2-benzisothiazol-3(2H)-one

Precautionary statements: P102 Keep out of reach of children.
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.

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

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.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixtures

Components

Chemical Name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
alcohols, C16-18 and C18- unsatd., ethoxylated	68920-66-1 500-236-9 01-2119489407-26	Skin Irrit. 2; H315 Aquatic Chronic 3; H412	>= 2.5 - < 10
sedaxane	874967-67-6 616-235-00-2	Carc. 2; H351 Aquatic Acute 1; H400 Aquatic Chronic 2; H411 M-Factor (Acute aquatic toxicity): 1	>= 1 - < 2.5
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	>= 1 - < 2.5
Poly(oxy-1,2-ethanediyl), alpha-sulfo-omega -[tris(1-phenyl ethyl) phenoxy]-ammonium salt	119432-41-6	Aquatic Chronic3; H412	>= 1 - < 2.5
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 %	>= 0.05 - < 0.1

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.

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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.

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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. Refer to disposal considerations listed in section 13.

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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)	Conrol parameters	Basis
propane-1,2-diol	57-55-6	OELV - 8 hrs (TWA) (particles)	10 mg/m³	IE OEL
		OELV - 8 hrs (TWA) (total (vapour and particles))	150 ppm 470 mg/m³	IE OEL
sedaxane	874967-67-6	TWA	5 mg/m³	SYNGENTA
fludioxonil	131341-86-1	TWA	5 mg/m³	SYNGENTA

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
alcohols, C16-18 and C18-unsatd., ethoxylated	Workers	Inhalation	Long-term systemic effects	294 mg/m³
	Workers	Dermal	Long-term systemic effects	2080 mg/kg
	Consumers	Inhalation	Long-term systemic effects	87 mg/m³
	Consumers	Dermal	Long-term systemic effects	1250 mg/kg
	Consumers	Oral	Long-term systemic effects	25 mg/kg
calcium 4-[(5-chloro- 4-methyl-2-sulphonatophenyl)azo]-3-hydroxy-2-naphthoate	Workers	Inhalation	Systemic effects	4.4 mg/m³
	Workers	Dermal	Systemic effects	0.57 mg/kg bw/day
	Consumers	Inhalation	Systemic effects	1.1 mg/m³
	Consumers	Dermal	Systemic effects	0.2 mg/kg bw/day
	Consumers	Oral	Systemic effects	0.6 mg/kg bw/day
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

Substance name	Environmental Compartment	Value
	Fresh water sediment	572 mg/kg
	Soil	50 mg/kg
alcohols, C16-18 and C18-unsatd., ethoxylated	Fresh water	0.007 mg/l
	Freshwater - intermittent	0.1 mg/l
	Marine water	0.001 mg/l
	Sewage treatment plant	10 g/l
	Fresh water sediment	22.79 mg/kg
	Marine sediment	2.28 mg/kg
	Soil	1 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

Material : Nitrile rubber

Break through time : > 480 min

Glove thickness : 0.5 mm

Remarks : Wear protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. 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. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Remove and wash contaminated clothing before re-use. Wear as appropriate: Impervious clothing

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Suitable respiratory equipment: Respirator with combination filter for vapour/particulate (EN 141)
The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Filter type : Particulates type (P).

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

Physical state :	suspension	Auto-ignition temperature :	475 °C
Colour :	light red to dark red	Decomposition temperature :	No data available
Odour :	No data available	pH :	7.2
Odour Threshold :	No data available		Concentration: 100 % w/v
Melting point/range :	No data available	Viscosity, dynamic :	No data available
Boiling point/boiling range :	No data available	Viscosity, kinematic :	No data available
Flammability :	No data available	Water solubility :	No data available
Upper explosion limit / Upper flammability limit:	No data available	Solubility in other solvents :	No data available
		Partition coefficient: noctanol/water:	No data available
Lower explosion limit / Lower flammability limit:	No data available	Density :	1.06 g/cm3 (25 °C)
Flash point : Method:	Pensky-Martens closed cup does not flash	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

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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.

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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): > 2,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat, male and female): 2.54 - 5.34 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Components:

sedaxane:

Acute oral toxicity : LD50 (Rat, female): 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.244 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
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
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:
alcohols, C16-18 and C18-unsatd., ethoxylated:
Result : Irritating to skin.
sedaxane:
Species: Rabbit
Result: No skin irritation
fludioxonil (ISO):
Species: Rabbit
Result: No skin irritation
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:
sedaxane:
Species: Rabbit
Result: No eye irritation
fludioxonil (ISO):
Species: Rabbit
Result: No eye irritation
1,2-benzisothiazol-3(2H)-one:
Species: Rabbit
Result: Risk of serious damage to eyes.

Respiratory or skin sensitisation
Product:
Test Type : Local lymph node assay (LLNA)
Species: Mouse
Result: The product is a skin sensitiser, sub-category 1B.
Components:
sedaxane:
Test Type : Local lymph node assay (LLNA)
Species: Mouse
Result : Not a skin sensitizer.

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:
sedaxane:
Germ cell mutagenicity- Assessment: Animal testing did not show any mutagenic effects.
fludioxonil (ISO):
Germ cell mutagenicity- Assessment: Animal testing did not show any mutagenic effects.
1,2-benzisothiazol-3(2H)-one:
Result : Probability or evidence of skin sensitisation in humans

Carcinogenicity
Components:
sedaxane:
Carcinogenicity - Assessment: Weight of evidence does not support classification as a carcinogen, At extremely high doses, numerically higher incidences of uterine, thyroid and liver tumors (male and/or female rats) and liver tumors (male mice) were within the range of normal background variation and thus considered unrelated to treatment. Some Regulatory Authorities have taken a more conservative position that these high-dose findings are treatment-related in rats and mice. The dose levels where these findings occur are not relevant to human exposure levels.
fludioxonil (ISO):
Carcinogenicity - Assessment: No evidence of carcinogenicity in animal studies.

Reproductive toxicity
Components:
sedaxane:
Reproductive toxicity - Assessment: No toxicity to reproduction
fludioxonil (ISO):
Reproductive toxicity - Assessment: No toxicity to reproduction

STOT - repeated exposure
Components:
sedaxane:
Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

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12. ECOLOGICAL INFORMATION
12.1 Toxicity
Product:

Toxicity to fish :	LC50 (*Oncorhynchus mykiss* (rainbow trout)): 17.8 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates:	EC50 (*Daphnia magna* (Water flea)): 36.7 mg/l Exposure time: 48 h
Toxicity to algae :	ErC50 (*Raphidocelis subcapitata* (freshwater green alga)): 6.23 mg/l Exposure time: 72 h NOEC (*Raphidocelis subcapitata* (freshwater green alga)): 1.53 mg/l End point: Growth rate Exposure time: 72 h

Components:
alcohols, C16-18 and C18-unsatd., ethoxylated:

Toxicity to fish :	LC50 (Fish): estimated 1.26 mg/l Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50 (Aquatic invertebrates (general)): 2.6 mg/l
Exposure time: 48 h
Toxicity to algae/aquatic plants: EC50 (algae): 2.3 mg/l
Exposure time: 72 h
EC10 (algae): 0.33 mg/l
End point: Biomass
Exposure time: 72 h

sedaxane:

Toxicity to fish : LC50 (*Cyprinus carpio* (Carp)): 0.62 mg/l
Exposure time: 96 h
LC50 (*Pimephales promelas* (fathead minnow)): 0.98 mg/l
Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates: EC50 (*Daphnia magna* (Water flea)): 6.10 mg/l
Exposure time: 48 h
Toxicity to algae : ErC50 (*Pseudokirchneriella subcapitata* (green algae)): 3 mg/l
Exposure time: 96 h
NOEC (*Pseudokirchneriella subcapitata* (green algae)): 1 mg/l
End point: Growth rate
Exposure time: 96 h
ErC50 (*Lemna gibba* (gibbous duckweed)): 6.5 mg/l
Exposure time: 7 d
NOEC (*Lemna gibba* (gibbous duckweed)): 0.59 mg/l
End point: Growth rate
Exposure time: 7 d
M-Factor (Acute aquatic toxicity): 1
Toxicity to fish (Chronic toxicity): NOEC: 0.165 mg/l
Exposure time: 33 d
Species: *Pimephales promelas* (fathead minnow)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): NOEC: 0.02 mg/l
Exposure time: 21 d
Species: *Daphnia magna* (Water flea)

fludioxonil (ISO):

Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): 0.23 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
Toxicity to algae : ErC50 (*Pseudokirchneriella subcapitata* (green algae)): > 0.44 mg/l
Exposure time: 96 h
NOEC (*Pseudokirchneriella subcapitata* (green algae)): 0.132 mg/l
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
Toxicity to microorganisms : EC50 (activated sludge): > 100 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)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): NOEC: 0.035 mg/l
Exposure time: 21 d
Species: *Daphnia magna* (Water flea)
M-Factor (Chronic aquatic toxicity): 1

poly(oxy-1,2-ethanediyl), alpha-sulfo-omega-[tris(1-phenylethyl)phenoxy]-, ammonium salt:

Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): 33 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50 (*Daphnia magna* (Water flea)): 24 mg/l
Exposure time: 48 h

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:

alcohols, C16-18 and C18-unsatd., ethoxylated:
Biodegradability : Result: Readily biodegradable
Remarks: Based on data from similar materials
sedaxane:
Biodegradability : Result: Not readily biodegradable.
Stability in water : Degradation half life: > 1 y
Remarks: Persistent in water.
fludioxonil (ISO):
Biodegradability : Result: Not readily biodegradable.
1,2-benzisothiazol-3(2H)-one:
Biodegradability : Result: rapidly degradable

12.3 Bioaccumulative potential

Components:

sedaxane:
Bioaccumulation : Remarks: Does not bioaccumulate.
Partition coefficient: noctanol/water: log Pow: 3.3 (25 °C)
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:
sedaxane:
Distribution among environmental compartments: Remarks: Low to medium mobility in soil.
Stability in soil : Percentage dissipation: 50 % (DT50: 83 d)
Remarks: Product is not persistent.
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:
sedaxane:
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).
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:
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

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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.
Waste Code: 15 01 10, packaging containing residues of or contaminated by hazardous substances.

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14. TRANSPORT INFORMATION

14.1 UN number

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

14.2 UN proper shipping name
ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUDIOXONIL AND SEDAXANE)
RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUDIOXONIL AND SEDAXANE)
IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUDIOXONIL AND SEDAXANE)
IATA : Environmentally hazardous substance, liquid, n.o.s. (FLUDIOXONIL AND SEDAXANE)

14.3 Transport hazard class(es)

ADR	RID	IMDG	IATA
9	9	9	9

14.4 Packing group

ADR	RID	IMDG	IATA (Cargo)	IATA (Passenger)
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	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
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 information 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.

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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, mixtures and articles (Annex XVII): Conditions of restriction for the following entries should be considered: Number on list 3
xylene
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
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals: Not applicable
REACH - List of substances subject to authorisation (Annex XIV): 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	200 t	500 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. Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable. Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

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16. OTHER INFORMATION
Full text of H-Statements
H302 : Harmful if swallowed.
H315 : Causes skin irritation.

H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H351 : Suspected of causing cancer.
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
Carc. :	Carcinogenicity
Eye Dam.:	Serious eye damage
Skin Irrit.:	Skin irritation
Skin Sens.:	Skin sensitisation
IE OEL:	Ireland. List of Chemical Agents and Occupational Exposure Limit Values - Schedule 1
IE OEL / OELV - 8 hrs (TWA):	Occupational exposure limit value (8-hour 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 - Philippine 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:**
Acute Tox. 4	H332	On basis of test data.
Skin Sens. 1B	H317	On basis of test data.
Carc. 2	H351	Calculation method
Aquatic Chronic 2	H411	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.