

Safety data sheet

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BASF safety data sheet. This is a translation of the country-specific safety data sheet into a language other than that required by law. This document does not replace the safety data sheet provided according to Regulation (EC) No 1907/2006.

Date / Revised: 30.07.2025

Version: 7.1

Date / Previous version: 10.01.2024

Previous version: 7.0

Product: **Rubin Plus**

(ID no. 30670738/SDS_CPA_EU/EN)

Date of print 13.12.2025

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Rubin Plus

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

Relevant identified uses: crop protection product, fungicide

1.3. Details of the supplier of the safety data sheet

Company:

BASF SE

67056 Ludwigshafen

GERMANY

Operating Division Crop Protection

Telephone: +49 621 60-27777

E-mail address: Produktinformation-Pflanzenschutz@basf.com

1.4. Emergency telephone number

International emergency number:

Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

For the classification of the mixture the following methods have been applied: extrapolation on the concentration levels of the hazardous substances, on basis of test results and after evaluation of experts. The methodologies used are mentioned at the respective test results.

According to Regulation (EC) No 1272/2008 [CLP]

Skin Corr./Irrit. 2

H315 Causes skin irritation.

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Skin Sens. 1	H317 May cause an allergic skin reaction.
Repr. Additional category for effects on or via lactation.	H362 May cause harm to breast-fed children.
Repr. 2	H361f Suspected of damaging fertility.
Aquatic Chronic 1	H410 Very toxic to aquatic life with long lasting effects.

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

According to Regulation (EC) No 1272/2008 [CLP]

Globally Harmonized System, EU (GHS)

Pictogram:



Signal Word:

Warning

Hazard Statement:

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H362	May cause harm to breast-fed children.
H361f	Suspected of damaging fertility.
H410	Very toxic to aquatic life with long lasting effects.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary Statement:

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.

Precautionary Statements (Prevention):

P280	Wear protective gloves, protective clothing and eye protection or face protection.
P260	Do not breathe dust or mist.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P272	Contaminated work clothing should not be allowed out of the workplace.
P263	Avoid contact during pregnancy and while nursing.
P270	Do not eat, drink or smoke when using this product.
P264	Wash contaminated body parts thoroughly after handling.

Precautionary Statements (Response):

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P333 + P313	If skin irritation or rash occurs: Get medical attention.
P391	Collect spillage.
P308 + P313	IF exposed or concerned: Get medical attention.

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P362 + P364 Take off contaminated clothing and wash it before reuse.

Precautionary Statements (Storage):

P405 Store locked up.

Precautionary Statements (Disposal):

P501 Dispose of contents and container to hazardous or special waste collection point.

Labeling of special preparations (GHS):

May produce an allergic reaction. Contains: 1,2-benzisothiazol-3(2H)-one, 5-Chloro-2-methyl-2H-isothiazol-3-one

Hazard determining component(s) for labelling: Fluxapyroxad (ISO); 1H-Pyrazole-4-carboxamide, 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluoro[1,1'-biphenyl]-2-yl)-, triticonazole (ISO); (RS)-(E)-5-(4-chlorobenzylidene)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-methyl)cyclopentanol, 2-Methyl-2H-isothiazol-3-one

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

See section 12 - Results of PBT and vPvB assessment.

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

Product does not contain a substance above legal limits included in the list established in accordance with Article 59(1) of Regulation (EC) No 1907/2006 for having endocrine disrupting properties or is identified to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical nature

crop protection product, fungicide, Flowable concentrate for seed treatment (FS)

Regulatory relevant ingredients

fludioxonil (ISO); 4-(2,2-difluoro-1,3-benzodioxol-4-yl)-1H-pyrrole-3-carbonitrile

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Content (W/W): 3.02 %
CAS Number: 131341-86-1

Aquatic Acute 1
Aquatic Chronic 1
M-factor acute: 1
M-factor chronic: 10
H400, H410

triticonazole (ISO); (RS)-(E)-5-(4-chlorobenzylidene)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-methyl)cyclopentanol

Content (W/W): 3.02 %
CAS Number: 138182-18-0

Substance of concern regarding
endocrine disruptive properties

Repr. 2 (fertility)
STOT RE (Liver, Adrenal gland) 2
Aquatic Acute 1
Aquatic Chronic 1
ED HH 1
ED ENV 1
M-factor acute: 1
M-factor chronic: 1
H361f, H373, H400, H410, EUH430, EUH380

Fluxapyroxad (ISO); 1H-Pyrazole-4-carboxamide, 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluoro[1,1'-biphenyl]-2-yl)-

Content (W/W): 3.02 %
CAS Number: 907204-31-3

Substance with EU occupational
exposure limit

Repr. Add. cat. lact.
Aquatic Acute 1
Aquatic Chronic 1
M-factor acute: 1
M-factor chronic: 1
H362, H400, H410

Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-[2,4,6-tris(1-phenylethyl)phenoxy]-, ammonium salt

Content (W/W): < 5 %
CAS Number: 119432-41-6

Aquatic Chronic 3
H412

5-Chloro-2-methyl-2H-isothiazol-3-one

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Content (W/W): < 0.1 %
CAS Number: 26172-55-4
EC-Number: 247-500-7

Acute Tox. 2 (Inhalation - dust)
Acute Tox. 3 (oral)
Acute Tox. 2 (dermal)
Skin Corr. 1C
Eye Dam. 1
Skin Sens. 1A
Aquatic Acute 1
Aquatic Chronic 1
M-factor acute: 100
M-factor chronic: 100
H314, H301, H317, H310 + H330, H400, H410
EUH071

Specific concentration limit:

Eye Irrit. 2: 0.06 - < 0.6 %
Eye Dam. 1: >= 0.6 %
Skin Irrit. 2: 0.06 - < 0.6 %
Skin Corr. 1C: >= 0.6 %
Skin Sens. 1A: >= 0.0015 %

bronopol (INN)

Content (W/W): < 0.05 %
CAS Number: 52-51-7
EC-Number: 200-143-0
REACH registration number: 01-2119980938-15
INDEX-Number: 603-085-00-8

Acute Tox. 3 (Inhalation - dust)
Acute Tox. 3 (oral)
Acute Tox. 4 (dermal)
Skin Irrit. 2
Eye Dam. 1
STOT SE 3 (irr. to respiratory syst.)
Aquatic Acute 1
Aquatic Chronic 1
M-factor acute: 10
M-factor chronic: 10
H318, H315, H312, H335, H301 + H331, H400, H410

Differing classification according to current knowledge and the criteria given in Annex I of Regulation (EC) No. 1272/2008

Aquatic Chronic 1
Aquatic Acute 1
M-factor acute: 100
M-factor chronic: 10

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

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Date of print 13.12.2025

Content (W/W): < 0.036 %
CAS Number: 2634-33-5
EC-Number: 220-120-9
REACH registration number: 01-2120761540-60
INDEX-Number: 613-088-00-6

Acute Tox. 2 (Inhalation - dust)
Acute Tox. 4 (oral)
Skin Irrit. 2
Eye Dam. 1
Skin Sens. 1A
Aquatic Acute 1
Aquatic Chronic 1
M-factor acute: 1
M-factor chronic: 1
H318, H315, H330, H302, H317, H400, H410

Specific concentration limit:

Skin Sens. 1A: >= 0.036 %

Acute toxicity estimate:

oral: 450 mg/kg
Inhalation: 0.21 mg/l

2-methylisothiazol-3(2H)-one

Content (W/W): < 0.02 %
CAS Number: 2682-20-4
EC-Number: 220-239-6
REACH registration number: 01-2120764690-50
INDEX-Number: 613-326-00-9

Acute Tox. 2 (Inhalation - dust)
Acute Tox. 3 (oral)
Acute Tox. 3 (dermal)
Skin Corr. 1B
Eye Dam. 1
Skin Sens. 1A
Aquatic Acute 1
Aquatic Chronic 1
M-factor acute: 10
M-factor chronic: 1
H330, H317, H314, H301 + H311, H400, H410
EUH071

Specific concentration limit:

Skin Sens. 1A: >= 0.0015 %

Propane-1,2-diol

Content (W/W): < 10 %
CAS Number: 57-55-6
EC-Number: 200-338-0
REACH registration number: 01-2119456809-23

polyethylene glycol

Content (W/W): < 5 %
CAS Number: 25322-68-3
REACH registration number: 01-2119958801-32

Glycerol

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Content (W/W): < 5 %
CAS Number: 56-81-5
EC-Number: 200-289-5
REACH registration number: 01-
2119471987-18

For the classifications not written out in full in this section, including the hazard classes and the hazard statements, the full text is listed in section 16.

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:

Wash thoroughly with soap and water

On contact with eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far

4.3. Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media:

water spray, dry powder, foam, carbon dioxide

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5.2. Special hazards arising from the substance or mixture

Endangering substances: Carbon monoxide, Carbon dioxide, Sulphur dioxide, hydrogen chloride, Hydrogen fluoride, Hydrogen bromide, nitrogen oxides, halogenated compounds, sulfur oxides, silica compounds

Advice: The substances/groups of substances mentioned can be released in case of fire.

5.3. Advice for fire-fighters

Special protective equipment:

Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:

Keep containers cool by spraying with water if exposed to fire. In case of fire and/or explosion do not breathe fumes. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not breathe vapour/spray. Use personal protective clothing. Avoid contact with the skin, eyes and clothing.

6.2. Environmental precautions

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up

For small amounts: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).

For large amounts: Dike spillage. Pump off product.

Dispose of absorbed material in accordance with regulations. Collect waste in suitable containers, which can be labeled and sealed. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations. Wear suitable protective equipment.

6.4. Reference to other sections

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

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SECTION 7: Handling and Storage

7.1. Precautions for safe handling

No special measures necessary if stored and handled correctly. Ensure thorough ventilation of stores and work areas. When using do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift.

Protection against fire and explosion:

No special precautions necessary. The substance/product is non-combustible. Product is not explosive.

7.2. Conditions for safe storage, including any incompatibilities

Segregate from foods and animal feeds.

Further information on storage conditions: Keep away from heat. Protect from direct sunlight.

Storage stability:

Storage duration: 36 Months

Protect from temperatures below: 0 °C

Changes in the properties of the product may occur if substance/product is stored below indicated temperature for extended periods of time.

Protect from temperatures above: 40 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

7.3. Specific end use(s)

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

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

56-81-5: Glycerol

57-55-6: Propane-1,2-diol

131341-86-1: 1H-Pyrrole-3-carbonitrile, 4-(2,2-difluoro-1,3-benzodioxol-4-yl)-

907204-31-3: Fluxapyroxad

TWA value 0.5 mg/m³ (BASF recomm. occupational exposure limit)

25322-68-3: Polyethylene glycol

8.2. Exposure controls

Personal protective equipment

Respiratory protection:

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Suitable respiratory protection for higher concentrations or long-term effect: Combination filter for gases/vapours of organic, inorganic, acid inorganic and alkaline compounds (e.g. EN 14387 Type ABEK).

Hand protection:

Suitable chemical resistant safety gloves (EN ISO 374-1) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) etc.

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures

The statements on personal protective equipment in the instructions for use apply when handling crop-protection agents in final-consumer packing. Wearing of closed work clothing is recommended. Store work clothing separately. Keep away from food, drink and animal feeding stuffs.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

State of matter:	liquid
Form:	liquid
Colour:	red
Odour:	faint odour, sweetish
Odour threshold:	Not determined due to potential health hazard by inhalation.
Freezing point:	approx. -5 °C
Boiling point:	approx. 100 °C
Flammability:	Information applies to the solvent. not applicable
Lower explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.

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Upper explosion limit:

As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.

Flash point:

Non-flammable.

Auto-ignition temperature: 455 °C

(Directive 84/449/EEC, A.15)

Thermal decomposition: 165 °C, 640 kJ/kg (DSC (OECD 113))
(onset temperature)

Not a substance liable to self-decomposition according to UN transport regulations, class 4.1.

SADT: > 75 °C

pH value: approx. 5 - 7
(23 °C)

Viscosity, dynamic: approx. 228 mPa.s
(20 °C, 100 1/s)
approx. 162 mPa.s
(40 °C, 100 1/s)

Thixotropy: not thixotropic

Solubility in water: dispersible

Partitioning coefficient n-octanol/water (log Kow):
not applicable for mixtures

Vapour pressure: approx. 23.4 hPa
(20 °C)

Information applies to the solvent.

Density: approx. 1.10 g/cm³
(20 °C)

approx. 1.106 g/cm³
(15 °C)

approx. 1.095 g/cm³
(50 °C)

Relative vapour density (air):
not applicable

Particle characteristics

Particle size distribution: The substance / product is marketed or used in a non solid or granular form. -

9.2. Other information

Information with regard to physical hazard classes

Explosives

Explosion hazard: not explosive

Oxidizing properties

Fire promoting properties: not fire-propagating

Other safety characteristics

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Evaporation rate:

not applicable

SECTION 10: Stability and Reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions

No hazardous reactions if stored and handled as prescribed/indicated.

10.4. Conditions to avoid

See SDS section 7 - Handling and storage.

10.5. Incompatible materials

Substances to avoid:

strong acids, strong bases, strong oxidizing agents

10.6. Hazardous decomposition products

Hazardous decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological Information

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

Acute toxicity

Assessment of acute toxicity:

Virtually nontoxic after a single ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact.

Experimental/calculated data:

LD50 rat (oral): > 2,000 mg/kg (OECD Guideline 423)

No mortality was observed.

LC50 rat (by inhalation): > 5.45 mg/l 4 h

No mortality was observed. An aerosol was tested.

LD50 rat (dermal): > 5,000 mg/kg (OECD Guideline 402)

No mortality was observed.

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Irritation

Assessment of irritating effects:

Not irritating to the eyes. Skin contact causes irritation.

Experimental/calculated data:

Skin corrosion/irritation

rabbit: Irritant. (OECD Guideline 404)

Serious eye damage/irritation

rabbit: non-irritant (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization:

Sensitization after skin contact possible. The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: 2-Methyl-2H-isothiazol-3-one

Experimental/calculated data:

Buehler test guinea pig: skin sensitizing (OECD Guideline 406)

Germ cell mutagenicity

Assessment of mutagenicity:

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: bronopol (INN)

Assessment of mutagenicity:

The substance was not mutagenic in bacteria. The substance was mutagenic in various cell culture test systems; however, these results could not be confirmed in tests with mammals.

Information on: 5-Chloro-2-methyl-2H-isothiazol-3-one

Assessment of mutagenicity:

Based on available data, the classification criteria are not met. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Carcinogenicity

Assessment of carcinogenicity:

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Fluxapyroxad (ISO); 1H-Pyrazole-4-carboxamide, 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluoro[1,1'-biphenyl]-2-yl)-

Assessment of carcinogenicity:

Indication of possible carcinogenic effect in animal tests. The effect is caused by an animal specific mechanism that has no human counter part.

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Reproductive toxicity

Assessment of reproduction toxicity:

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Fluxapyroxad (ISO); 1H-Pyrazole-4-carboxamide, 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluoro[1,1'-biphenyl]-2-yl)-

Assessment of reproduction toxicity:

The results of animal studies gave no indication of a fertility impairing effect. May cause harm to children via breast-feeding.

Information on: triticonazole (ISO); (RS)-(E)-5-(4-chlorobenzylidene)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-methyl)cyclopentanol

Assessment of reproduction toxicity:

The potential to impair fertility cannot be excluded when given at maternally toxic doses.

Developmental toxicity

Assessment of teratogenicity:

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: 5-Chloro-2-methyl-2H-isothiazol-3-one

Assessment of teratogenicity:

Based on available data, the classification criteria are not met. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Information on: triticonazole (ISO); (RS)-(E)-5-(4-chlorobenzylidene)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-methyl)cyclopentanol

Assessment of teratogenicity:

The substance did not cause malformations in animal studies; however, toxicity to development was observed at high doses that were toxic to the parental animals.

Specific target organ toxicity (single exposure)

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Remarks: The product has not been tested. The statement has been derived from the properties of the individual components.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: triticonazole (ISO); (RS)-(E)-5-(4-chlorobenzylidene)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-methyl)cyclopentanol

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Assessment of repeated dose toxicity:

Repeated exposure may affect certain organs.

Information on: 5-Chloro-2-methyl-2H-isothiazol-3-one

Assessment of repeated dose toxicity:

Based on available data, the classification criteria are not met. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Information on: Fluxapyroxad (ISO); 1H-Pyrazole-4-carboxamide, 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluoro[1,1'-biphenyl]-2-yl)-

Assessment of repeated dose toxicity:

Adaptive effects were observed after repeated exposure in animal studies.

Information on: bronopol (INN)

Assessment of repeated dose toxicity:

After repeated exposure the prominent effect is local irritation.

Aspiration hazard

not applicable

Interactive effects

No data available.

11.2. Information on other hazards

Endocrine disrupting properties

Product does not contain a substance above legal limits included in the list established in accordance with Article 59(1) of Regulation (EC) No 1907/2006 for having endocrine disrupting properties or is identified to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

Other information

Other relevant toxicity information

Misuse can be harmful to health.

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:

Very toxic to aquatic life with long lasting effects.

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The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: triticonazole (ISO); (RS)-(E)-5-(4-chlorobenzylidene)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-methyl)cyclopentanol

Toxicity to fish:

LC50 (96 h) > 3.6 mg/l, Oncorhynchus mykiss

Information on: Fluxapyroxad (ISO); 1H-Pyrazole-4-carboxamide, 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluoro[1,1'-biphenyl]-2-yl)-

Toxicity to fish:

LC50 (96 h) 0.29 mg/l, Cyprinus carpio (Fish test acute, semistatic)

LC50 (96 h) 0.546 mg/l, Oncorhynchus mykiss (OECD Guideline 203, static)

LC50 (96 h) 1.15 mg/l, Lepomis macrochirus (OECD Guideline 203, static)

LC50 (96 h) 0.466 mg/l, Pimephales promelas (OECD Guideline 203, static)

Information on: fludioxonil (ISO); 4-(2,2-difluoro-1,3-benzodioxol-4-yl)-1H-pyrrole-3-carbonitrile

Toxicity to fish:

LC50 (96 h) 0.23 mg/l, Oncorhynchus mykiss

LC50 (96 h) 0.7 mg/l, Pimephales promelas

Information on: triticonazole (ISO); (RS)-(E)-5-(4-chlorobenzylidene)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-methyl)cyclopentanol

Aquatic invertebrates:

EC50 (96 h) 6.6 mg/l, Americamysis bahia

Information on: Fluxapyroxad (ISO); 1H-Pyrazole-4-carboxamide, 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluoro[1,1'-biphenyl]-2-yl)-

Aquatic invertebrates:

EC50 (48 h) 6.78 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)

Information on: fludioxonil (ISO); 4-(2,2-difluoro-1,3-benzodioxol-4-yl)-1H-pyrrole-3-carbonitrile

Aquatic invertebrates:

EC50 (48 h) 0.4 mg/l, Daphnia magna

EC50 (96 h) 0.27 mg/l, Americamysis bahia

Information on: triticonazole (ISO); (RS)-(E)-5-(4-chlorobenzylidene)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-methyl)cyclopentanol

Aquatic plants:

EC50 (120 h) 0.31 mg/l, Skeletonema costatum

No observed effect concentration (120 h) 0.031 mg/l, Skeletonema costatum

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EC50 (14 d) 1.4 mg/l, Lemna gibba

No observed effect concentration (14 d) 0.33 mg/l, Lemna gibba

EC50 (72 h) 10 mg/l, Pseudokirchneriella subcapitata

No observed effect concentration (72 h) 3.2 mg/l, Pseudokirchneriella subcapitata

Information on: Fluxapyroxad (ISO); 1H-Pyrazole-4-carboxamide, 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluoro[1,1'-biphenyl]-2-yl)-

Aquatic plants:

EC50 (72 h) 0.70 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201)

EC50 (96 h) 0.66 mg/l (growth rate), Pseudokirchneriella subcapitata

EC10 (72 h) 0.31 mg/l (growth rate), Pseudokirchneriella subcapitata

EC10 (96 h) 0.36 mg/l (growth rate), Pseudokirchneriella subcapitata

Information on: fludioxonil (ISO); 4-(2,2-difluoro-1,3-benzodioxol-4-yl)-1H-pyrrole-3-carbonitrile

Aquatic plants:

EC50 (96 h) > 0.44 mg/l (growth rate), Pseudokirchneriella subcapitata

No observed effect concentration (96 h) 0.132 mg/l, Pseudokirchneriella subcapitata

EC50 (96 h) 0.43 mg/l (growth rate), Skeletonema costatum

No observed effect concentration (96 h) 0.14 mg/l (growth rate), Skeletonema costatum

Information on: triticonazole (ISO); (RS)-(E)-5-(4-chlorobenzylidene)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-methyl)cyclopentanol

Chronic toxicity to fish:

No observed effect concentration (28 d) 0.01 mg/l, Oncorhynchus mykiss

No observed effect concentration (175 d) 0.0114 mg/l, Pimephales promelas

Information on: Fluxapyroxad (ISO); 1H-Pyrazole-4-carboxamide, 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluoro[1,1'-biphenyl]-2-yl)-

Chronic toxicity to fish:

No observed effect concentration (33 d) 0.0359 mg/l, Pimephales promelas (OECD Guideline 210, Flow through.)

Information on: fludioxonil (ISO); 4-(2,2-difluoro-1,3-benzodioxol-4-yl)-1H-pyrrole-3-carbonitrile

Chronic toxicity to fish:

No observed effect concentration (28 d) 0.04 mg/l, Oncorhynchus mykiss

No observed effect concentration (116 d) 0.018 mg/l, Pimephales promelas

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Information on:triticonazole (ISO); (RS)-(E)-5-(4-chlorobenzylidene)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-methyl)cyclopentanol

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (28 d) 0.041 mg/l, Mysidopsis bahia

Information on:Fluxapyroxad (ISO); 1H-Pyrazole-4-carboxamide, 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluoro[1,1'-biphenyl]-2-yl)-

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (21 d) 0.5 mg/l, Daphnia magna (OECD Guideline 211, semistatic)

Information on:fludioxonil (ISO); 4-(2,2-difluoro-1,3-benzodioxol-4-yl)-1H-pyrrole-3-carbonitrile

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (21 d) 0.035 mg/l, Daphnia magna

No observed effect concentration (28 d) 0.018 mg/l, Mysidopsis bahia

12.2. Persistence and degradability

Assessment biodegradation and elimination (H₂O):

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on:triticonazole (ISO); (RS)-(E)-5-(4-chlorobenzylidene)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-methyl)cyclopentanol

Assessment biodegradation and elimination (H₂O):

Not readily biodegradable (by OECD criteria).

Information on:Fluxapyroxad (ISO); 1H-Pyrazole-4-carboxamide, 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluoro[1,1'-biphenyl]-2-yl)-

Assessment biodegradation and elimination (H₂O):

Not readily biodegradable (by OECD criteria).

Information on:fludioxonil (ISO); 4-(2,2-difluoro-1,3-benzodioxol-4-yl)-1H-pyrrole-3-carbonitrile

Assessment biodegradation and elimination (H₂O):

Not readily biodegradable (by OECD criteria).

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on:fludioxonil (ISO); 4-(2,2-difluoro-1,3-benzodioxol-4-yl)-1H-pyrrole-3-carbonitrile

Assessment bioaccumulation potential:

Does not accumulate in organisms.

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Information on: triticonazole (ISO); (RS)-(E)-5-(4-chlorobenzylidene)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-methyl)cyclopentanol

Bioaccumulation potential:

Bioconcentration factor(BCF): 72.55 (42 d), Lepomis macrochirus
Does not accumulate in organisms.

Information on: Fluxapyroxad (ISO); 1H-Pyrazole-4-carboxamide, 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluoro[1,1'-biphenyl]-2-yl)-

Bioaccumulation potential:

Bioconcentration factor(BCF): 36 - 37 (28 d), Lepomis macrochirus (OECD Guideline 305)
Does not accumulate in organisms.

12.4. Mobility in soil

Assessment transport between environmental compartments:

Adsorption in soil: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: triticonazole (ISO); (RS)-(E)-5-(4-chlorobenzylidene)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-methyl)cyclopentanol

Assessment transport between environmental compartments:

Adsorption in soil: Following exposure to soil, the product trickles away and can - dependant on degradation - be transported to deeper soil areas with larger water loads.

Information on: Fluxapyroxad (ISO); 1H-Pyrazole-4-carboxamide, 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluoro[1,1'-biphenyl]-2-yl)-

Assessment transport between environmental compartments:

Adsorption in soil: Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

Information on: fludioxonil (ISO); 4-(2,2-difluoro-1,3-benzodioxol-4-yl)-1H-pyrrole-3-carbonitrile

Assessment transport between environmental compartments:

Adsorption in soil: low mobility in soil

12.5. Results of PBT and vPvB assessment

The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

12.6. Endocrine disrupting properties

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Product does not contain a substance above legal limits included in the list established in accordance with Article 59(1) of Regulation (EC) No 1907/2006 for having endocrine disrupting properties or is identified to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

12.7. Other adverse effects

The product does not contain substances that are listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

Additional information

Other ecotoxicological advice:

Do not discharge product into the environment without control.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Must be sent to a suitable incineration plant, observing local regulations.

Contaminated packaging:

Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

SECTION 14: Transport Information

Land transport

ADR

UN number or ID number: UN3082

UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUXAPYROXAD, TRITICONAZOLE)

Transport hazard class(es): 9, EHSM

Packing group: III

Environmental hazards: yes

Special precautions for user: None known

RID

UN number or ID number: UN3082

UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUXAPYROXAD, TRITICONAZOLE)

Transport hazard class(es): 9, EHSM

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Packing group: III
Environmental hazards: yes
Special precautions for user: None known

Inland waterway transport

ADN

UN number or ID number: UN3082
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUXAPYROXAD, TRITICONAZOLE)

Transport hazard class(es): 9, EHSM
Packing group: III
Environmental hazards: yes
Special precautions for user: None known

Transport in inland waterway vessel

Not evaluated

Sea transport

IMDG

UN number or ID number: UN 3082
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUXAPYROXAD, TRITICONAZOLE)

Transport hazard class(es): 9, EHSM
Packing group: III
Environmental hazards: yes
Marine pollutant: YES
Special precautions for user: EmS: F-A; S-F

Air transport

IATA/ICAO

UN number or ID number: UN 3082
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUXAPYROXAD, TRITICONAZOLE)

Transport hazard class(es): 9, EHSM
Packing group: III

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Environmental hazards: yes
Special precautions for user: None known

14.1. UN number or ID number

See corresponding entries for "UN number or ID number" for the respective regulations in the tables above.

14.2. UN proper shipping name

See corresponding entries for "UN proper shipping name" for the respective regulations in the tables above.

14.3. Transport hazard class(es)

See corresponding entries for "Transport hazard class(es)" for the respective regulations in the tables above.

14.4. Packing group

See corresponding entries for "Packing group" for the respective regulations in the tables above.

14.5. Environmental hazards

See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

14.6. Special precautions for user

See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

14.7. Maritime transport in bulk according to IMO instruments

Maritime transport in bulk is not intended.

Further information

Product may be shipped as non-hazardous in suitable packages containing a net quantity of 5 L or less under the provisions of various regulatory agencies: ADR, RID, ADN: Special Provision 375; IMDG: 2.10.2.7; IATA: A197; TDG: Special Provision 99(2); 49CFR: §171.4 (c) (2) and also the Special Provision 375 in Appendix B which is regulated in China "Regulations Concerning Road Transportation of Dangerous Goods Part 3: Index of dangerous goods name and transportation requirements" (JT/T 617.3)

SECTION 15: Regulatory Information

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

Prohibitions, Restrictions and Authorizations

Annex XVII of Regulation (EC) No 1907/2006: Number on List: 3

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Restrictions of Regulation (EC) No 1907/2006, Annex XVII, do not apply for the intended use(s) of the product given in this SDS.

Directive 2012/18/EU - Control of Major Accident Hazards involving dangerous substances (EU):

List entry in regulation: E1

Classification applies for standard conditions of temperature and pressure.

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

15.2. Chemical Safety Assessment

Advice on product handling can be found in sections 7 and 8 of this safety data sheet.

SECTION 16: Other Information

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

Full text of the classifications, including the hazard classes and the hazard statements, if mentioned in section 2 or 3:

Skin Corr./Irrit.	Skin corrosion/irritation
Skin Sens.	Skin sensitization
Repr.	Reproductive toxicity
Aquatic Chronic	Hazardous to the aquatic environment - chronic
Aquatic Acute	Hazardous to the aquatic environment - acute
STOT RE	Specific target organ toxicity — repeated exposure
ED HH	Endocrine disruption for human health
ED ENV	Endocrine disruption for the environment
Acute Tox.	Acute toxicity
Skin Corr.	Skin corrosion
Eye Dam.	Serious eye damage
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity — single exposure
Eye Irrit.	Eye irritation
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H362	May cause harm to breast-fed children.
H361f	Suspected of damaging fertility.
H410	Very toxic to aquatic life with long lasting effects.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.
H400	Very toxic to aquatic life.
H373	May cause damage to organs (Liver, Adrenal gland) through prolonged or repeated exposure.
EUH430	May cause endocrine disruption in the environment
EUH380	May cause endocrine disruption in humans
H412	Harmful to aquatic life with long lasting effects.

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H314	Causes severe skin burns and eye damage.
H301	Toxic if swallowed.
H310 + H330	Fatal in contact with skin or if inhaled.
H318	Causes serious eye damage.
H312	Harmful in contact with skin.
H335	May cause respiratory irritation.
H301 + H331	Toxic if swallowed or if inhaled.
H330	Fatal if inhaled.
H302	Harmful if swallowed.
H301 + H311	Toxic if swallowed or in contact with skin.
EUH071	Corrosive to the respiratory tract.

Abbreviations

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road.
 ADN = The European Agreement concerning the International Carriage of Dangerous Goods by Inland waterways. ATE = Acute Toxicity Estimates. CAO = Cargo Aircraft Only. CAS = Chemical Abstract Service. CLP = Classification, Labelling and Packaging of substances and mixtures. DIN = German national organization for standardization. DNEL = Derived No Effect Level. EC50 = Effective concentration median for 50% of the population. EC = European Community. EN = European Standards. IARC = International Agency for Research on Cancer. IATA = International Air Transport Association. IBC-Code = Intermediate Bulk Container code. IMDG = International Maritime Dangerous Goods Code. ISO = International Organization for Standardization. STEL = Short-Term Exposure Limit. LC50 = Lethal concentration median for 50% of the population. LD50 = Lethal dose median for 50% of the population. TLV = Threshold Limit Value. MARPOL = The International Convention for the Prevention of Pollution from Ships. NEN = Dutch Norm. NOEC = No Observed Effect Concentration. OEL = Occupational Exposure Limit. OECD = Organization for Economic Cooperation and Development. PBT = Persistent, Bioaccumulative and Toxic. PNEC = Predicted No Effect Level. PPM = Parts per million. RID = The European Agreement concerning the International Carriage of Dangerous Goods by Rail. TWA = Time Weight Average. UN-number = UN number at transport. vPvB = very Persistent and very Bioaccumulative.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

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