

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



WOLVERINE

Version	Revision Date:	SDS Number:	Date of last issue: 27.07.2020
1.2	15.04.2025	50002424	Date of first issue: 27.07.2020

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

1.1 Product identifier

Product name WOLVERINE

Other means of identification

Product code 50002424

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

Use of the Sub- : Fungicide
stance/Mixture

Recommended restrictions : Use as recommended by the label.
on use

1.3 Details of the supplier of the safety data sheet

Supplier Address

FMC Agro Limited
Rectors Lane, Pentre
Flintshire
CH5 2DH
United Kingdom

Telephone: + 44 1244 537370
E-mail address: SDS-Info@fmc.com .

1.4 Emergency telephone number

For leak, fire, spill or accident emergencies, call:
England and Wales: 44-870-8200418 (CHEMTREC)

Medical emergency:
England and Wales: 111
Scotland: 84 54 24 2424

SECTION 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)**

Skin sensitisation, Category 1

H317: May cause an allergic skin reaction.

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Eye irritation, Category 2	H319: Causes serious eye irritation.
Acute toxicity, Category 4	H332: Harmful if inhaled.
Reproductive toxicity, Category 2	H361d: Suspected of damaging the unborn child.
Effects on or via lactation	H362: May cause harm to breast-fed children.
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 :
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H361d Suspected of damaging the unborn child.
H362 May cause harm to breast-fed children.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P261 Avoid breathing vapours or spray.
P263 Avoid contact during pregnancy and while nursing.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER/ doctor if you feel unwell.
Disposal:
P501 Dispose of contents/container as hazardous waste in accordance with local regulations.

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Hazardous components which must be listed on the label:

Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-
Fluxapyroxad
metconazole (ISO)

Additional Labelling

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

For special phrases (SP) and safety intervals, consult the label.

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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-	186817-80-1	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1B; H317	>= 30 - < 50
Polyalkylene oxide derivative of a synthetic alcohol	103818-93-5	Acute Tox. 4; H302 Eye Irrit. 2; H319	>= 10 - < 20
Tridecanol, branched, ethoxylated	69011-36-5 500-241-6	Acute Tox. 4; H302 Eye Dam. 1; H318 Aquatic Chronic 2; H411	>= 10 - < 20
Fluxapyroxad	907204-31-3 616-228-00-4	Lact.H362 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 2.5 - < 10
Poly(oxy-1,2-ethanediyl), .alpha.-	104376-75-2	Aquatic Chronic 2;	>= 2.5 - < 10

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phenyl-.omega.-hydroxy-, styrenated		H411	
Tristyryl phenol-polyethylene glycol-phosphoric acid ester	114535-82-9	Eye Irrit. 2; H319 Aquatic Chronic 3; H412	$\geq 2.5 - < 10$
Tristyrylphenol ethoxylates	99734-09-5	Aquatic Chronic 3; H412	$\geq 2.5 - < 10$
metconazole (ISO)	125116-23-6 613-284-00-1	Acute Tox. 4; H302 Repr. 2; H361d Aquatic Acute 1; H400 Aquatic Chronic 2; H411 Aquatic Chronic 1; H410	$\geq 3 - < 10$

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- Protection of first-aiders : Avoid inhalation, ingestion and contact with skin and eyes.
- If inhaled : Consult a physician after significant exposure.
If unconscious, place in recovery position and seek medical advice.
If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.
- In case of skin contact : If on clothes, remove clothes.
If on skin, rinse well with water.
Wash off with soap and plenty of water.
Get medical attention immediately if irritation develops and persists.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
Do NOT induce vomiting.

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Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Risks : May cause an allergic skin reaction.
Causes serious eye irritation.
Harmful if inhaled.
Suspected of damaging the unborn child.
May cause harm to breast-fed children.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.
Immediate medical attention is required in case of ingestion.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Dry chemical, CO₂, water spray or regular foam.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : Do not spread spilled material with high-pressure water streams.
High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Fire may produce irritating, corrosive and/or toxic gases.
Carbon oxides
Fluorinated compounds
Chlorinated compounds
Sulphur oxides
Oxides of phosphorus

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Evacuate personnel to safe areas.
Use personal protective equipment.
If it can be safely done, stop the leak.
Do not touch or walk through the spilled material.
Ensure adequate ventilation.
Never return spills in original containers for re-use.
Mark the contaminated area with signs and prevent access to unauthorized personnel.
Only qualified personnel equipped with suitable protective equipment may intervene.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Dispose of rinse water in accordance with local and national regulations.
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Advice on protection against : Normal measures for preventive fire protection.

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fire and explosion

Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully re-sealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.

Further information on storage conditions : Protect from extreme heat or cold. Storage temperature between -10 and 40°C. Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. A warning sign reading "POISON" is recommended. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : Registered pesticide to be used in accordance with a label approved by country-specific regulatory authorities.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL)

Substance name	End Use	Exposure routes	Potential health effects	Value
Tridecanol, branched, 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	1250 mg/kg

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			effects	
	Consumers	Oral	Long-term systemic effects	25 mg/kg

Predicted No Effect Concentration (PNEC)

Substance name	Environmental Compartment	Value
Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-	Fresh water	0.008 mg/l
	Marine water	0.0008 mg/l
	Fresh water sediment	0.288 mg/kg dry weight (d.w.)
	Marine sediment	0.0288 mg/kg dry weight (d.w.)
	Soil	0.053 mg/kg dry weight (d.w.)
Tridecanol, branched, ethoxylated	Intermittent use (freshwater)	0.080 mg/l
	Fresh water	0.074 mg/l
	Intermittent use/release	0.015 mg/l
	Marine water	0.0074 mg/l
	Sewage treatment plant	1.4 mg/l
	Marine sediment	0.06 mg/kg dry weight (d.w.)
	Fresh water sediment	0.604 mg/kg dry weight (d.w.)
	Soil	0.1 mg/kg dry weight (d.w.)

8.2 Exposure controls

Personal protective equipment

- Eye/face protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.
- Hand protection
Material : Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber.
- Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Respiratory protection : In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.
- Protective measures : Plan first aid action before beginning work with this product.
Always have on hand a first-aid kit, together with proper in-

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structions.
Wear suitable protective equipment.
When using do not eat, drink or smoke.

In the context of professional plant protection use as recommended, the end user must refer to the label and the instructions for use.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: liquid
Colour	: colourless
Odour	: slight, aromatic
pH	: ca. 3 - 5
Melting point/freezing point	: -20 °C
Boiling point/boiling range	: not determined
Flash point	: ca. 106 °C
Upper explosion limit / Upper flammability limit	: not determined
Lower explosion limit / Lower flammability limit	: not determined
Vapour pressure	: Not available for this mixture.
Relative vapour density	: not determined
Density	: 1.03 g/cm ³ (20 °C)
Solubility(ies)	
Water solubility	: No data available
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: Not available for this mixture.
Auto-ignition temperature	: ca. 258 °C Method: Regulation (EC) No. 440/2008, Annex, A.15
Decomposition temperature	: not determined
Viscosity	
Viscosity, kinematic	: ca. 27 mm ² /s (40 °C)
Explosive properties	: Not explosiveMethod: Regulation (EC) No. 440/2008, Annex, A.14
Oxidizing properties	: Non-oxidizing Method: Regulation (EC) No. 440/2008, Annex, A.21

9.2 Other information

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Flammability (liquids)	:	Not highly flammable, ignitable
Particle size	:	Not applicable
Particle Size Distribution	:	Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : No decomposition if stored and applied as directed.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Avoid strong acids, bases, and oxidizers

10.6 Hazardous decomposition products

Stable under recommended storage conditions.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Harmful if inhaled.

Product:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 423

Acute inhalation toxicity : LC50 (Rat): 2.74 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402

Components:

Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-:

Acute oral toxicity : LD0 (Rat, male and female): > 2,000 mg/kg

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Method: OECD Test Guideline 401

Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.6 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Polyalkylene oxide derivative of a synthetic alcohol:

Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.

Tridecanol, branched, ethoxylated:

Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : LC0 (Rat): > 1.6 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Remarks: no mortality

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Remarks: no mortality

Fluxapyroxad:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 423

Acute inhalation toxicity : LC50 (Rat): > 5.1 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402

Tristyryl phenol-polyethylene glycol-phosphoric acid ester:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401

Tristyrylphenol ethoxylates:

Acute oral toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg

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Method: OECD Test Guideline 402

Assessment: The substance or mixture has no acute dermal toxicity

metconazole (ISO):

Acute oral toxicity : LD50 (Rat): 660 - 1,459 mg/kg
Method: Regulation (EC) No. 440/2008, Annex, B.1 bis

Acute inhalation toxicity : LC50 (Rat): > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Regulation (EC) No. 440/2008, Annex, B.2

Acute dermal toxicity : LD50 Dermal (Rat): > 2,000 mg/kg
Method: Regulation (EC) No. 440/2008, Annex, B.3

Skin corrosion/irritation

Not classified based on available information.

Product:

Species : Rabbit
Assessment : Not classified as irritant
Method : OECD Test Guideline 404
Result : No skin irritation

Components:

Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Skin irritation

Polyalkylene oxide derivative of a synthetic alcohol:

Method : OECD Test Guideline 439
Result : No skin irritation

Tridecanol, branched, ethoxylated:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

Fluxapyroxad:

Assessment : Not classified as irritant
Method : OECD Test Guideline 404
Result : No skin irritation

Poly(oxy-1,2-ethanediyl), .alpha.-phenyl-.omega.-hydroxy-, styrenated:

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Result : No skin irritation
Remarks : Based on data from similar materials

Tristyryl phenol-polyethylene glycol-phosphoric acid ester:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

Tristyrylphenol ethoxylates:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

metconazole (ISO):

Species : Rabbit
Assessment : Not classified as irritant
Method : Regulation (EC) No. 440/2008, Annex, B.4
Result : No skin irritation
Remarks : Minimal effects that do not meet the threshold for classification.

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Species : Rabbit
Assessment : Irritating to eyes.
Method : OECD Test Guideline 405
Result : Eye irritation

Components:

Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-:

Species : Rabbit
Method : OECD Test Guideline 405
Result : Irritation to eyes, reversing within 21 days

Polyalkylene oxide derivative of a synthetic alcohol:

Method : OECD Test Guideline 437
Result : Eye irritation

Tridecanol, branched, ethoxylated:

Result : Irreversible effects on the eye

Fluxapyroxad:

Assessment : Not classified as irritant

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Method : OECD Test Guideline 405
Result : No eye irritation

Poly(oxy-1,2-ethanediyl), .alpha.-phenyl-.omega.-hydroxy-, styrenated:

Result : slight irritation
Remarks : Based on data from similar materials

Tristyryl phenol-polyethylene glycol-phosphoric acid ester:

Species : Rabbit
Method : OECD Test Guideline 405
Result : Eye irritation

Tristyrylphenol ethoxylates:

Species : Rabbit
Method : OECD Test Guideline 405
Result : No eye irritation

metconazole (ISO):

Species : Rat
Assessment : Not classified as irritant
Method : Regulation (EC) No. 440/2008, Annex, B.5
Result : No eye irritation
Remarks : Minimal effects that do not meet the threshold for classification.

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Product:

Species : mice
Assessment : May cause sensitisation by skin contact.
Method : OECD Test Guideline 429
Result : May cause sensitisation by skin contact.

Components:

Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-:

Test Type : Local lymph node assay (LLNA)
Species : Mouse
Method : OECD Test Guideline 429
Result : The product is a skin sensitiser, sub-category 1B.

Tridecanol, branched, ethoxylated:

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Test Type	:	Maximisation Test
Species	:	Guinea pig
Result	:	Does not cause skin sensitisation.

Fluxapyroxad:

Assessment	:	Does not cause skin sensitisation.
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.

metconazole (ISO):

Species	:	Guinea pig
Assessment	:	Does not cause skin sensitisation.
Method	:	Regulation (EC) No. 440/2008, Annex, B.6
Result	:	Not a skin sensitizer.

Germ cell mutagenicity

Not classified based on available information.

Components:

Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-:

Genotoxicity in vitro	:	Test Type: gene mutation test Method: OECD Test Guideline 476 Result: negative
		Test Type: reverse mutation assay Method: OECD Test Guideline 471 Result: Conflicting results have been seen in different studies.
		Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: negative

Germ cell mutagenicity- Assessment	:	In vitro tests did not show mutagenic effects
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Tridecanol, branched, ethoxylated:

Genotoxicity in vitro	:	Test Type: reverse mutation assay Method: OECD Test Guideline 471 Result: negative
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Poly(oxy-1,2-ethanediyl), .alpha.-phenyl-.omega.-hydroxy-, styrenated:

Genotoxicity in vitro	:	Test Type: reverse mutation assay Test system: Salmonella typhimurium Result: negative Remarks: Based on data from similar materials
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Tristyrylphenol ethoxylates:

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Genotoxicity in vitro : Test Type: reverse mutation assay
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : Remarks: No data available

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Suspected of damaging the unborn child.
May cause harm to breast-fed children.

Components:

Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-:

Effects on foetal development : Test Type: Pre-natal
Species: Rat, female
Application Route: Inhalation
Dose: 0, .200 and .600 milligram per liter
General Toxicity Maternal: LOAEL: 0.200 mg/L
Developmental Toxicity: NOAEL: 0.600 mg/L
Embryo-foetal toxicity: NOAEL: 0.600 mg/L
Method: OECD Test Guideline 414
Result: negative

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

Tridecanol, branched, ethoxylated:

Effects on fertility : Test Type: Two-generation study
Species: Rat
Application Route: Dermal
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Oral
Method: OECD Test Guideline 414
Result: negative

Fluxapyroxad:

Reproductive toxicity - Assessment : Effects on or via lactation

STOT - single exposure

Not classified based on available information.

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Components:

Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Not classified based on available information.

Components:

Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-:

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

Repeated dose toxicity

Components:

Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-:

Species	: Rat, male and female
LOAEL	: 75 mg/m ³
Application Route	: inhalation (dust/mist/fume)
Test atmosphere	: dust/mist
Dose	: 0, 75, 200, 600 and 1800 mg/m ³
Method	: OECD Test Guideline 412
Target Organs	: respiratory tract irritation, nasal cavity

Tridecanol, branched, ethoxylated:

Species	: Rat
NOAEL	: 500 mg/kg
Application Route	: Oral
Exposure time	: 90 days

Fluxapyroxad:

Species	: Rat
LOAEL	: 30 mg/kg
Exposure time	: 90 d
Method	: OECD Test Guideline 408
Target Organs	: Liver, Thyroid

metconazole (ISO):

Species	: Rabbit
LOAEL	: 10 mg/kg
Target Organs	: No specific target organs noted
Symptoms	: decrease in appetite, Reduced body weight
Remarks	: Effects were observed in offspring.

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Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1.0 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1.383 mg/l
aquatic invertebrates
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100
plants
mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Components:

Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 32 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 83 mg/l
aquatic invertebrates
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic : EC50 (Pseudokirchneriella subcapitata (green algae)): 21 mg/l
plants
Exposure time: 72 h
Method: OECD Test Guideline 201

EC10 (Pseudokirchneriella subcapitata (green algae)): 6.18
mg/l
Exposure time: 72 h

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Method: OECD Test Guideline 201

Toxicity to terrestrial organisms : LC50: > 5,620 mg/kg
Exposure time: 8 d
Species: *Anas platyrhynchos* (Mallard duck)
Method: EPA OPP 71-2 (Avian Dietary Toxicity Test)
Remarks: Information given is based on data obtained from similar substances.

LC50: > 2,250 mg/kg
Exposure time: 14 d
Species: *Colinus virginianus* (Bobwhite quail)
Method: EPA OPP 71-1
Remarks: Information given is based on data obtained from similar substances.

Polyalkylene oxide derivative of a synthetic alcohol:

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 3.2 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Tridecanol, branched, ethoxylated:

Toxicity to fish : LL50 (*Danio rerio* (zebra fish)): 2.5 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 1.5 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : NOELR (*Desmodesmus subspicatus* (green algae)): 2.3 mg/l
Exposure time: 72 h

EL50 (*Desmodesmus subspicatus* (green algae)): 2.5 mg/l
Exposure time: 72 h

Toxicity to microorganisms : EC50 (*Anabaena flos-aquae* (cyanobacterium)): 0.356 - 0.979 mg/l
Exposure time: 72 h

EC50 (Natural microorganism): 10,000 mg/l
Exposure time: 16.9 h

Fluxapyroxad:

Toxicity to fish : LC50 (*Pimephales promelas* (fathead minnow)): 0.466 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

LC50 (*Lepomis macrochirus* (Bluegill sunfish)): 1.15 mg/l
Exposure time: 96 h
Test Type: static test

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Method: OECD Test Guideline 203

LC50 (Oncorhynchus mykiss (rainbow trout)): 0.546 mg/l

Exposure time: 96 h

Test Type: static test

Method: OECD Test Guideline 203

LC50 (Cyprinus carpio (Carp)): 0.29 mg/l

Exposure time: 96 h

Test Type: semi-static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 6.78 mg/l

Exposure time: 48 h

Test Type: static test

Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 0.7 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

EC50 (Pseudokirchneriella subcapitata (green algae)): 0.66 mg/l

Exposure time: 96 h

EC10 (Pseudokirchneriella subcapitata (green algae)): 0.31 mg/l

Exposure time: 72 h

EC10 (Pseudokirchneriella subcapitata (green algae)): 0.36 mg/l

Exposure time: 96 h

M-Factor (Acute aquatic toxicity) : 1

Toxicity to fish (Chronic toxicity) : NOEC: 0.0359 mg/l
Exposure time: 33 d
Species: Pimephales promelas (fathead minnow)
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.5 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : 1

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Poly(oxy-1,2-ethanediyl), .alpha.-phenyl-.omega.-hydroxy-, styrenated:

Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Tristyryl phenol-polyethylene glycol-phosphoric acid ester:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 100 - 500 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : NOEC (Desmodesmus subspicatus (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Tristyrylphenol ethoxylates:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 21 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to microorganisms :
Remarks: No data available

metconazole (ISO):

Toxicity to fish (Chronic toxicity) : EC10: 0.00398 mg/l
Exposure time: 95 d
Species: Oncorhynchus mykiss (rainbow trout)

NOEC: 0.00291 mg/l
Exposure time: 95 d
Species: Oncorhynchus mykiss (rainbow trout)
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.16 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

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12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data is available on the product itself.
Product contains minor amounts of not readily biodegradable components, which may not be degradable in waste water treatment plants.

Components:

Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-:

Biodegradability : Inoculum: activated sludge, non-adapted
Result: Readily biodegradable.
Method: OECD Test Guideline 301C

Polyalkylene oxide derivative of a synthetic alcohol:

Biodegradability : Inoculum: activated sludge
Result: Biodegradable
Biodegradation: > 60 %
Exposure time: 28 d

Tridecanol, branched, ethoxylated:

Biodegradability : Result: Readily biodegradable.

Fluxapyroxad:

Biodegradability : Remarks: Not readily biodegradable.

Poly(oxy-1,2-ethanediyl), .alpha.-phenyl-.omega.-hydroxy-, styrenated:

Biodegradability : Test Type: aerobic
Result: Not biodegradable
Remarks: Based on data from similar materials

Tristyryl phenol-polyethylene glycol-phosphoric acid ester:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 30 - 40 %
Method: OECD Test Guideline 302B

Tristyrylphenol ethoxylates:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 8 %
Exposure time: 28 d
Method: OECD Test Guideline 301

metconazole (ISO):

Biodegradability : Remarks: Not readily biodegradable.

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12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data is available on the product itself.

Components:

Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-:

Bioaccumulation : Bioconcentration factor (BCF): 70
Method: QSAR

Partition coefficient: n-octanol/water : log Pow: 3.3 (25 °C)

Tridecanol, branched, ethoxylated:

Partition coefficient: n-octanol/water : log Pow: 4.73 (25 °C)

Fluxapyroxad:

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Exposure time: 28 d
Bioconcentration factor (BCF): 36 - 37
Method: OECD Test Guideline 305
Remarks: Bioaccumulation is unlikely.

Tristyrylphenol ethoxylates:

Partition coefficient: n-octanol/water : Remarks: No data available

metconazole (ISO):

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 51 - 80
Remarks: Bioaccumulation is unlikely.

12.4 Mobility in soil

Product:

Distribution among environmental compartments : Remarks: No data is available on the product itself.

Components:

Fluxapyroxad:

Distribution among environmental compartments : Remarks: Low mobility in soil

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metconazole (ISO):

Distribution among environmental compartments : Remarks: Low mobility in soil

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.

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.

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Do not re-use empty containers.
Packaging that is not properly emptied must be disposed of as the unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number

ADN : UN 3082

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

14.2 UN proper shipping name

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

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADN	:	9
ADR	:	9
RID	:	9
IMDG	:	9
IATA	:	9

14.4 Packing group

ADN	
Packing group	: III
Classification Code	: M6
Hazard Identification Number	: 90
Labels	: 9
ADR	
Packing group	: III
Classification Code	: M6
Hazard Identification Number	: 90
Labels	: 9
Tunnel restriction code	: (-)
RID	
Packing group	: III

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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

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : 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.

SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

UK REACH List of restrictions (Annex 17)	: Conditions of restriction for the following entries should be considered: Number on list 3
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Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)- (Number on list 3)
Polyalkylene oxide derivative of a synthetic alcohol (Number on list 3)
Tridecanol, branched, ethoxylated (Number on list 3)
Poly(oxy-1,2-ethanediyl), .alpha.-phenyl-.omega.-hydroxy-, styrenated (Number on list 3)
Tristyryl phenol-polyethylene glycol-phosphoric acid ester (Number on list 3)

UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation : Not applicable

The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain) : Not applicable

Regulation (EU) No 2024/590 on substances that deplete the ozone layer : Not applicable

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

Control of Major Accident Hazards Regulations 2015 (COMAH) E1 ENVIRONMENTAL HAZARDS

The components of this product are reported in the following inventories:

TCSI	: Not in compliance with the inventory
TSCA	: Product contains substance(s) not listed on TSCA inventory.
AIIC	: Not in compliance with the inventory
DSL	: This product contains the following components that are not on the Canadian DSL nor NDSL. Polyalkylene oxide derivative of a synthetic alcohol Fluxapyroxad metconazole (ISO) Poly(oxy-1,2-ethanediyl), .alpha.-phenyl-.omega.-hydroxy-, styrenated Propanoic acid, 2-hydroxy-, 2-ethylhexyl ester, (2S)-
ENCS	: Not in compliance with the inventory

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ISHL	: Not in compliance with the inventory
KECI	: Not in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: Not in compliance with the inventory
NZIoC	: Not in compliance with the inventory
TECI	: Not in compliance with the inventory

15.2 Chemical safety assessment

A chemical safety assessment is not required for this product (mixture).

SECTION 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.
H319	: Causes serious eye irritation.
H361d	: Suspected of damaging the unborn child.
H362	: May cause harm to breast-fed children.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
H411	: Toxic to aquatic life with long lasting effects.
H412	: Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Dam.	: Serious eye damage
Eye Irrit.	: Eye irritation
Lact.	: Effects on or via lactation
Repr.	: Reproductive toxicity
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good La-

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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; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:

Skin Sens. 1	H317
Eye Irrit. 2	H319
Acute Tox. 4	H332
Repr. 2	H361d
Lact.	H362
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Classification procedure:

Based on product data or assessment
Based on product data or assessment
Based on product data or assessment
Calculation method
Calculation method
Based on product data or assessment
Based on product data or assessment

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