

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



BEFLEX®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	22.10.2024	50000679	Date of first issue: 22.10.2024

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

1.1 Product identifier

Product name BEFLEX®

Other means of identification

Product code 50000679

Unique Formula Identifier (UFI) : 5ATY-Q23W-JN49-C1K0

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

Use of the Substance/Mixture : Herbicide

Recommended restrictions on use : Use as recommended by the label.
For professional users only.

1.3 Manufacturer or supplier's details

Supplier Address FMC Agricultural Solutions A/S
Thyborønvej 78
DK-7673 Harbøre
Denmark

Telephone: +45 9690 9690
Telefax: +45 9690 9691
E-mail address: SDS-Info@fmc.com .

1.4 Emergency telephone number

For leak, fire, spill or accident emergencies, call:
Emergency telephone number: 112
Croatia: +385-17776920 (CHEMTREC)

Medical emergency:
Medical Information Phone Number: 01-23-48-342
All other countries: +1 651 / 632-6793 (Collect)

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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification REGULATION (EC) No 1272/2008

Skin sensitisation, Sub-category 1A	H317: May cause an allergic skin reaction.
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)

Hazard pictograms :



Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of water and soap.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P391 Collect spillage.
Disposal:
P501 Dispose of contents/container as hazardous waste in accordance with local regulations.

Hazardous components which must be listed on the label:

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

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.

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2.3 Other hazards

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

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

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

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification REGULATION (EC) No 1272/2008	Concentration (% w/w)
beflubutamid (ISO)	113614-08-7 616-165-00-2	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 100 M-Factor (Chronic aquatic toxicity): 100	>= 30 - < 50
Sulfurous acid, monosodium salt, reaction products with cresol- formaldehydenonylphenol poly- mer (average MW 300-600)	115535-44-9	Aquatic Chronic 3; H412	>= 1 - < 2,5
1,2-benzisothiazol-3(2H)-one	2634-33-5 220-120-9 613-088-00-6	Acute Tox. 2; H330 Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 0,025 - < 0,05

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		<div>specific concentration limit Skin Sens. 1A; H317 >= 0,036 %</div> <div>Acute toxicity estimate Acute oral toxicity: 450 mg/kg Acute inhalation toxicity (dust/mist): 0,21 mg/l</div>	
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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 | : First Aid responders should pay attention to self-protection and use the recommended protective clothing
Avoid inhalation, ingestion and contact with skin and eyes.
If potential for exposure exists refer to Section 8 for specific personal protective equipment. |
| If inhaled | : Remove to fresh air.
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 | : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist. |

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If swallowed : Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Do not induce vomiting without medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Risks : May cause an allergic skin reaction.

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.

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

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.
Nitrogen oxides (NO_x)
Carbon oxides
Fluorine compounds
Sulphur oxides
Hydrogen fluoride

5.3 Advice for firefighters

Special protective equipment for firefighters : Firefighters should wear protective clothing and self-contained breathing apparatus.

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.

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.

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Do not touch or walk through the spilled material.
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 : Neutralise with acid.
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.
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.

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

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.

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Further information on storage conditions : The product is stable under normal conditions of warehouse storage. Protect from heat and direct sunlight. 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. 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

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
propane-1,2-diol	57-55-6	GVI (Sum of vapour and particles)	150 ppm 474 mg/m ³	HR OEL
		GVI (particulate)	10 mg/m ³	HR OEL

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

Substance name	End Use	Exposure routes	Potential health effects	Value
1,2-benzisothiazol-3(2H)-one	Workers	Inhalation	Long-term systemic effects	6,81 mg/m ³
	Workers	Dermal	Long-term systemic effects	0,966 mg/kg
	Consumers	Inhalation	Long-term systemic effects	1,2 mg/m ³
	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
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/l
	Marine sediment	0,00499 mg/l

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8.2 Exposure controls

Personal protective equipment

- | | | |
|--------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye/face protection | : | Eye wash bottle with pure water
Tightly fitting safety goggles |
| 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 instructions.
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 | : | beige |
| Odour | : | aseptic |
| Odour Threshold | : | not determined |
| Melting point/freezing point | : | not determined |
| Boiling point/boiling range | : | not determined |
| Flammability | : | ignitable |
| Upper explosion limit / Upper flammability limit | : | not determined |
| Lower explosion limit / Lower flammability limit | : | not determined |
| Flash point | : | 102 °C |
| Auto-ignition temperature | : | No data available |
| Decomposition temperature | : | not determined |
| pH | : | 11 |
| | | Concentration: 1 % |
| Viscosity | : | |
| Viscosity, dynamic | : | 71 mPa.s (20 °C) |

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Viscosity, kinematic	: 62 mm ² /s (20 °C)
Solubility(ies)	
Water solubility	: dispersible
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Vapour pressure	: Not available for this mixture.
Relative density	: No data available
Density	: ca. 1.150 g/cm ³
Relative vapour density	: not determined
Particle characteristics	
Particle size	: Not applicable
Particle Size Distribution	: Not applicable
Shape	: Not applicable

9.2 Other information

Explosives	: No data available
Oxidizing properties	: No data available
Self-ignition	: not auto-flammable

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.
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10.4 Conditions to avoid

Conditions to avoid	: Avoid extreme temperatures Heat, flames and sparks. Heating of the mixture may evolve harmful and irritant vapours.
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10.5 Incompatible materials

Materials to avoid	: Avoid strong acids, bases, and oxidizers
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10.6 Hazardous decomposition products

Stable under recommended storage conditions.

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SECTION 11: Toxicological information

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

Acute toxicity

Based on available data, the classification criteria are not met.

Product:

Acute oral toxicity	:	LD50 (Rat): > 2.000 mg/kg Method: OECD Test Guideline 423
Acute inhalation toxicity	:	LC50 (Rat): > 3,2 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): > 2.000 mg/kg Method: OECD Test Guideline 402

Components:

beflubutamid (ISO):

Acute oral toxicity	:	LD50 (Rat): > 5.000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 5 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): > 2.000 mg/kg

Sulfurous acid, monosodium salt, reaction products with cresol-formaldehydenonylphenol polymer (average MW 300-600):

Acute oral toxicity	:	LD50 (Rat): > 2.000 mg/kg Method: OECD Test Guideline 401 Assessment: The substance or mixture has no acute oral toxicity Remarks: Based on data from similar materials
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1,2-benzisothiazol-3(2H)-one:

Acute oral toxicity	:	LD50 (Rat, male and female): 490 mg/kg Method: OECD Test Guideline 401 Acute toxicity estimate: 450 mg/kg Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008 Remarks: Based on EU Harmonised classification - Annex VI of Regulation (EC) No 1272/2008 (CLP Regulation)
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Acute inhalation toxicity : Acute toxicity estimate: 0,21 mg/l
Test atmosphere: dust/mist
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008
Remarks: Based on EU Harmonised classification - Annex VI of Regulation (EC) No 1272/2008 (CLP Regulation)

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Product:

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

Components:

beflubutamid (ISO):

Species : Rabbit
Result : No skin irritation

Sulfurous acid, monosodium salt, reaction products with cresol-formaldehydenonylphenol polymer (average MW 300-600):

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation
Remarks : Based on data from similar materials

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

Species : Rabbit
Exposure time : 72 h
Method : OECD Test Guideline 404
Result : No skin irritation

Serious eye damage/eye irritation

Based on available data, the classification criteria are not met.

Product:

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

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Components:

beflubutamid (ISO):

Species	:	Rabbit
Result	:	No eye irritation

Sulfurous acid, monosodium salt, reaction products with cresol-formaldehydenonylphenol polymer (average MW 300-600):

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	No eye irritation
Remarks	:	Based on data from similar materials

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

Species	:	Bovine cornea
Method	:	OECD Test Guideline 437
Result	:	No eye irritation

Species	:	Rabbit
Method	:	EPA OPP 81-4
Result	:	Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Based on available data, the classification criteria are not met.

Product:

Assessment	:	The product is a skin sensitizer, sub-category 1A.
Remarks	:	According to calculation method of Regulation (EC) No 1272/2008.

Components:

beflubutamid (ISO):

Species	:	Guinea pig
Result	:	Not a skin sensitizer.

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

Test Type	:	Maximisation Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	May cause sensitisation by skin contact.

Species	:	Guinea pig
Method	:	FIFRA 81.06
Result	:	May cause sensitisation by skin contact.

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Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Product:

Germ cell mutagenicity- Assessment : Contains no ingredient listed as a mutagen

Components:

beflubutamid (ISO):

Genotoxicity in vitro : Test Type: Ames test
Result: negative

Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

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

Genotoxicity in vitro : Test Type: gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Test Type: Ames test
Method: OECD Test Guideline 471
Result: negative

Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: positive

Genotoxicity in vivo : Test Type: unscheduled DNA synthesis assay
Species: Rat (male)
Cell type: Liver cells
Application Route: Ingestion
Exposure time: 4 h
Method: OECD Test Guideline 486
Result: negative

Test Type: Micronucleus test
Species: Mouse
Application Route: Oral
Method: OECD Test Guideline 474
Result: negative

Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

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Carcinogenicity

Based on available data, the classification criteria are not met.

Product:

Carcinogenicity - Assessment : Contains no ingredient listed as a carcinogen

Components:

beflubutamid (ISO):

Species : Rat, male
NOAEL : 500 ppm
Result : negative

Species : Mouse
Exposure time : >80 weeks
Result : negative

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

Reproductive toxicity

Based on available data, the classification criteria are not met.

Product:

Reproductive toxicity - Assessment : Contains no ingredient listed as toxic to reproduction

Components:

beflubutamid (ISO):

Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

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

Effects on fertility : Species: Rat, male
Application Route: Ingestion
General Toxicity - Parent: NOAEL: 18,5 mg/kg body weight
General Toxicity F1: NOAEL: 48 mg/kg body weight
Fertility: NOAEL: 112 mg/kg bw/day
Symptoms: No effects on reproduction parameters
Method: OPPTS 870.3800
Result: negative

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

STOT - single exposure

Based on available data, the classification criteria are not met.

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Product:

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

Components:

beflubutamid (ISO):

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.
Remarks : No significant adverse effects were reported

STOT - repeated exposure

Based on available data, the classification criteria are not met.

Product:

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

Components:

beflubutamid (ISO):

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

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

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

Repeated dose toxicity

Components:

beflubutamid (ISO):

Species : Rat
NOEL : 30 mg/kg
Application Route : Oral - feed
Exposure time : 90 days
Symptoms : Reduced body weight

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

Species : Rat, male and female
NOAEL : 15 mg/kg
Application Route : Ingestion
Exposure time : 28 d
Method : OECD Test Guideline 407
Symptoms : Irritation

Species : Rat, male and female
NOAEL : 69 mg/kg

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Application Route	:	Ingestion
Exposure time	:	90 d
Symptoms	:	Irritation, Reduced body weight

Aspiration toxicity

Based on available data, the classification criteria are not met.

Product:

The mixture does not have properties associated with aspiration hazard potential.

Components:

beflubutamid (ISO):

The substance does not have properties associated with aspiration hazard potential.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

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

Product:

Remarks	:	No data available
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SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	NOEC (Fish): > 10 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 9,99 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 0,0173 mg/l Exposure time: 72 h

Components:

beflubutamid (ISO):

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Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 1,86 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1,64 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Selenastrum capricornutum (green algae)): 0,00445 mg/l Exposure time: 72 h EC50 (Lemna minor (duckweed)): 0,02 mg/l Exposure time: 72 h EC50 (Anabaena flos-aquae (cyanobacterium)): > 3,31 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	100
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,11 mg/l Exposure time: 21 d Species: Pimephales promelas (fathead minnow)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,455 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	:	100
Toxicity to soil dwelling organisms	:	LC50: 366 mg/kg soil Species: Eisenia fetida (earthworms)
Toxicity to terrestrial organisms	:	LD50: > 200 µg/bee End point: Acute oral toxicity Species: Apis mellifera (bees) LD50: > 200 µg/bee End point: Acute contact toxicity Species: Apis mellifera (bees) LD50: > 2.000 mg/kg Species: Colinus virginianus (Bobwhite quail)

Sulfurous acid, monosodium salt, reaction products with cresol-formaldehydenonylphenol polymer (average MW 300-600):

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): > 10 - 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 Remarks: Based on data from similar materials
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Toxicity to microorganisms : EC50 (Bacteria): > 1.000 mg/l
Remarks: Based on data from similar materials

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

Toxicity to fish : LC50 (Cyprinodon variegatus (sheepshead minnow)): 16,7 mg/l
Exposure time: 96 h
Test Type: static test

LC50 (Oncorhynchus mykiss (rainbow trout)): 2,15 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2,9 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)): 0,070 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0,04 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (activated sludge): 24 mg/l
Exposure time: 3 h
Test Type: Respiration inhibition
Method: OECD Test Guideline 209

EC50 (activated sludge): 12,8 mg/l
Exposure time: 3 h
Test Type: Respiration inhibition
Method: OECD Test Guideline 209

M-Factor (Chronic aquatic toxicity) : 1

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: Not readily biodegradable.
Estimation based on data obtained on active ingredient.
Product contains minor amounts of not readily biodegradable components, which may not be degradable in waste water treatment plants.

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Components:

beflubutamid (ISO):

Biodegradability : Result: Not readily biodegradable.

Sulfurous acid, monosodium salt, reaction products with cresol-formaldehydenonylphenol polymer (average MW 300-600):

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 10 - 35 %

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

Biodegradability : Result: rapidly biodegradable
Method: OECD Test Guideline 301C

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Low potential for bioaccumulation
Estimation based on data obtained on active ingredient.

Components:

beflubutamid (ISO):

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 140
Remarks: Low potential for bioaccumulation
See section 9 for octanol-water partition coefficient.

Partition coefficient: n-octanol/water : log Pow: 4,28 (21 °C)

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

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Exposure time: 56 d
Bioconcentration factor (BCF): 6,62
Method: OECD Test Guideline 305
Remarks: Substance is not persistent, bioaccumulative, and toxic (PBT).

Partition coefficient: n-octanol/water : log Pow: 0,7 (20 °C)
pH: 7

log Pow: 0,99 (20 °C)
pH: 5

12.4 Mobility in soil

Product:

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Distribution among environmental compartments : Remarks: The product is not expected to be mobile in soils. Estimation based on data obtained on active ingredient.

Components:

beflubutamid (ISO):

Distribution among environmental compartments : Remarks: immobile

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

Distribution among environmental compartments : Koc: 9,33 ml/g, log Koc: 0,97
Method: OECD Test Guideline 121
Remarks: Highly mobile in soils

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 Endocrine disrupting properties

Product:

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

Components:

beflubutamid (ISO):

Assessment : The substance is not known to have endocrine disrupting properties.

12.7 Other adverse effects

Product:

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

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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 or ID number

ADN	: UN 3082
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. (Beflubutamid)
ADR	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Beflubutamid)
RID	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Beflubutamid)
IMDG	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Beflubutamid)
IATA	: Environmentally hazardous substance, liquid, n.o.s. (Beflubutamid)

14.3 Transport hazard class(es)

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

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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
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
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ADR

Environmentally hazardous	: yes
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RID

Environmentally hazardous	: yes
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IMDG

Marine pollutant	: yes
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IATA (Passenger)

Environmentally hazardous	: yes
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IATA (Cargo)

Environmentally hazardous	: yes
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14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 3
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
Regulation (EC) on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
Regulation (EU) 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.	E1	ENVIRONMENTAL HAZARDS
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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.

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BEFLUBUTAMID TECHNICAL
sodium hydroxide
Sulfurous acid, monosodium salt, reaction products with cresol-formaldehydenonylphenol polymer (average MW 300-600)
Naphthalenesulfonic acid, methyl-, polymer with formaldehyde, sodium salt

ENCS	: Not in compliance with the inventory
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.
H330	: Fatal if inhaled.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
H412	: Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Dam.	: Serious eye damage
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
HR OEL	: Croatia. Regulations on limit values for exposure to hazardous substances at work and on the biological limit values.
HR OEL / GVI	: time weighted average

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; Regula-

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tion (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals 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:

Skin Sens. 1A	H317
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Classification procedure:

Calculation method
Based on product data or assessment
Calculation method

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