FUNDATIS®

Version	Revision Date:	SDS Number:	Date of last issue: 07.11.2024
1.3	09.04.2025	50002671	Date of first issue: 25.04.2023

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

1.1 Product identifier

Product name FUNDATIS®

Other means of identification

Product code 50002671

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

Use of the Sub-stance/Mixture : Herbicide

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

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)

Eye irritation, Category 2 H319: Causes serious eye irritation.

Skin sensitisation, Category 1	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) 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.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P261 Avoid breathing mist or vapours.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: 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:
Cloquintocet-mexyl
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.

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)
Bixlozone	81777-95-9	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 ——————— M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	>= 10 - < 20
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	>= 10 - < 20
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5 265-198-5 649-424-00-3	Asp. Tox. 1; H304	>= 1 - < 10
sodium nitrate	7631-99-4 231-554-3	Ox. Sol. 2; H272 Acute Tox. 4; H302 Eye Irrit. 2; H319	>= 1 - < 10
Calcium chloride dihydrate	10035-04-8	Eye Irrit. 2; H319	>= 1 - < 10
Cloquintocet-mexyl	99607-70-2	Acute Tox. 4; H302 Skin Sens. 1B;	>= 2.5 - < 10

	01-0000012013-89-0000	H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	
Lignosulfonic acid, sodium salt, sulfomethylated	68512-34-5	Eye Irrit. 2; H319	>= 1 - < 10
1,2-benzisothiazol-3(2H)-one	2634-33-5 220-120-9 613-088-00-6	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 2; H411 _____ M-Factor (Acute aquatic toxicity): 10 _____ specific concentration limit Skin Sens. 1A; H317 >= 0.036 %	>= 0.0025 - < 0.025

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 : 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 ambu-

lance.

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 give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Take victim immediately to hospital. Do not induce vomiting without medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	Allergic reactions
Risks	:	May cause an allergic skin reaction. Causes serious eye irritation.

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. Nitrogen oxides (NOx) Carbon oxides Sulphur oxides

Sodium oxides
Hydrogen chloride
Hydrogen cyanide
Hydrogen fluoride
Fluorine compounds
Chlorinated compounds

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.

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.
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	:	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. 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 fire and explosion	:	Normal measures for preventive fire protection.
Hygiene measures	:	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 resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.
Further information on storage conditions	:	The product is stable under normal conditions of warehouse storage. 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

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL)

Substance name	End Use	Exposure routes	Potential health effects	Value
Cloquintocet-mexyl	Workers	Inhalation	Long-term systemic effects	0.303 mg/m3
	Workers	Dermal	Long-term systemic effects	3.33 mg/kg bw/day
	Consumers	Inhalation	Long-term local effects	0.075 mg/m3
1,2-benzisothiazol-3(2H)-one	Workers	Inhalation	Long-term systemic effects	6.81 mg/m3
	Workers	Dermal	Long-term systemic effects	0.966 mg/kg
	Consumers	Inhalation	Long-term systemic effects	1.2 mg/m3
	Consumers	Dermal	Long-term systemic effects	0.345 mg/kg

Predicted No Effect Concentration (PNEC)

Substance name	Environmental Compartment	Value
Cloquintocet-mexyl	Fresh water	0.002 mg/l
	Fresh water sediment	0.934 mg/kg dry weight (d.w.)
	Soil	0.312 mg/kg dry weight (d.w.)
	Marine water	0 mg/l
	Sewage treatment plant	100 mg/kg
	Marine sediment	0.093 mg/kg dry weight (d.w.)
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

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	:	light brown
Odour	:	slight, pungent
pH	:	ca. 8.24 (25 °C) Concentration: 1 % Method: CIPAC MT 75.3 (as aqueous dispersion)
Melting point/freezing point	:	not determined
Boiling point/boiling range	:	not determined
Flash point	:	> 100 °C No flash up to boiling point.
Evaporation rate	:	not determined
Upper explosion limit / Upper flammability limit	:	Not available for this mixture.
Lower explosion limit / Lower flammability limit	:	Not available for this mixture.
Vapour pressure	:	Not available for this mixture.
Relative vapour density	:	not determined
Relative density	:	ca. 1.155Method: Regulation (EC) No. 440/2008, Annex, A.3
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	:	429 °C Method: Regulation (EC) No. 440/2008, Annex, A.15
Decomposition temperature	:	not determined
Viscosity		
Viscosity, dynamic	:	608.87 mPa,s (20 °C) Method: CIPAC MT 192 40 rpm 490.90 mPa,s (40 °C) Method: CIPAC MT 192 40 rpm
Viscosity, kinematic	:	No data available
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

Flammability (liquids)	:	Not applicable
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. Protect from frost, heat and sunlight. Heating of the product will produce harmful and irritant vapours.

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

Not classified based on available information.

Components:

Bixlozone:

Acute oral toxicity	:	LD50 (Rat, female): > 2,000 mg/kg Method: OECD Test Guideline 425 Symptoms: hypoactivity, Breathing difficulties GLP: yes Assessment: The component/mixture is minimally toxic after single ingestion. Remarks: no mortality Minimal effects that do not meet the threshold for classification.
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 2.11 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Symptoms: Breathing difficulties GLP: yes Remarks: no mortality
Acute dermal toxicity	:	LD50 (Rat, male and female): > 2,000 mg/kg Method: OECD Test Guideline 402 Symptoms: Irritation GLP: yes Assessment: The component/mixture is minimally toxic after single contact with skin. Remarks: no mortality Minimal effects that do not meet the threshold for classification.

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

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 inhalation toxicity : LC50 (Rat): > 4.688 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

sodium nitrate:

Acute oral toxicity : LD50 (Rat, male and female): 3,430 mg/kg
Method: OECD Test Guideline 401

LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 425

Acute inhalation toxicity : LD50 (Rat): > 0.527 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 402

Calcium chloride dihydrate:

Acute oral toxicity : LD50 (Rat, male): 2,120 mg/kg
Method: OECD Test Guideline 401
Remarks: mortality

LD50 (Rat, female): 2,361 mg/kg
Method: OECD Test Guideline 401
Remarks: mortality

LD50 (Rat, male and female): 2,301 mg/kg
Method: OECD Test Guideline 401
Symptoms: Lethargy, Necrosis, Gastrointestinal disturbance, respiratory tract irritation
Remarks: mortality

Acute dermal toxicity : LD50 (Rabbit, male and female): > 5,000 mg/kg
Remarks: no mortality

Cloquintocet-mexyl:

Acute oral toxicity	:	LD50 (Rat): 1,098 mg/kg Method: OECD Test Guideline 425
Acute inhalation toxicity	:	LC50 (Rat): > 5.05 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403
Acute dermal toxicity	:	LD50 Dermal (Rat): > 2,000 mg/kg Method: OECD Test Guideline 402

Lignosulfonic acid, sodium salt, sulfomethylated:

Acute oral toxicity	:	LD50 (Rat, female): > 10 g/kg

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

Acute oral toxicity	:	LD50 (Rat, male and female): 490 mg/kg Method: OECD Test Guideline 401
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

Not classified based on available information.

Product:

Remarks	:	May cause mild irritation. Based on available data, the classification criteria are not met.

Components:

Bixlozone:

Species	:	Rabbit
Assessment	:	Not classified as irritant
Method	:	OECD Test Guideline 404
Result	:	slight or no skin irritation.
GLP	:	yes
Remarks	:	Minimal effects that do not meet the threshold for classification.

beflubutamid (ISO):

Species	:	Rabbit
Result	:	No skin irritation

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Species	:	Rabbit
Assessment	:	Repeated exposure may cause skin dryness or cracking.
Result	:	No skin irritation
Remarks	:	Minimal effects that do not meet the threshold for classification. Based on data from similar materials

Calcium chloride dihydrate:

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

Cloquintocet-mexyl:

Species	:	Rabbit
Assessment	:	No skin irritation
Method	:	OECD Test Guideline 404
Remarks	:	Minimal effects that do not meet the threshold for classification.

Lignosulfonic acid, sodium salt, sulfomethylated:

Result	:	No skin irritation

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

Causes serious eye irritation.

Product:

Remarks	:	Eye irritation According to calculation method of Regulation (EC) No 1272/2008.

Components:

Bixlozone:

Species	:	Rabbit
Assessment	:	Not classified as irritant
Method	:	OECD Test Guideline 405
Result	:	Slight or no eye irritation
GLP	:	yes
Remarks	:	Minimal effects that do not meet the threshold for classification.

beflubutamid (ISO):

Species	:	Rabbit
Result	:	No eye irritation

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Species	:	Rabbit
Assessment	:	No eye irritation
Remarks	:	Minimal effects that do not meet the threshold for classification. Based on data from similar materials

sodium nitrate:

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

Calcium chloride dihydrate:

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

Cloquintocet-mexyl:

Species	:	Rabbit
Assessment	:	No eye irritation
Method	:	OECD Test Guideline 405
Remarks	:	Minimal effects that do not meet the threshold for classification.

Lignosulfonic acid, sodium salt, sulfomethylated:

Result	:	Eye irritation

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

Not classified based on available information.

Product:

Remarks	:	May cause sensitisation by skin contact. According to calculation method of Regulation (EC) No 1272/2008.

Components:

Bixlozone:

Test Type	:	Local lymph node assay (LLNA)
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	Does not cause skin sensitisation.
GLP	:	yes

beflubutamid (ISO):

Species	:	Guinea pig
Result	:	Not a skin sensitizer.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Test Type	:	Maximisation Test
Species	:	Guinea pig
Result	:	Not a skin sensitizer.
Remarks	:	Based on data from similar materials

sodium nitrate:

Test Type	:	Local lymph node assay (LLNA)
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	Does not cause skin sensitisation.

Cloquintocet-mexyl:

Species	:	Guinea pig
Method	:	OECD Test Guideline 429
Result	:	The product is a skin sensitiser, sub-category 1B.

Lignosulfonic acid, sodium salt, sulfomethylated:

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.

Germ cell mutagenicity

Not classified based on available information.

Components:

Bixlozone:

Genotoxicity in vitro	:	Test Type: Ames test Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative GLP: yes Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 490 Result: negative GLP: yes Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative GLP: yes
Genotoxicity in vivo	:	Test Type: Micronucleus test Cell type: Bone marrow Method: OECD Test Guideline 474 Result: negative GLP: yes
Germ cell mutagenicity- Assessment	:	Animal testing did not show any mutagenic effects.

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.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

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

Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Bone marrow chromosome aberration
Species: Rat
Application Route: inhalation (vapour)
Result: negative

sodium nitrate:

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

Genotoxicity in vivo : Test Type: unscheduled DNA synthesis assay
Species: Mouse
Application Route: Oral
Result: negative

Calcium chloride dihydrate:

Genotoxicity in vitro : Test Type: reverse mutation assay
Metabolic activation: Metabolic activation
Result: negative

Test Type: Chromosome aberration test in vitro
Result: negative

Germ cell mutagenicity- Assessment : In vitro tests did not show mutagenic effects

Cloquintocet-mexyl:

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

Test Type: gene mutation test
Test system: Chinese hamster lung cells
Method: OECD Test Guideline 476
Result: negative

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Method: OECD Test Guideline 473
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Chinese hamster (male and female)
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.

Lignosulfonic acid, sodium salt, sulfomethylated:

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

Genotoxicity in vivo : Remarks: No data available

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.

Carcinogenicity

Not classified based on available information.

Components:

Bixlozone:

Species : Mouse, male
Application Route : Oral

Exposure time	:	18 month(s)
	:	647 mg/kg bw/day
Method	:	OECD Test Guideline 451
Result	:	negative
GLP	:	yes
Species	:	Rat, female
Application Route	:	Oral
Exposure time	:	2 Years
NOAEL	:	167 mg/kg bw/day
Method	:	OECD Test Guideline 453
Result	:	negative
GLP	:	yes
Carcinogenicity - Assessment	:	Animal testing did not show any carcinogenic effects.

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Species	:	Rat, male and female
Application Route	:	inhalation (vapour)
Exposure time	:	12 month(s)
NOAEC	:	1.8 mg/l
Result	:	negative
Remarks	:	Based on data from similar materials
Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

Cloquintocet-mexyl:

Species	:	Mouse, male
Application Route	:	Oral
Exposure time	:	18 month(s)
Dose	:	1.1, 11, 111, 583 mg/kg
NOAEL	:	111 mg/kg body weight
Result	:	negative
Carcinogenicity - Assessment	:	Weight of evidence does not support classification as a carcinogen

Lignosulfonic acid, sodium salt, sulfomethylated:

Remarks : No data available

Reproductive toxicity

Not classified based on available information.

Components:

Bixlozone:

Effects on fertility : Test Type: Two-generation study
Species: Rat, male
General Toxicity - Parent: NOAEL: 140 mg/kg bw/day
Early Embryonic Development: NOAEL: 34 - 60 mg/kg bw/day
Method: OECD Test Guideline 416
GLP: yes

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL: 75 mg/kg bw/day
Embryo-foetal toxicity: NOAEL: 550 mg/kg bw/day
Method: OECD Test Guideline 414
Result: negative
GLP: yes

Test Type: Embryo-foetal development
Species: Rabbit
Application Route: Oral
Dose: 25, 75, 200, 400 mg/kg bw/day
General Toxicity Maternal: NOAEL: 400 mg/kg bw/day
Embryo-foetal toxicity: NOAEL: 400 mg/kg bw/day
Method: OECD Test Guideline 414
Result: negative
GLP: yes

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

beflubutamid (ISO):

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

sodium nitrate:

Effects on fertility : Test Type: reproductive and developmental toxicity study
Species: Rat
Application Route: Oral
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development	:	Test Type: reproductive and developmental toxicity study Species: Rat Application Route: Oral Result: negative

Calcium chloride dihydrate:

Effects on foetal development	:	Species: Rabbit Application Route: Oral Dose: 1.69, 7.85, 35.6, 169 mg/kg/d Duration of Single Treatment: 13 d General Toxicity Maternal: NOAEL: > 169 mg/kg bw/day Embryo-foetal toxicity: NOAEL: > 169 mg/kg bw/day Result: negative
Reproductive toxicity - Assessment	:	Weight of evidence does not support classification for reproductive toxicity

Cloquintocet-mexyl:

Effects on fertility	:	General Toxicity F1: NOAEL: 420 mg/kg body weight Fertility: NOAEL: 830 mg/kg body weight Method: OECD Test Guideline 416 Result: No effects on fertility and early embryonic development were detected.
Effects on foetal development	:	Species: Rabbit Application Route: Oral Dose: 0, 10, 60, 300 mg/kg bw/d General Toxicity Maternal: NOAEL: 60 mg/kg body weight Teratogenicity: NOAEL: 300 mg/kg body weight Developmental Toxicity: NOAEL: 60 mg/kg body weight Method: OECD Test Guideline 414 Result: negative
Reproductive toxicity - Assessment	:	Weight of evidence does not support classification for reproductive toxicity

Lignosulfonic acid, sodium salt, sulfomethylated:

Effects on fertility	:	Remarks: No data available
Effects on foetal development	:	Remarks: No data available

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

Not classified based on available information.

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

Cloquintocet-mexyl:

Remarks : No significant adverse effects were reported

Lignosulfonic acid, sodium salt, sulfomethylated:

Remarks : No data available

STOT - repeated exposure

Not classified based on available information.

Components:

beflubutamid (ISO):

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

Calcium chloride dihydrate:

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

Lignosulfonic acid, sodium salt, sulfomethylated:

Remarks : No data available

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:

Bixlozone:

Species	:	Rat, male
NOAEL	:	121 mg/kg bw/day
Application Route	:	Oral - feed
Exposure time	:	90 days
Method	:	OECD Test Guideline 408
GLP	:	yes

Species	:	Rat, female
NOAEL	:	351 mg/kg bw/day
Application Route	:	Oral - feed
Exposure time	:	90 days
Method	:	OECD Test Guideline 424
GLP	:	yes
Target Organs	:	Nervous system

Species	:	Rat, male
NOAEL	:	359 mg/kg bw/day
Application Route	:	Oral - feed
Exposure time	:	28 days
Method	:	OECD Test Guideline 407
GLP	:	yes
Target Organs	:	Liver

Species	:	Rat
NOAEL	:	1000 mg/kg bw/day
Application Route	:	Dermal
Exposure time	:	21 d
Method	:	OECD Test Guideline 410
GLP	:	yes

beflubutamid (ISO):

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Species	:	Rat, male and female
NOAEC	:	0.9 - 1.8 mg/l
Application Route	:	inhalation (vapour)
Exposure time	:	12 Months

Cloquintocet-mexyl:

Species	:	Rat, male

NOAEL	:	3.77 mg/kg
Application Route	:	Oral
Exposure time	:	2 y
Dose	:	0.37, 3.8, 38, 75 mg/kg
Method	:	OECD Test Guideline 451

Species	:	Rat, male and female
NOAEL	:	9.66 - 10.2 mg/kg
Application Route	:	Oral
Exposure time	:	90 d
Dose	:	2.0, 9.7, 64, 384 mg/kg
Target Organs	:	Bladder

Species	:	Rat, male and female
NOAEL	:	1,000 mg/kg
Application Route	:	Skin contact
Exposure time	:	28 d
Dose	:	0, 50, 200 and 1000 mg/kg
Method	:	OECD Test Guideline 410

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

Aspiration toxicity

Not classified based on available information.

Components:

Bixlozone:

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

beflubutamid (ISO):

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

May be fatal if swallowed and enters airways.

Cloquintocet-mexyl:
No aspiration toxicity classification

Experience with human exposure

Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:
Skin contact : Symptoms: Repeated exposure may cause skin dryness or cracking.

Neurological effects

Components:

Bixlozone:
No neurotoxicity observed in animal studies

Further information

Product:
Remarks : No data available

Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:
Remarks : Vapour concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. Prolonged and/or repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Americamysis bahia (mysid shrimp)): 7.1 mg/l
Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): 1.2 mg/l EyC50 (Raphidocelis subcapitata (freshwater green alga)):

0.75 mg/l

EbC50 (Raphidocelis subcapitata (freshwater green alga)): 0.96 mg/l

Toxicity to soil dwelling organisms : NOEC: 225 mg/kg
Exposure time: 56 d
Species: Eisenia andrei (red worm)

Toxicity to terrestrial organisms : LD50: > 217 µg/bee
Exposure time: 48 h
End point: Acute oral toxicity
Species: Apis mellifera (bees)

LD50: > 200 µg/bee
Exposure time: 48 h
End point: Acute contact toxicity
Species: Apis mellifera (bees)

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.
Remarks: According to calculation method of Regulation (EC) No 1272/2008.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.
Remarks: According to calculation method of Regulation (EC) No 1272/2008.

Components:

Bixlozone:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 9.8 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
GLP: yes

LC50 (Cyprinodon variegatus (sheepshead minnow)): > 14 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
GLP: yes

NOEC (Cyprinodon variegatus (sheepshead minnow)): 2.2 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
GLP: yes

		LC50 (Lepomis macrochirus (Bluegill sunfish)): > 13 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203 GLP: yes NOEC (Lepomis macrochirus (Bluegill sunfish)): 3.2 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203 GLP: yes
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Thamnocephalus platyurus): 0.11 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 EC50 (Daphnia magna (Water flea)): 13 mg/l End point: Immobilization Exposure time: 48 h Method: OECD Test Guideline 202 GLP: yes
Toxicity to algae/aquatic plants	:	NOEC (Myriophyllum spicatum): 0.0096 mg/l Exposure time: 14 d Method: OECD Test Guideline 239 ErC50 (Pseudokirchneriella subcapitata (microalgae)): 14 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 GLP: yes
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC: 0.38 mg/l Exposure time: 32 d Species: Pimephales promelas (fathead minnow) Test Type: Early Life-Stage Method: OECD Test Guideline 210 GLP: yes NOEC: 0.1 mg/l End point: reproduction Exposure time: 21 d Species: Pimephales promelas (fathead minnow) Test Type: flow-through test Method: OECD Test Guideline 229 GLP: yes
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 3.1 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)

Test Type: Static renewal test
Method: OECD Test Guideline 211
GLP: yes

NOEC: 0.12 mg/l
Exposure time: 28 d
Species: Americamysis bahia (mysid shrimp)
Test Type: Reproduction Test
Method: OPPTS 850.1350

M-Factor (Chronic aquatic toxicity) : 10

Toxicity to soil dwelling organisms : LC50: 607 mg/kg
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 207
GLP:yes

Method: OECD Test Guideline 217
Remarks: No significant adverse effect on carbon mineralization.

Method: OECD Test Guideline 216
Remarks: No significant adverse effect on nitrogen mineralization.

Toxicity to terrestrial organisms : LC50: > 5,000 mg/kg
Species: Anas platyrhynchos (Mallard duck)
Method: OECD Test Guideline 206

LOEC: 122 mg/kg
End point: Reproduction Test
Species: Anas platyrhynchos (Mallard duck)
Method: OECD Test Guideline 206
GLP:yes

NOEC: 69.6 mg/kg
End point: Reproduction Test
Species: Anas platyrhynchos (Mallard duck)
Method: OECD Test Guideline 206
GLP:yes

NOEL: 2,000 mg/kg
Species: Colinus virginianus (Bobwhite quail)
Method: OPPTS 850.2100

NOEC: 77.7 mg/kg
End point: Reproduction Test
Species: Colinus virginianus (Bobwhite quail)
Method: OECD Test Guideline 206

LOEC: 103 mg/kg
End point: Reproduction Test
Species: Colinus virginianus (Bobwhite quail)
Method: OECD Test Guideline 206
GLP:yes

LD50: > 100 µg/bee
End point: Acute contact toxicity
Species: Apis mellifera (bees)
Method: OECD Test Guideline 214

LD50: > 100 µg/bee
End point: Acute oral toxicity
Species: Apis mellifera (bees)
Method: OECD Test Guideline 213

NOEC: ca. 9.5 µg/bee
Exposure time: 10 d
Species: Apis mellifera (bees)
GLP:yes
Remarks: Dietary

LD50: 59 µg/bee
Exposure time: 72 h
End point: honey bee larval toxicity test
Species: Apis mellifera (bees)
Method: OECD 237
GLP:yes

NOED: 6.3 µg/bee
Exposure time: 22 d
End point: honey bee larval toxicity test
Species: Apis mellifera (bees)
GLP:yes
Remarks: Dietary

Ecotoxicology Assessment

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

beflubutamid (ISO):

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	:	EC50 (Selenastrum capricornutum (green algae)): 0.00445

plants		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)

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Toxicity to fish	:	LL50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): 1.4 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EL50 (Pseudokirchneriella subcapitata (green algae)): 1 - 3 mg/l Exposure time: 24 h Method: OECD Test Guideline 201

Toxicity to microorganisms	:	LL50 (Tetrahymena pyriformis): 677.9 mg/l Exposure time: 72 h Test Type: Growth inhibition
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	EL50: 0.89 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

sodium nitrate:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 8,600 mg/l Exposure time: 24 h Method: OECD Test Guideline 202
Toxicity to microorganisms	:	EC50 : > 1,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209
Toxicity to fish (Chronic toxicity)	:	NOEC: 157 mg/l Exposure time: 32 d Species: Pimephales promelas (fathead minnow)

Calcium chloride dihydrate:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 4,630 mg/l Exposure time: 96 h Test Type: static test
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): 2,400 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (algae)): 2,900 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	EC50: 610 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)

Cloquintocet-mexyl:

Toxicity to fish	:	LC50 (Salmo gairdneri): > 76 mg/l Exposure time: 96 h LC50 (Ictalurus punctatus (channel catfish)): 14 mg/l

		Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Test Type: static test
Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): 0.63 mg/l Exposure time: 96 h Test Type: static test NOEC (Desmodesmus subspicatus (green algae)): 0.09 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to microorganisms	:	EC50 (activated sludge): > 1,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 32 mg/l End point: reproduction Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211
M-Factor (Chronic aquatic toxicity)	:	1
Toxicity to soil dwelling organisms	:	LC50: 1,000 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms) Method: OECD Test Guideline 207
Toxicity to terrestrial organisms	:	LD50: > 2,000 mg/kg Species: Colinus virginianus (Bobwhite quail) NOEC: 500 mg/kg Species: Colinus virginianus (Bobwhite quail) LD50: > 2,000 mg/kg Species: Anas platyrhynchos (Mallard duck) NOEC: 500 mg/kg Species: Anas platyrhynchos (Mallard duck) LD50: >100 ug/bee Exposure time: 48 d End point: Acute oral toxicity

Species: Apis mellifera (bees)

LD50: >100 ug/bee
Exposure time: 48 d
End point: Acute contact toxicity
Species: Apis mellifera (bees)

Lignosulfonic acid, sodium salt, sulfomethylated:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 615 mg/l Exposure time: 96 h

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	:	1

toxicity)

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: Product contains minor amounts of not readily biodegradable components, which may not be degradable in waste water treatment plants.

Components:

Bixlozone:

Biodegradability : Result: Not readily biodegradable.
Method: OECD Test Guideline 301B

Stability in water : Hydrolysis: < 5 % at 25 °C(30 d)
Method: OECD Test Guideline 111
GLP: yes
Remarks: Does not readily hydrolyze

Photodegradation : Method: OECD Test Guideline 316
Remarks: Decomposes slowly in contact with light.

beflubutamid (ISO):

Biodegradability : Result: Not readily biodegradable.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 58.6 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

sodium nitrate:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Cloquintocet-mexyl:

Biodegradability : Result: Not readily biodegradable.

Lignosulfonic acid, sodium salt, sulfomethylated:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: < 5 %
Exposure time: 28 d
Method: OECD Test Guideline 301E

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

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

12.3 Bioaccumulative potential

Components:

Bixlozone:

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 100
Method: OECD Test Guideline 305
Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: 3.3 (20 °C)
pH: 4 - 9
Method: OECD Test Guideline 107

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)

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Bioaccumulation : Remarks: The product/substance has a potential to bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3.72
Method: QSAR

Cloquintocet-mexyl:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 1,000
Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: 5.03 (25 °C)

Lignosulfonic acid, sodium salt, sulfomethylated:

Bioaccumulation : Remarks: Low potential for bioaccumulation

Partition coefficient: n-octanol/water : log Pow: -3.45

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

Components:

Bixlozone:

Distribution among environmental compartments	:	log Koc: 2 - 3 Method: OECD Test Guideline 106 Remarks: Moderately mobile in soil

beflubutamid (ISO):

Distribution among environmental compartments	:	Remarks: immobile

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Distribution among environmental compartments	:	Remarks: Expected to partition to sediment and wastewater solids. Moderately volatile.

Cloquintocet-mexyl:

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 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.

Components:

beflubutamid (ISO):

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

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. Triple rinse containers. 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
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, Bixlozone)
ADR	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Beflubutamid, Bixlozone)
RID	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Beflubutamid, Bixlozone)
IMDG	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Beflubutamid, Bixlozone)
IATA	:	Environmentally hazardous substance, liquid, n.o.s. (Beflubutamid, Bixlozone)

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
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

IATA (Passenger)
Environmentally hazardous : yes

IATA (Cargo)
Environmentally hazardous : yes

14.6 Special precautions for user

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

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

Not applicable for product as supplied.

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 Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified

(Number on list 3)
acetic acid (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
Regulation (EU) 2019/1148 on the marketing and use of explosives precursors	:	sodium nitrate
UK REACH List of substances subject to authorisation (Annex XIV)	:	Not applicable
GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation	:	Not applicable

Control of Major Accident Hazards Regulations 2015 (COMAH)	E1	ENVIRONMENTAL HAZARDS
	34	Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams),(d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial and livestock rearing emissions (integrated pollution prevention and control)
Not applicable

Other regulations:

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to protection of young people at work contained in Regulation 19) and of Directive 94/33/EC on the protection of young people at work.

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. 2-(2,4-DICHLOROBENZYL)-4,4-DIMETHYLISOXAZOLIDIN-3-ONE (RS)-1-METHYLHEXYL (5-CHLOROQUINLIN-8-YLOXY)ACETATE beflubutamid (ISO)
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

H272	:	May intensify fire; oxidizer.
H302	:	Harmful if swallowed.
H304	:	May be fatal if swallowed and enters airways.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H411	:	Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard

Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Asp. Tox.	:	Aspiration hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Ox. Sol.	:	Oxidizing solids
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 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:		**Classification procedure:**
Eye Irrit. 2	H319	Calculation method
Skin Sens. 1	H317	Calculation method
Aquatic Acute 1	H400	Based on product data or assessment
Aquatic Chronic 1	H410	Based on product data or assessment

Disclaimer

FMC Corporation believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. You can contact FMC Corporation to ensure that this document is the most current available from FMC Corporation. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the information provided herein. The information provided herein relates only to the specified product designated and may not be applicable where such product is used in combination with any other materials or in any process. The user is responsible for determining whether the product is fit for a particular purpose and suitable for the user's conditions and methods of use. Since the conditions and methods of use are beyond the control of FMC Corporation, FMC Corporation expressly disclaims any and all liability as to any results obtained or arising from any use of the products or reliance on such information.

Prepared by

FMC Corporation

GB / 6N