

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, Annex II and its amendments.



## FLEXIDOR™

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Corteva Agriscience™ encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container. This Safety Data Sheet adheres to the standards and regulatory requirements of Ireland and may not meet the regulatory requirements in other countries.

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

### 1.1 Product identifier

Trade name	: FLEXIDOR™
Unique Formula Identifier (UFI)	: XKC1-M0SX-V001-SUU8

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

Use of the Substance/Mixture	: Herbicide
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### 1.3 Details of the supplier of the safety data sheet

#### COMPANY IDENTIFICATION

##### Manufacturer/importer

Corteva Agriscience UK Limited  
Melbourn Science Park - Cambridge Road - Unit H4, Building H  
Melbourn Cambridgeshire - SG8 6HB  
UNITED KINGDOM

Customer Information Number	: +44 8006 89 8899
E-mail address	: SDS@corteva.com

### 1.4 Emergency telephone number

SGS : +353 818 663 627

National Poisons Information Centre (Beaumont Hospital): 01 809 2166 (8 AM - 10 PM)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification (REGULATION (EC) No 1272/2008)

Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
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Long-term (chronic) aquatic hazard, Cat-	H410: Very toxic to aquatic life with long lasting
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egory 1 effects.

### 2.2 Label elements

#### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

Hazard statements : H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : P102 Keep out of reach of children.

#### Prevention:

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves.

#### Response:

P391 Collect spillage.

#### Disposal:

P501 Dispose of contents / container to a licensed hazardous-waste disposal contractor or collection site except for triple rinsed empty clean containers which can be disposed of as non-hazardous waste

#### Additional Labelling

EUH208 Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

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

### 2.3 Other hazards

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

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

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

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Components

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Chemical name	CAS-No. EC-No. Index-No. REACH Registration number	Classification	Concentration (% w/w)
isoxaben (ISO)	82558-50-7 407-190-8 616-043-00-9	Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	45.5
1,2-benzisothiazol-3(2H)-one	2634-33-5 220-120-9 613-088-00-6	Acute Tox. 4; H302 Acute Tox. 2; H330 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1  specific concentration limit Skin Sens. 1; H317 ≥ 0.05 %	0.02

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- Protection of first-aiders : If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- If inhaled : Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.
- In case of skin contact : Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center

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or doctor for treatment advice.

In case of eye contact : Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.

If swallowed : No emergency medical treatment necessary.

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

None known.

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

Treatment : No specific antidote.  
Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.  
Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : Water spray  
Alcohol-resistant foam

Unsuitable extinguishing media : None known.

### 5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Nitrogen oxides (NOx)  
Carbon oxides

### 5.3 Advice for firefighters

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

Specific extinguishing methods : Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.

Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

#### 6.2 Environmental precautions

Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.  
Discharge into the environment must be avoided.  
Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g. by containment or oil barriers).  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.

#### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Clean up remaining materials from spill with suitable absorbent.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in.  
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped,  
Recovered material should be stored in a vented container.  
The vent must prevent the ingress of water as further reaction with spilled materials can take place which could lead to over-pressurization of the container.  
Keep in suitable, closed containers for disposal.  
Wipe up with absorbent material (e.g. cloth, fleece).  
See Section 13, Disposal Considerations, for additional information.

#### 6.4 Reference to other sections

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

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### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours/dust.  
Handle in accordance with good industrial hygiene and safety practice.  
Smoking, eating and drinking should be prohibited in the application area.  
Take care to prevent spills, waste and minimize release to the environment.  
Use appropriate safety equipment. For additional information,

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refer to Section 8, Exposure Controls and Personal Protection.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in a closed container. Keep in properly labelled containers. Store in accordance with the particular national regulations.

Advice on common storage : Strong oxidizing agents

Packaging material : Unsuitable material: None known.

### 7.3 Specific end use(s)

Specific use(s) : Plant protection products subject to Regulation (EC) No 1107/2009.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Propylene glycol	57-55-6	Occupational exposure limit value (8-hour reference period) (particles)	10 mg/m <sup>3</sup>	IE OEL
		Occupational exposure limit value (8-hour reference period) (total (vapour and particles))	150 ppm 470 mg/m <sup>3</sup>	IE OEL

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Propylene glycol	Workers	Skin contact	Acute systemic effects	
	Remarks: No data available			
	Workers	Inhalation	Acute systemic effects	
	Remarks: No data available			
	Workers	Skin contact	Acute local effects	
	Remarks: No data available			
	Workers	Inhalation	Acute local effects	
	Remarks: No data available			
	Workers	Skin contact	Long-term systemic effects	
	Remarks: No data available			
	Workers	Inhalation	Long-term systemic	168 mg/m <sup>3</sup>

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			effects	
	Workers	Skin contact	Long-term local effects	
	Remarks: No data available			
	Workers	Inhalation	Long-term local effects	10 mg/m3
	Consumers	Skin contact	Acute systemic effects	
	Remarks: No data available			
	Consumers	Inhalation	Acute systemic effects	
	Remarks: No data available			
	Consumers	Skin contact	Acute local effects	
	Remarks: No data available			
	Consumers	Inhalation	Acute local effects	
	Remarks: No data available			
	Consumers	Skin contact	Long-term systemic effects	
	Remarks: No data available			
	Consumers	Inhalation	Long-term systemic effects	50 mg/m3
	Consumers	Skin contact	Long-term local effects	
	Remarks: No data available			
	Consumers	Inhalation	Long-term local effects	10 mg/m3

### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Propylene glycol	Fresh water	260 mg/l
	Marine water	26 mg/l
	Intermittent use/release	183 mg/l
	Sewage treatment plant	20000 mg/l
	Fresh water sediment	572 mg/kg dry weight (d.w.)
	Marine sediment	57.2 mg/kg dry weight (d.w.)
	Soil	50 mg/kg dry weight (d.w.)

## 8.2 Exposure controls

### Engineering measures

Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

### Personal protective equipment

Eye/face protection : Use safety glasses (with side shields).  
Safety glasses (with side shields) should be consistent with EN 166 or equivalent.

Hand protection

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|--------------------------|---|
| Remarks                  | : Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended. Glove thickness alone is not a good indicator of the level of protection a glove provides against a chemical substance as this level of protection is also highly dependent on the specific composition of the material that the glove is fabricated from. The thickness of the glove must, depending on model and type of material, generally be more than 0.35 mm to offer sufficient protection for prolonged and frequent contact with the substance. As an exception to this general rule it is known that multilayer laminate gloves may offer prolonged protection at thicknesses less than 0.35 mm. Other glove materials with a thickness of less than 0.35 mm may offer sufficient protection when only brief contact is expected. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier. |
| Skin and body protection | : Wear clean, body-covering clothing.   |
| Respiratory protection   | : Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.   |

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |                     |                          |
|---------------------|--------------------------|
| Physical state      | : Suspension             |
| Colour              | : White                  |
| Odour               | : Odorless               |
| Odour Threshold     | : No test data available |
| Melting point/range | : Not applicable         |



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Freezing point	No test data available
Boiling point/boiling range	: > 100 °C
Flammability	: No
Upper explosion limit / Upper flammability limit	: No test data available
Lower explosion limit / Lower flammability limit	: No test data available
Flash point	: > 100 °C Method: closed cup
Auto-ignition temperature	: > 400 °C Method: Unspecified
pH	: 7.7 Concentration: 1 % Method: pH Electrode (1% aqueous suspension)
Viscosity Viscosity, kinematic	: Non-Newtonian fluid.
Solubility(ies) Water solubility	: No test data available
Vapour pressure	: Not applicable
Density	: 1.1 g/mL
Relative vapour density	: No test data available

### 9.2 Other information

Explosives	: Not explosive
Oxidizing properties	: No significant increase (>5C) in temperature.
Evaporation rate	: No test data available Reference substance: Monoammonium phosphate

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Not classified as a reactivity hazard.

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### 10.2 Chemical stability

No decomposition if stored and applied as directed.  
Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : Stable under recommended storage conditions.  
No hazards to be specially mentioned.  
None known.

### 10.4 Conditions to avoid

Conditions to avoid : None known.

### 10.5 Incompatible materials

Materials to avoid : Strong acids  
Strong bases

### 10.6 Hazardous decomposition products

Carbon oxides

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## SECTION 11: Toxicological information

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

#### Acute toxicity

##### Product:

Acute oral toxicity	: LD50 (Rat, male and female): > 5,000 mg/kg Method: OECD Test Guideline 401 Symptoms: No deaths occurred at this concentration.
Acute inhalation toxicity	: LC50 (Rat, male and female): > 5.71 mg/l Test atmosphere: dust/mist Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	: LD50 (Rat): > 5,000 mg/kg Method: OECD Test Guideline 402 Symptoms: No deaths occurred at this concentration.

##### Components:

##### **isoxaben (ISO):**

Acute oral toxicity	: LD50 (Rat): > 10,000 mg/kg
Acute inhalation toxicity	: Remarks: Prolonged excessive exposure to dust may cause adverse effects. Based on the available data, narcotic effects were not observed. Based on the available data, respiratory irritation was not ob-

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served.

LC50 (Rat): 2.68 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Assessment: The substance or mixture has no acute inhalation toxicity

Symptoms: No deaths occurred at this concentration.

Remarks: Maximum attainable concentration.

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg  
Symptoms: No deaths occurred at this concentration.  
Assessment: The substance or mixture has no acute dermal toxicity

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

Acute oral toxicity : LD50 (Rat, male): 454 mg/kg  
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male and female): 0.25 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Symptoms: Breathing difficulties

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

### **Skin corrosion/irritation**

#### **Product:**

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

#### **Components:**

##### **isoxaben (ISO):**

Species : Rabbit  
Result : No skin irritation

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

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

### **Serious eye damage/eye irritation**

#### **Product:**

Species : Rabbit

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Method : OECD Test Guideline 405  
Result : No eye irritation

### Components:

#### **isoxaben (ISO):**

Species : Rabbit  
Result : No eye irritation

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

Species : Rabbit  
Result : Corrosive

### **Respiratory or skin sensitisation**

#### Product:

Test Type : Local lymph node assay (LLNA)  
Species : Mouse  
Assessment : Does not cause skin sensitisation.  
Method : OECD Test Guideline 429  
Remarks : For similar material(s):

### Components:

#### **isoxaben (ISO):**

Remarks : Did not cause allergic skin reactions when tested in guinea pigs.

Remarks : For respiratory sensitization:  
No relevant data found.

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

Test Type : Local lymph node assay (LLNA)  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : The product is a skin sensitiser, sub-category 1A.

### **Germ cell mutagenicity**

#### Components:

#### **isoxaben (ISO):**

Germ cell mutagenicity- Assessment : In vitro genetic toxicity studies were negative., Animal genetic toxicity studies were predominantly negative.

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

Germ cell mutagenicity- Assessment : Not mutagenic when tested in bacterial or mammalian systems.

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### Carcinogenicity

#### Components:

##### **isoxaben (ISO):**

Carcinogenicity - Assessment : An increase in nonmalignant liver tumors was observed with isoxaben in one of two species tested.

### Reproductive toxicity

#### Components:

##### **isoxaben (ISO):**

Reproductive toxicity - Assessment : In animal studies, has been shown to interfere with reproduction in females., Effects have been seen only at doses that produced significant toxicity to the parent animals.  
Has caused birth defects in laboratory animals only at doses toxic to the mother.

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

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction., In animal studies, did not interfere with fertility.  
Did not cause birth defects in laboratory animals.

### STOT - single exposure

#### Product:

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

#### Components:

##### **isoxaben (ISO):**

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

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

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

### STOT - repeated exposure

#### Product:

Assessment : Evaluation of available data suggests that this material is not an STOT-RE toxicant.

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### Components:

#### **isoxaben (ISO):**

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

### **Repeated dose toxicity**

### Components:

#### **isoxaben (ISO):**

Remarks : In animals, effects have been reported on the following organs:  
Liver.  
Kidney.

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

Remarks : Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

### **Aspiration toxicity**

### Product:

Based on physical properties, not likely to be an aspiration hazard.

### Components:

#### **isoxaben (ISO):**

Based on physical properties, not likely to be an aspiration hazard.

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

Based on physical properties, not likely to be an aspiration hazard.

## 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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### SECTION 12: Ecological information

#### 12.1 Toxicity

##### Product:

Toxicity to fish : Remarks: Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species).

LC50 (Oncorhynchus mykiss (rainbow trout)): > 200 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 544 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Lemna minor (duckweed)): 0.044 mg/l  
End point: Biomass  
Exposure time: 14 d  
Test Type: static test

ErC50 (Chlorella vulgaris (Fresh water algae)): > 100 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201

Toxicity to soil dwelling organisms : LC50: > 1,000 mg/kg  
Exposure time: 14 d  
End point: mortality  
Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organisms : contact LD50: > 100 micrograms/bee  
Exposure time: 48 h  
Species: Apis mellifera (bees)

oral LD50: > 100 micrograms/bee  
Exposure time: 48 h  
Species: Apis mellifera (bees)

##### **Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life.

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

##### Components:

##### **isoxaben (ISO):**

Toxicity to fish : Remarks: Material is very toxic to aquatic organisms

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(LC50/EC50/IC50 below 1 mg/L in the most sensitive species).

LC50 (Oncorhynchus mykiss (rainbow trout)): 1.2 mg/l

Exposure time: 96 h

Test Type: static test

Method: OECD Test Guideline 203 or Equivalent

Remarks: The LC50 value is above the water solubility.

LC50 (Cyprinodon variegatus (sheepshead minnow)): > 0.87 mg/l

Exposure time: 96 h

Test Type: static test

Method: OECD Test Guideline 203 or Equivalent

Remarks: The LC50 value is above the water solubility.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1.3 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic plants : EbC50 (Lemna minor (duckweed)): 0.011 mg/l  
End point: Biomass  
Exposure time: 7 d  
Test Type: static test  
Method: OECD Test Guideline 201 or Equivalent

ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1.4 mg/l

End point: Growth rate inhibition

Exposure time: 72 h

Test Type: static test

Method: OECD Test Guideline 201 or Equivalent

ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1.2 mg/l

End point: Growth rate inhibition

Exposure time: 72 h

Test Type: static test

ErC50 (Skeletonema costatum (marine diatom)): > 0.49 mg/l

Exposure time: 72 h

Test Type: static test

M-Factor (Acute aquatic toxicity) : 10

Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l  
End point: Respiration rates.  
Exposure time: 3 h  
Test Type: Respiration inhibition

Toxicity to fish (Chronic toxicity) : NOEC: 0.4 mg/l



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icity)	<p>End point: growth Exposure time: 33 d Species: Pimephales promelas (fathead minnow) Test Type: semi-static test</p> <p>LOEC: &gt; 0.40 mg/l End point: growth Exposure time: 33 d Species: Pimephales promelas (fathead minnow) Test Type: semi-static test</p> <p>MATC (Maximum Acceptable Toxicant Level): &gt; 0.40 mg/l End point: growth Exposure time: 33 d Species: Pimephales promelas (fathead minnow) Test Type: semi-static test</p>
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	<p>NOEC: 0.69 mg/l End point: growth Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: static test Method: OECD Test Guideline 211 or Equivalent</p> <p>LOEC: 1.01 mg/l End point: growth Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: static test Method: OECD Test Guideline 211 or Equivalent</p> <p>MATC (Maximum Acceptable Toxicant Level): 0.85 mg/l End point: growth Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: static test Method: OECD Test Guideline 211 or Equivalent</p> <p>NOEC: 0.841 mg/l Exposure time: 28 d Species: saltwater mysid Mysidopsis bahia Test Type: flow-through test</p> <p>LOEC: &gt; 0.841 mg/l Exposure time: 28 d Species: saltwater mysid Mysidopsis bahia Test Type: flow-through test</p> <p>NOEC: 32 mg/l End point: mortality Exposure time: 28 d Species: Midge (Chironomus riparius) Test Type: static test</p>

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Method: OECD Test Guideline 211 or Equivalent

LOEC: 64 mg/l

End point: mortality

Exposure time: 28 d

Species: Midge (*Chironomus riparius*)

Test Type: static test

Method: OECD Test Guideline 211 or Equivalent

MATC (Maximum Acceptable Toxicant Level): 48 mg/l

End point: mortality

Exposure time: 28 d

Species: Midge (*Chironomus riparius*)

Test Type: static test

Method: OECD Test Guideline 211 or Equivalent

M-Factor (Chronic aquatic toxicity) : 10

Toxicity to soil dwelling organisms : LC50: > 500 mg/kg  
Exposure time: 14 d  
Species: *Eisenia fetida* (earthworms)

Toxicity to terrestrial organisms : Remarks: Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).  
Material is moderately toxic to birds on a dietary basis (LC50 between 501 and 1000 ppm).

oral LD50: > 2000 mg/kg bodyweight.

Exposure time: 14 d

Species: *Colinus virginianus* (Bobwhite quail)

LC50: > 937 mg/kg diet.

Exposure time: 8 d

Species: *Colinus virginianus* (Bobwhite quail)

oral LD50: > 100 micrograms/bee

Species: *Apis mellifera* (bees)

contact LD50: > 100 micrograms/bee

Exposure time: 48 h

Species: *Apis mellifera* (bees)

### Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

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

Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): 0.74 mg/l  
Exposure time: 96 h  
Test Type: Static  
Method: OECD Test Guideline 203 or Equivalent

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Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 3.7 mg/l Exposure time: 48 h Test Type: flow-through test Method: OECD Test Guideline 202 or Equivalent  EC50 (Mysid shrimp (Mysidopsis bahia)): 0.99 mg/l Exposure time: 96 h
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.61 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 or Equivalent  ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.108 mg/l Exposure time: 24 h Test Type: Static Method: OECD Test Guideline 201 or Equivalent  EC10 (Pseudokirchneriella subcapitata (green algae)): 0.0206 mg/l End point: Growth rate Exposure time: 24 h Test Type: Static Method: (calculated)
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to microorganisms	:	EC50 (Bacteria (active sludge)): 28.52 mg/l Exposure time: 3 h Test Type: Respiration inhibition of activated sludge
Toxicity to fish (Chronic toxicity)	:	NOEC: 0.21 mg/l Exposure time: 28 d Species: Oncorhynchus mykiss (rainbow trout) Test Type: flow-through Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.91 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: flow-through test Method: OECD Test Guideline 211
M-Factor (Chronic aquatic toxicity)	:	1

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### 12.2 Persistence and degradability

#### Components:

##### **isoxaben (ISO):**

Biodegradability : Result: Not biodegradable  
Remarks: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.  
Biodegradation rate may increase in soil and/or water with acclimation.

Biodegradation: 1 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B or Equivalent  
Remarks: 10-day Window: Fail

Chemical Oxygen Demand (COD) : 1.77 mg/g

ThOD : 1.98 kg/kg

Stability in water : Test Type: Hydrolysis  
Degradation half life (half-life): > 5 d  
pH: 7.0

Photodegradation : Test Type: Half-life (indirect photolysis)  
Sensitiser: OH radicals  
Concentration: 1,500,000 1/cm<sup>3</sup>  
Rate constant: 2.045E-10 cm<sup>3</sup>/s  
Method: Estimated.

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

Biodegradability : Result: Not biodegradable  
Biodegradation: 24 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B or Equivalent

### 12.3 Bioaccumulative potential

#### Components:

##### **isoxaben (ISO):**

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)  
Exposure time: 28 d  
Bioconcentration factor (BCF): 70.5  
Method: Measured

Partition coefficient: n-octanol/water : log Pow: 3.9 (20 °C)  
Method: Measured  
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

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

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)  
Bioconcentration factor (BCF): 6.95  
Method: OECD Test Guideline 305

Partition coefficient: n-octanol/water : log Pow: 0.99 (20 °C)  
pH: 5  
Method: OECD Test Guideline 117 or Equivalent

log Pow: 0.63 (10 °C)  
pH: 7  
Method: OECD Test Guideline 117 or Equivalent

log Pow: 0.70 (20 °C)  
pH: 7  
Method: OECD Test Guideline 117 or Equivalent

log Pow: 0.76 (30 °C)  
pH: 7  
Method: OECD Test Guideline 117 or Equivalent

log Pow: -0.90 (20 °C)  
pH: 9  
Method: OECD Test Guideline 117 or Equivalent

## 12.4 Mobility in soil

### Components:

#### isoxaben (ISO):

Distribution among environmental compartments : Koc: 700 - 1290  
Remarks: Potential for mobility in soil is low (Koc between 500 and 2000).

Stability in soil : Test Type: aerobic degradation  
Dissipation time: 0.358 - 0.883 yr  
Test Type: Photolysis  
Dissipation time: 248 d

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

Distribution among environmental compartments : Koc: 104  
Method: Estimated.  
Remarks: Potential for mobility in soil is high (Koc between 50 and 150).  
Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

## 12.5 Results of PBT and vPvB assessment

### Product:

Assessment : This substance/mixture contains no components considered

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to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### Components:

#### **isoxaben (ISO):**

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. This substance is not considered to be very persistent and very bioaccumulating (vPvB).

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

Assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

## 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.

## 12.7 Other adverse effects

### Components:

#### **isoxaben (ISO):**

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identifica-

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tion and disposal methods in compliance with applicable regulations.  
If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

### SECTION 14: Transport information

#### 14.1 UN number or ID number

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

#### 14.2 UN proper shipping name

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

#### 14.3 Transport hazard class(es)

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

#### 14.4 Packing group

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

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Labels : 9

### IMDG

Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Remarks : Stowage category A

### 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

### ADR

Environmentally hazardous : yes

### RID

Environmentally hazardous : yes

### IMDG

Marine pollutant : yes(Isoxaben)

## 14.6 Special precautions for user

Marine Pollutants assigned UN number 3077 and 3082 in single or combination packaging containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code, IATA Special provision A197, and ADR/RID special provision 375.

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 - Candidate List of Substances of Very High Concern for Authorisation (Article 59) : Not applicable



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Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
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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### 15.2 Chemical safety assessment

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

The mixture is evaluated within the frame of the provisions of Regulation (EC) No. 1107/2009. Refer to the label for exposure assessment information.

## SECTION 16: Other information

### Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

### Full text of H-Statements

H302	:	Harmful if swallowed.
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.

### 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 Sens.	:	Skin sensitisation
IE OEL	:	List of Chemical Agents and Carcinogens with Occupational Exposure Limit Values - Code of Practice, Schedule 1 and 2
IE OEL / OELV - 8 hrs (TWA)	:	Occupational exposure limit value (8-hour reference period)

ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; ASTM - American Society for the Testing of Materials; ECx - Concentration associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; LC50 - Lethal Con-

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centration 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; NOEC - Non-Observed Effective Concentration; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; (Q)SAR - (Quantitative) Structure Activity Relationship; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SDS - Safety Data Sheet; UN - United Nations.

EC-Number - European Community number REACH - Regulation (EC) No 1907/2006 of the European Parliament and of Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals.

### Further information

#### Classification of the mixture:

Aquatic Acute 1	H400
Aquatic Chronic 1	H410

#### Classification procedure:

Based on product data or assessment  
Based on product data or assessment

Product code: EAF-496

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

IE / 6N