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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 Great Britain 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 : THISTLEX™

Unique Formula Identifier : 71K0-V0DE-800H-K75T

(UFI)

/ 110-VODE-00011-1(/31

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

Use of the Sub- : End use herbicide product

stance/Mixture

#### 1.3 Details of the supplier of the safety data sheet

#### **COMPANY IDENTIFICATION**

Manufacturer/importer

Corteva Agriscience UK Ltd CPC2 CAPITAL PARK

FULBOURN CAMBRIDGE - England - CB21 5XE

UNITED KINGDOM

**Customer Information** : +44 8006 89 8899

Number

E-mail address : SDS@corteva.com

### 1.4 Emergency telephone number

SGS +32 3 575 55 55 OR

+44 161 88 41235

### **SECTION 2: Hazards identification**

### 2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Skin irritation, Category 2 H315: Causes skin irritation.

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Serious eve damage, Category 1 Specific target organ toxicity - single exposure, Category 3, Respiratory system Specific target organ toxicity - repeated exposure, Category 2

Short-term (acute) aquatic hazard, Cate-

Long-term (chronic) aquatic hazard, Cat-

egory 1

H318: Causes serious eye damage. H335: May cause respiratory irritation.

H373: May cause damage to organs through pro-

longed or repeated exposure. H400: Very toxic to aquatic life.

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 Danger

Hazard statements H315 Causes skin irritation.

> Causes serious eye damage. H318 H335 May cause respiratory irritation.

H373 May cause damage to organs through prolonged or

repeated exposure.

Very toxic to aquatic life with long lasting effects.

Precautionary statements Prevention:

> P260 Do not breathe mist or vapours.

P264 Wash skin thoroughly after handling. P273 Avoid release to the environment.

P280 Wear protective gloves/ eye protection/ face protection.

Response:

IF IN EYES: Rinse cautiously P305 + P351 + P338 + P310 with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a

POISON CENTER/ doctor. P391 Collect spillage.

Disposal:

Dispose of contents/container to a licensed hazardouswaste disposalcontractor or collection site except for empty clean containers whichcan be disposed of as non-hazardous

waste.

Hazardous components which must be listed on the label:

Clopyralid Triethylamine Salt Triclopyr Triethylamine Salt triethylamine

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#### **Additional Labelling**

EUH401 To avoid risks to human health and the environment, comply with the instruc-

tions 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

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Clopyralid Triethylamine Salt	119308-91-7	Eye Dam. 1; H318 Aquatic Chronic 1; H410  M-Factor (Chronic aquatic toxicity): 10	26.55
Triclopyr Triethylamine Salt	57213-69-1 260-625-1	Flam. Liq. 3; H226 Eye Irrit. 2; H319 STOT RE 2; H373 (Kidney) Aquatic Acute 1; H400 Aquatic Chronic 1; H410	24.26
triethylamine	121-44-8 204-469-4 612-004-00-5 01-2119475467-26- 0012, 01- 2119475467-26- 0013	Flam. Liq. 2; H225 Acute Tox. 4; H302 Acute Tox. 3; H331 Acute Tox. 3; H311 Skin Corr. 1A; H314 Eye Dam. 1; H318 STOT SE 3; H335 (Respiratory system)	>=1-<3

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						specific concentra- tion limit STOT SE 3; H335 >= 1 %	
	Substa	nces with a workplace	exposure	e limit :			
	ethano			64-17-5 200-578-6 603-002-00-5 01-21194576	-	Flam. Liq. 2; H225  specific concentration limit 2A; H319 > 50 %	>= 1 - < 3

For explanation of abbreviations see section 16.

#### **SECTION 4: First aid measures**

### 4.1 Description of first aid measures

Protection of first-aiders	:	First Aid responders should pay attention to self-protection
		and use the recommended protective clothing (chemical re-

sistant gloves, splash protection).

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.

If breathing is difficult, oxygen should be administered by qual-

ified personnel.

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

or doctor for treatment advice.

In case of eye contact : Wash immediately and continuously with flowing water for at

least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consul-

tation, preferably from an ophthalmologist.

Suitable emergency eye wash facility should be immediately

available.

If swallowed : Call a poison control center or doctor immediately for treat-

ment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison

control center or doctor.

Never give anything by mouth to an unconscious person.

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#### 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 : Maintain adequate ventilation and oxygenation of the patient.

May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids

may be of help.

Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist.

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.

Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reac-

tive airways dysfunction syndrome).

#### **SECTION 5: Firefighting measures**

#### 5.1 Extinguishing media

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Unsuitable extinguishing

media

Do not use direct water stream.

High volume water jet

### 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.

Vapours may form explosive mixtures with air.

Do not allow run-off from fire fighting to enter drains or water

courses.

Flash back possible over considerable distance.

Hazardous combustion prod: :

ucts

During a fire, smoke may contain the original material in addi-

tion to combustion products of varying composition which may

be toxic and/or irritating.

Combustion products may include and are not limited to:

Carbon oxides

Nitrogen oxides (NOx)

### 5.3 Advice for firefighters

Special protective equipment :

for firefighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

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Specific extinguishing meth-

ods

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment. Use water spray to cool unopened containers.

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.

Further information : Use water spray to cool fire exposed containers and fire af-

fected zone until fire is out and danger of reignition has

passed.

Do not use a solid water stream as it may scatter and spread

fire.

Use a water spray to cool fully closed containers.

#### **SECTION 6: Accidental release measures**

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

Personal precautions : Use personal protective equipment.

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.

Prevent from entering into soil, ditches, sewers, underwater.

See Section 12, Ecological Information.

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

Methods for cleaning up : Clean up remaining materials from spill with suitable absorb-

ant.

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.

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> Keep in suitable, closed containers for disposal. Wipe up with absorbent material (e.g. cloth, fleece).

Non-sparking tools should be used.

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local

/ national regulations (see section 13).

Suppress (knock down) gases/vapours/mists with a water

spray jet.

See Section 13, Disposal Considerations, for additional infor-

mation.

#### 6.4 Reference to other sections

### **SECTION 7: Handling and storage**

# 7.1 Precautions for safe handling

Local/Total ventilation : Use with local exhaust ventilation.

Advice on safe handling : To avoid spills during handling keep bottle on a metal tray.

Avoid formation of aerosol.

Provide sufficient air exchange and/or exhaust in work rooms.

Do not breathe vapours/dust.

Do not smoke.

Handle in accordance with good industrial hygiene and safety

oractice.

Avoid exposure - obtain special instructions before use. Smoking, eating and drinking should be prohibited in the ap-

plication area.

Do not breathe vapours or spray mist.

Do not swallow. Do not get in eyes.

Avoid contact with skin and eyes.

Avoid prolonged or repeated contact with skin.

Keep container tightly closed.

Keep away from heat and sources of ignition.

Take precautionary measures against static discharges.

Take care to prevent spills, waste and minimize release to the

environment.

Use appropriate safety equipment. For additional information, 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. No smoking. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in properly labelled containers. Store in ac-

cordance with the particular national regulations.

Advice on common storage : Strong oxidizing agents

Explosives Gases

Packaging material : Unsuitable material: None known.

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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
Triclopyr Triethyl- amine Salt	57213-69-1	Time Weighted Average (TWA):	2 mg/m3	Dow IHG
triethylamine	121-44-8	Short-term expo- sure limit (15- minute reference period)	4 ppm 17 mg/m3	GB EH40
		nose for which there	bed through the skin. The as are concerns that dermal ab	
		Long-term expo- sure limit (8-hour TWA reference period)	2 ppm 8 mg/m3	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
		Limit Value - eight hours	2 ppm 8.4 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			ke through the
		Short term expo- sure limit	3 ppm 12.6 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			ke through the
		Time weighted average	1 ppm	Dow IHG
		Short term expo- sure limit	3 ppm	Dow IHG
ethanol	64-17-5	Long-term expo- sure limit (8-hour TWA reference period)	1,000 ppm 1,920 mg/m3	GB EH40

### **Derived No Effect Level (DNEL):**

2011104 110 211001 20101 (21122).				
Substance name	End Use	Exposure routes	Potential health effects	Value
			16012	
triethylamine	Workers	Inhalation	Acute systemic ef-	12.6 mg/m3
			fects	
	Workers	Inhalation	Acute local effects	12.6 mg/m3

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	Workers	Skin contact	Long-term systemic effects	12.1 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	8.4 mg/m3
	Workers	Inhalation	Long-term local ef- fects	8.4 mg/m3
ethanol	Workers	Inhalation	Acute local effects	1900 mg/m3
	Workers	Skin contact	Long-term systemic effects	343 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	950 mg/m3
	Consumers	Inhalation	Acute local effects	950 mg/m3
	Consumers	Skin contact	Long-term systemic effects	206 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	114 mg/m3
	Consumers	Ingestion	Long-term systemic effects	87 mg/kg bw/day

### **Predicted No Effect Concentration (PNEC):**

Substance name	Environmental Compartment	Value
triethylamine	Fresh water	0.064 mg/l
	Marine water	0.0064 mg/l
	Intermittent use/release	0.064 mg/l
	Sewage treatment plant	100 mg/l
	Fresh water sediment	0.1992 mg/kg
	Soil	2.361 mg/kg
ethanol	Fresh water	0.96 mg/l
	Marine water	0.79 mg/l
	Intermittent use/release	2.75 mg/l
	Sewage treatment plant	580 mg/l
	Fresh water sediment	3.6 mg/kg
	Marine sediment	2.9 mg/kg
	Soil	0.63 mg/kg
	Oral (Secondary Poisoning)	720 mg/kg food

### 8.2 Exposure controls

### **Engineering measures**

Use engineering controls to maintain airborne level below exposure limit requirements or guidelines.

If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation.

Local exhaust ventilation may be necessary for some operations.

### Personal protective equipment

Eye/face protection Hand protection

Use chemical goggles.

' Remarks

Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber

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("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). 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 instruc-

tions/specifications provided by the glove supplier.

Skin and body protection Respiratory protection

Wear clean, body-covering clothing.

Respiratory protection should be worn when there is a poten-

tial to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or

guidelines, use an approved respirator.

Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne

concentration of the material.

For emergency conditions, use an approved positive-pressure

self-contained breathing apparatus.

### **SECTION 9: Physical and chemical properties**

### 9.1 Information on basic physical and chemical properties

Appearance : Liquid.

Colour : Yellow to purple

Odour : Amine.

Odour Threshold : No data available

pH : 7.04

Concentration: 1 % Method: CIPAC MT 75.1 1% aqueous solution.

Melting point/range : Not applicable

Freezing point No data available

Boiling point/boiling range : No data available

Flash point : > 87 °C

Method: Setaflash Closed Cup, closed cup

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable to liquids

Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower

flammability limit

No data available

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Vapour pressure : No data available

Relative vapour density : No data available

Density : 1.15 g/cm3 (20 °C)

Method: Pyknometer

Solubility(ies)

Water solubility : Soluble Auto-ignition temperature : > 420 °C

Method: EC Method A15

Viscosity

Viscosity, dynamic : 19.05 mPa,s (20 °C)

Method: OECD 114

Viscosity, kinematic : 14.47 mm2/s (20 °C)

Method: OECD 114

Explosive properties : No

Oxidizing properties : No

9.2 Other information

Surface tension : 36.6 mN/m, 40 °C

### **SECTION 10: Stability and reactivity**

#### 10.1 Reactivity

Not classified as a reactivity hazard.

#### 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. Vapours may form explosive mixture with air.

May form explosive dust-air mixture.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Strong acids

Strong bases

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### 10.6 Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materi-

als.

Decomposition products can include and are not limited to:

Carbon oxides

Nitrogen oxides (NOx)

### **SECTION 11: Toxicological information**

### 11.1 Information on toxicological effects

### **Acute toxicity**

#### **Components:**

# **Clopyralid Triethylamine Salt:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Remarks: For similar active ingredient(s).

Acute inhalation toxicity : LC50 (Rat): > 1.3 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Symptoms: No deaths occurred at this concentration.

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Remarks: For similar active ingredient(s). Maximum attainable concentration.

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

Remarks: For similar active ingredient(s).

**Triclopyr Triethylamine Salt:** 

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 2.6 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute inhala-

tion toxicity

Remarks: Maximum achievable concentration.

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity

triethylamine:

Acute oral toxicity : LD50 (Rat): 730 mg/kg

Acute inhalation toxicity : LC50 (Rat): 14.4 mg/l

Exposure time: 1 h

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Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): 580 mg/kg

ethanol:

Acute oral toxicity : LD50 (Rat): > 7,000 mg/kg

LDLo (human): 1,400 mg/kg

Acute inhalation toxicity : LC50 (Rat): 124.7 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 15,800 mg/kg

Skin corrosion/irritation

**Components:** 

triethylamine:

Species : Rabbit

Result : Causes severe burns.

ethanol:

Species : Rabbit

Result : No skin irritation

Serious eye damage/eye irritation

**Components:** 

**Clopyralid Triethylamine Salt:** 

Result : Corrosive

**Triclopyr Triethylamine Salt:** 

Result : Eye irritation

triethylamine:

Species : Rabbit Result : Corrosive

ethanol:

Species : Rabbit Result : Eye irritation

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### Respiratory or skin sensitisation

**Product:** 

Assessment : Does not cause skin sensitisation.

**Components:** 

**Clopyralid Triethylamine Salt:** 

Remarks : For similar active ingredient(s).

Did not cause allergic skin reactions when tested in guinea

pigs.

Remarks : For respiratory sensitization:

No relevant data found.

**Triclopyr Triethylamine Salt:** 

Remarks : Did not demonstrate the potential for contact allergy in mice.

Remarks : For respiratory sensitization:

No relevant data found.

triethylamine:

Species : Mouse

Result : Does not cause skin sensitisation.

ethanol:

Species : Guinea pig

Assessment : Does not cause skin sensitisation.

Germ cell mutagenicity

**Components:** 

**Clopyralid Triethylamine Salt:** 

Germ cell mutagenicity- As-

sessment

For similar active ingredient(s)., Clopyralid., In vitro genetic toxicity studies were negative., Animal genetic toxicity studies

were negative.

**Triclopyr Triethylamine Salt:** 

Germ cell mutagenicity- As-

sessment

In vitro genetic toxicity studies were negative.

triethylamine:

Germ cell mutagenicity- As-

sessment

In vitro genetic toxicity studies were negative., Animal genetic

toxicity studies were negative.

ethanol:

Germ cell mutagenicity- As-

sessment

Animal testing did not show any mutagenic effects.

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#### Carcinogenicity

#### **Components:**

### **Clopyralid Triethylamine Salt:**

Carcinogenicity - Assess-

ment

For similar active ingredient(s)., Clopyralid., Did not cause

cancer in laboratory animals.

**Triclopyr Triethylamine Salt:** 

Carcinogenicity - Assess-

ment

For similar active ingredient(s)., Triclopyr., Did not cause can-

cer in laboratory animals.

triethylamine:

Carcinogenicity - Assess-

ment

Available data are inadequate to evaluate carcinogenicity.

ethanol:

Carcinogenicity - Assess-

ment

Animal testing did not show any carcinogenic effects., Ethanol when not consumed in an alcoholic beverage is not classifiable as a human carcinogen., Epidemiology studies provide evidence that drinking of alcoholic beverages (containing ethanol) is associated with cancer, and IARC has classified alco-

holic beverages as carcinogenic to humans.

#### Reproductive toxicity

#### **Components:**

#### **Clopyralid Triethylamine Salt:**

Reproductive toxicity - As-

sessment

For similar active ingredient(s)., Clopyralid., In animal studies,

did not interfere with reproduction.

For similar active ingredient(s)., Clopyralid caused birth defects in test animals, but only at greatly exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure.

**Triclopyr Triethylamine Salt:** 

Reproductive toxicity - As-

sessment

: For similar active ingredient(s)., Triclopyr., In laboratory animal studies, effects on reproduction have been seen only at

doses that produced significant toxicity to the parent animals. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory

animals.

ethanol:

Reproductive toxicity - As-

sessment

Animal testing did not show any effects on fertility.

Has caused birth defects in lab animals at high doses.

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



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STOT - single exposure

Product:

Assessment : May cause respiratory irritation.

**Components:** 

Clopyralid Triethylamine Salt:

Assessment : Evaluation of available data suggests that this material is not

an STOT-SE toxicant.

**Triclopyr Triethylamine Salt:** 

Assessment : Evaluation of available data suggests that this material is not

an STOT-SE toxicant.

triethylamine:

Exposure routes : Inhalation

Target Organs : Respiratory Tract

Assessment : May cause respiratory irritation.

ethanol:

Assessment : Evaluation of available data suggests that this material is not

an STOT-SE toxicant.

STOT - repeated exposure

**Components:** 

**Triclopyr Triethylamine Salt:** 

Target Organs : Kidney

Assessment : May cause damage to organs through prolonged or repeated

exposure.

Repeated dose toxicity

Components:

**Clopyralid Triethylamine Salt:** 

Remarks : For similar active ingredient(s).

Based on available data, repeated exposures are not antici-

pated to cause additional significant adverse effects.

**Triclopyr Triethylamine Salt:** 

Remarks : In animals, effects have been reported on the following or-

gans: Kidney.

triethylamine:

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Remarks : Based on available data, repeated exposures are not antici-

pated to cause significant adverse effects.

### **Aspiration toxicity**

### **Product:**

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

### **Components:**

#### **Clopyralid Triethylamine Salt:**

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

### **Triclopyr Triethylamine Salt:**

Based on available information, aspiration hazard could not be determined.

#### triethylamine:

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

#### ethanol:

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

# **SECTION 12: Ecological information**

### 12.1 Toxicity

#### Product:

Toxicity to fish : Remarks: Material is highly toxic to aquatic organisms on an

acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most

sensitive species tested).

LC50 (Oncorhynchus mykiss (rainbow trout)): > 130 mg/l

Exposure time: 96 h

Test Type: flow-through test

Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 130 mg/l

Exposure time: 48 h

Test Type: flow-through test

Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): > 130

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201 or Equivalent

ErC50 (Lemna minor (duckweed)): > 130 mg/l

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



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Exposure time: 14 d Method: OECD 221.

ErC50 (Myriophyllum spicatum): 0.582 mg/l

Exposure time: 14 d

NOEC (Myriophyllum spicatum): 0.0916 mg/l

Exposure time: 14 d

Toxicity to soil dwelling or-

ganisms

LC50: 650 mg/kg Exposure time: 14 d

Operation Figure 14 to 14 to 15 to 15

Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organ-

isms

Remarks: Material is slightly toxic to birds on an acute basis

(LD50 between 501 and 2000 mg/kg).

oral LD50: 1358 mg/kg bodyweight.

Species: Colinus virginianus (Bobwhite quail)

contact LD50: > 100 µg/bee Species: Apis mellifera (bees)

oral LD50: > 104 μg/bee 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:** 

**Clopyralid Triethylamine Salt:** 

Toxicity to fish : Remarks: For similar active ingredient(s).

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensi-

tive species tested).

LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l

Exposure time: 96 h

Remarks: For similar active ingredient(s).

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 100 mg/l

Exposure time: 48 h

Remarks: For similar active ingredient(s).

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): 33.1

mg/l

End point: Growth rate inhibition

Exposure time: 96 h

Remarks: For similar material(s):

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ErC50 (Myriophyllum spicatum): > 3 mg/l

Exposure time: 14 d

Remarks: For similar material(s):

NOEC (Myriophyllum spicatum): 0.0089 mg/l

Exposure time: 14 d

Remarks: For similar material(s):

M-Factor (Chronic aquatic

toxicity)

Toxicity to terrestrial organ-

isms

Remarks: For similar active ingredient(s).

Material is slightly toxic to birds on an acute basis (LD50 be-

tween 501 and 2000 mg/kg).

Material is practically non-toxic to birds on a dietary basis

(LC50 > 5000 ppm).

**Ecotoxicology Assessment** 

Acute aquatic toxicity : Harmful to aquatic life.

Toxic to aquatic life.

Chronic aquatic toxicity

Very toxic to aquatic life with long lasting effects.

**Triclopyr Triethylamine Salt:** 

Toxicity to fish : Remarks: For similar material(s):

Material is highly toxic to aquatic organisms on an acute basis

(LC50/EC50 between 0.1 and 1 mg/L in the most sensitive

species tested).

LC50 (Cyprinus carpio (Carp)): 350 mg/l

Exposure time: 96 h

LC50 (Lepomis macrochirus (Bluegill sunfish)): > 100 mg/l

Exposure time: 96 h
Test Type: semi-static test

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (eastern oyster (Crassostrea virginica)): 56 - 87 mg/l

Exposure time: 48 h Test Type: static test

EC50 (Daphnia magna (Water flea)): > 448 mg/l

Exposure time: 48 h Test Type: static test

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): 107

mg/l

End point: Growth rate inhibition

Exposure time: 72 h

ErC50 (blue-green alga Anabaena flos-aquae): > 100 mg/l

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Exposure time: 72 h

Test Type: Growth inhibition

EC50 (Lemna gibba): > 1,000 mg/l

Exposure time: 7 d

Test Type: Growth inhibition

ErC50 (Myriophyllum spicatum): 0.241 mg/l

Exposure time: 14 d

Remarks: For similar material(s):

NOEC (Myriophyllum spicatum): 0.0191 mg/l

Exposure time: 14 d

Remarks: For similar material(s):

Toxicity to terrestrial organ-

isms

Remarks: Material is practically non-toxic to birds on a dietary

basis (LC50 > 5000 ppm).

Material is moderately toxic to birds on an acute basis (LD50

between 51 and 500 mg/kg).

oral LD50: 300 mg/kg bodyweight.

Species: Colinus virginianus (Bobwhite quail)

dietary LC50: 11622 mg/kg diet.

Species: Colinus virginianus (Bobwhite quail)

contact LD50: > 100 µg/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.

triethylamine:

Toxicity to fish : LC50 (Rainbow trout (Oncorhynchus mykiss)): 36 mg/l

Exposure time: 96 h

Test Type: flow-through test

Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other :

aquatic invertebrates

LC50 (water flea Ceriodaphnia dubia): 17 mg/l

Exposure time: 48 h

Test Type: semi-static test

Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): 8 mg/l

End point: Growth rate

Exposure time: 72 h

NOEC (Pseudokirchneriella subcapitata (green algae)): 1.1

mg/l

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End point: Growth rate Exposure time: 72 h

Toxicity to microorganisms : EC10 (Pseudomonas putida): 71 mg/l

End point: Growth inhibition

Exposure time: 17 h Test Type: Static

EC50 (Pseudomonas putida): 95 mg/l

End point: Growth inhibition

Exposure time: 17 h Test Type: Static

Toxicity to fish (Chronic tox-

icity)

LOEC: > 100 mg/l

End point: mortality Exposure time: 60 d

Species: Rainbow trout (Oncorhynchus mykiss)

Test Type: semi-static test

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

NOEC: 7.1 mg/l End point: mortality Exposure time: 7 d

Species: Ceriodaphnia dubia (water flea)

Test Type: semi-static test

LOEC: 14 mg/l End point: mortality Exposure time: 7 d

Species: Ceriodaphnia dubia (water flea)

Test Type: semi-static test

ethanol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 11,200 - 13,000

mg/l

Exposure time: 96 h

Test Type: flow-through test Method: Method Not Specified.

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 5,414 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic

plants

EbC50 (Skeletonema costatum (marine diatom)): 10,943 -

11,619 mg/l

End point: Biomass Exposure time: 5 d

Method: OECD Test Guideline 201 or Equivalent

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l

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#### 12.2 Persistence and degradability

### **Components:**

**Clopyralid Triethylamine Salt:** 

Biodegradability : Remarks: For similar active ingredient(s).

Clopyralid.

Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegra-

dability.

**Triclopyr Triethylamine Salt:** 

Biodegradability : Remarks: For similar active ingredient(s).

Triclopyr.

Biodegradation under aerobic static laboratory conditions is

high (BOD20 or BOD28/ThOD > 40%).

Remarks: For similar active ingredient(s).

Triclopyr.

Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biode-

gradable under environmental conditions.

triethylamine:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 96 % Exposure time: 21 d

Method: OECD Test Guideline 301A or Equivalent

Remarks: Material is readily biodegradable. Passes OECD

test(s) for ready biodegradability.

Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability).

ThOD : 3.49 kg/kg

Photodegradation : Test Type: Half-life (indirect photolysis)

Sensitiser: OH radicals

Rate constant: 9.26E-11 cm3/s

Method: Estimated.

ethanol:

Biodegradability : Result: Readily biodegradable.

Biodegradation: > 70 %

Exposure time: 5 d

Method: OECD Test Guideline 301D or Equivalent

Remarks: 10-day Window: Pass

ThOD : 2.08 kg/kg

Photodegradation : Test Type: Half-life (indirect photolysis)

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Sensitiser: OH radicals

Rate constant: 3.58E-12 cm3/s

Method: Estimated.

### 12.3 Bioaccumulative potential

#### **Components:**

**Clopyralid Triethylamine Salt:** 

Partition coefficient: n-

Clopyralid.

octanol/water

Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Triclopyr Triethylamine Salt:** 

Partition coefficient: n-

Remarks: For similar active ingredient(s).

Remarks: For similar active ingredient(s).

octanol/water

Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

triethylamine:

Bioaccumulation : Species: Cyprinus carpio (Carp)

Exposure time: 42 d Concentration: 0.05 mg/l

Bioconcentration factor (BCF): < 4.9

Method: Measured

Partition coefficient: n-

octanol/water

log Pow: 1.45

Method: Measured

Remarks: Bioconcentration potential is low (BCF < 100 or Log

Pow < 3).

ethanol:

Partition coefficient: n-

octanol/water

log Pow: -0.31

Method: Measured

Remarks: Bioconcentration potential is low (BCF < 100 or Log

Pow < 3).

### 12.4 Mobility in soil

#### **Components:**

### **Clopyralid Triethylamine Salt:**

Distribution among environ-

mental compartments

Remarks: For similar active ingredient(s).

Clopyralid.

Potential for mobility in soil is very high (Koc between 0 and

50).

**Triclopyr Triethylamine Salt:** 

Distribution among environ-

Remarks: For similar active ingredient(s).

mental compartments

Potential for mobility in soil is very high (Koc between 0 and

50).

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triethylamine:

Distribution among environ-

mental compartments

Koc: 11 - 146 Method: Estimated.

Remarks: Potential for mobility in soil is very high (Koc be-

tween 0 and 50).

ethanol:

Distribution among environ-

mental compartments

Koc: 1.0

Method: Estimated.

Remarks: Potential for mobility in soil is very high (Koc be-

tween 0 and 50).

#### 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.

**Components:** 

**Clopyralid Triethylamine Salt:** 

Assessment : This substance is not considered to be persistent, bioaccumu-

lating and toxic (PBT).. This substance is not considered to be

very persistent and very bioaccumulating (vPvB).

**Triclopyr Triethylamine Salt:** 

Assessment : This substance is not considered to be persistent, bioaccumu-

lating and toxic (PBT).. This substance is not considered to be

very persistent and very bioaccumulating (vPvB).

triethylamine:

Assessment : This substance is not considered to be persistent, bioaccumu-

lating and toxic (PBT).. This substance is not considered to be

very persistent and very bioaccumulating (vPvB).

ethanol:

Assessment : This substance is not considered to be persistent, bioaccumu-

lating and toxic (PBT).

#### 12.6 Other adverse effects

**Product:** 

Endocrine disrupting poten-

tial

The substance/mixture does not contain components considered to have endocrine disrupting properties according to

REACH Article 57(f) or Commission Delegated regulation

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(EU) 2017/2100 or Commission Regulation (EU) 2018/605 at

levels of 0.1% or higher.

**Components:** 

**Clopyralid Triethylamine Salt:** 

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list

of substances that deplete the ozone layer.

**Triclopyr Triethylamine Salt:** 

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list

of substances that deplete the ozone layer.

triethylamine:

Ozone-Depletion Potential : Regulation: (Update: 27/06/2012 KS)

Remarks: This substance is not on the Montreal Protocol list

of substances that deplete the ozone layer.

ethanol:

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list

of substances that deplete the ozone layer.

### **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 identification and disposal methods in compliance with applicable regu-

lations.

If the material as supplied becomes a waste, follow all appli-

cable regional, national and local laws.

### **SECTION 14: Transport information**

### 14.1 UN number

 ADR
 : UN 3082

 RID
 : UN 3082

 IMDG
 : UN 3082

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IATA : UN 3082

14.2 UN proper shipping name

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (Triclopyr)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (Triclopyr)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (Triclopyr)

IATA : Environmentally hazardous substance, liquid, n.o.s.

(Triclopyr)

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
Labels : 9

**IMDG** 

Packing group : III Labels : 9

EmS Code : F-A, S-F

Remarks : Stowage category A

964

IATA (Cargo)

Packing instruction (cargo

aircraft)

Packing instruction (LQ) : Y964
Packing group : III

Labels : Miscellaneous

IATA (Passenger)

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Packing instruction (passen- : 964

ger aircraft)

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(Triclopyr)

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 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 Candidate list of substances of very high

concern (SVHC) for Authorisation

The Persistent Organic Pollutants Regulations (retained : Not applicable

Regulation (EU) 2019/1021 as amended for Great Brit-

ain)

Regulation (EC) No 1005/2009 on substances that de-

plete the ozone layer

UK REACH List of substances subject to authorisation : Not applicable

(Annex XIV)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving

dangerous substances.

ENVIRONMENTAL HAZARDS

: Not applicable

Not applicable

Registration Number : 19876

E1

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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**

#### **Full text of H-Statements**

H225 : Highly flammable liquid and vapour. H226 : Flammable liquid and vapour.

H302 : Harmful if swallowed. H311 : Toxic in contact with skin.

H314 : Causes severe skin burns and eye damage.

H318 : Causes serious eye damage. H319 : Causes serious eye irritation.

H331 : Toxic if inhaled.

H335 : May cause respiratory irritation.

H373 : May cause damage to organs through prolonged or repeated

exposure.

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

Eve Dam. : Serious eye damage

Eye Irrit. : Eye irritation
Flam. Liq. : Flammable liquids
Skin Corr. : Skin corrosion

STOT RE : Specific target organ toxicity - repeated exposure STOT SE : Specific target organ toxicity - single exposure

2000/39/EC : Europe. Commission Directive 2000/39/EC establishing a first

list of indicative occupational exposure limit values

Dow IHG : Dow Industrial Hygiene Guideline

GB EH40 : UK. EH40 WEL - Workplace Exposure Limits

2000/39/EC / TWA : Limit Value - eight hours
2000/39/EC / STEL : Short term exposure limit
Dow IHG / TWA : Time Weighted Average (TWA):
Dow IHG / STEL : Short term exposure limit
Dow IHG / TWA : Time weighted average

GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL : Short-term exposure limit (15-minute 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.

#### **Further information**

Classification of the m	nixture:	Classification procedure:	
Skin Irrit. 2	H315	Calculation method	
Eye Dam. 1	H318	Calculation method	
STOT SE 3	H335	Based on product data or assessment	
STOT RE 2	H373	Calculation method	
Aquatic Acute 1	H400	Based on product data or assessment	
Aquatic Chronic 1	H410	Based on product data or assessment	

Product code: GF-210

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.

**GB / 6N**