SAFETY DATA SHEET

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

KERB™ FLO

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	25.10.2023	800080005273	Date of first issue: 25.10.2023

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 : KERB™ FLO

Unique Formula Identifier (UFI) : 9949-K0EH-M00K-YDQY

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

Use of the Substance/Mixture : End use herbicide product

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 Number : +44 8006 89 8899
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 sensitisation, Category 1 H317: May cause an allergic skin reaction.

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Carcinogenicity, Category 2	H351: Suspected of causing cancer.
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.
H351 Suspected of causing cancer.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P201 Obtain special instructions before use.
P261 Avoid breathing mist or vapours.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P391 Collect spillage.

Disposal:

P501 Dispose of contents/container to a licensed hazardous-waste 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:

propyzamide (ISO)
2-Naphthalenesulfonic acid, 6-hydroxy-, polymer with formaldehyde and methylphenol, sodium salt
1,2-benzisothiazol-3(2H)-one

Additional Labelling

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

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
propyzamide (ISO)	23950-58-5 245-951-4 616-055-00-4	Carc. 2; H351 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 100	35.09
2-Naphthalenesulfonic acid, 6-hydroxy-, polymer with formaldehyde and methylphenol, sodium salt	68540-70-5	Eye Irrit. 2; H319 Skin Sens. 1; H317	>= 3 - < 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 3; H412 _____ M-Factor (Acute aquatic toxicity): 1 _____ specific concentration limit	>= 0.0025 - < 0.025

		Skin Sens. 1; H317 >= 0.05 %	
Substances with a workplace exposure limit :			
Propylene glycol	57-55-6 200-338-0 01-2119456809-23		>= 3 - < 10

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled : No emergency medical treatment necessary.

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.
Suitable emergency safety shower facility should be available in work area.

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

Hazardous combustion products : During a fire, smoke may contain the original material in addition 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)
Hydrogen chloride gas

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
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 : 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 : 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 absorbant.
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 overpressurization of the container.
Keep in suitable, closed containers for disposal.
Wipe up with absorbent material (e.g. cloth, fleece).
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
See Section 13, Disposal Considerations, for additional information.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours/dust.
Do not smoke.
Handle in accordance with good industrial hygiene and safety practice.
Avoid exposure - obtain special instructions before use.
Smoking, eating and drinking should be prohibited in the application area.
Avoid inhalation of vapour or mist.
Do not swallow.
Avoid contact with skin and eyes.
Avoid contact with eyes.
Avoid prolonged or repeated contact with skin.
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. Containers which are opened must be carefully resealed and kept upright to prevent leakage. 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	Long-term exposure limit (8-hour TWA reference period) (Total vapour and particles)	150 ppm 474 mg/m3	GB EH40
		Long-term exposure limit (8-hour TWA reference period) (particles)	10 mg/m3	GB EH40
1,2-benzisothiazol-3(2H)-one	2634-33-5	Time weighted average	0.06 mg/m3	Dow IHG
		Short term exposure limit	0.1 mg/m3	Dow IHG
Propylene glycol	57-55-6	Long-term exposure limit (8-hour TWA reference period) (Total vapour and particles)	150 ppm 474 mg/m3	GB EH40
		Long-term exposure limit (8-hour TWA reference period) (particles)	10 mg/m3	GB EH40

Derived No Effect Level (DNEL):

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 effects	168 mg/m3
	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):

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).
Hand protection

Remarks	:	Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). 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 instructions/specifications provided by the glove supplier.
Skin and body protection	:	Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.
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

Appearance	:	Liquid.
Colour	:	tan
Odour	:	Mild
Odour Threshold	:	No data available
pH	:	7.91 Method: pH Electrode (1% aqueous suspension)
Melting point/range	:	Not applicable
Freezing point		-5 °C
Boiling point/boiling range	:	No data available
Flash point	:	> 100 °C Method: Closed Cup, closed cup
Evaporation rate	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available

Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.133 g/cm3 (20 °C) Method: Digital density meter
Solubility(ies)		
Water solubility	:	No data available
Auto-ignition temperature	:	> 400 °C
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	No significant increase (>5C) in temperature.

9.2 Other information

Surface tension	:	61.5 mN/m, 25 °C, EC Method A5
Self-ignition	:	No data available

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. None known.

10.4 Conditions to avoid

Conditions to avoid	:	None known.

10.5 Incompatible materials

Materials to avoid	:	Strong acids Strong bases

Strong oxidizing agents

10.6 Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials.
Decomposition products can include and are not limited to:
Carbon oxides
Nitrogen oxides (NOx)
Hydrogen chloride gas

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Components:

propyzamide (ISO):

Acute oral toxicity	:	LD50 (Rat, female): 5,620 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 2.1 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 inhalation toxicity Remarks: Maximum attainable concentration.
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute dermal toxicity

2-Naphthalenesulfonic acid, 6-hydroxy-, polymer with formaldehyde and methylphenol, sodium salt:

Acute oral toxicity	:	Remarks: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. LD50 (Rat): > 2,000 mg/kg

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

Acute oral toxicity	:	LD50 (Rat): 675.3 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 0.25 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity

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

Propylene glycol:

Acute oral toxicity : LD50 (Rat): > 20,000 mg/kg

Acute inhalation toxicity : LC50 (Rabbit): 317.042 mg/l
Exposure time: 2 h
Test atmosphere: dust/mist
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Mist may cause irritation of upper respiratory tract (nose and throat).

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

Skin corrosion/irritation

Components:

propyzamide (ISO):

Result : No skin irritation

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

Species : Rabbit
Result : Skin irritation

Propylene glycol:

Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation

Components:

propyzamide (ISO):

Result : No eye irritation

2-Naphthalenesulfonic acid, 6-hydroxy-, polymer with formaldehyde and methylphenol, sodium salt:

Result : Eye irritation

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

Species : Rabbit
Result : Corrosive

Propylene glycol:

Species : Rabbit
Result : No eye irritation

Respiratory or skin sensitisation

Components:

propyzamide (ISO):

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

Remarks : For respiratory sensitization:
No relevant data found.

2-Naphthalenesulfonic acid, 6-hydroxy-, polymer with formaldehyde and methylphenol, sodium salt:

Assessment : May cause sensitisation by skin contact.
Remarks : Has caused allergic skin reactions when tested in guinea pigs.

Remarks : For respiratory sensitization:
No relevant data found.

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

Species : Mouse
Assessment : The product is a skin sensitiser, sub-category 1B.

Propylene glycol:

Species : human
Assessment : Does not cause skin sensitisation.

Germ cell mutagenicity

Components:

propyzamide (ISO):

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

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

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

Propylene glycol:

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

Carcinogenicity

Components:

propyzamide (ISO):

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Has caused cancer in laboratory animals.

Propylene glycol:

Carcinogenicity - Assessment : Did not cause cancer in laboratory animals.

Reproductive toxicity

Components:

propyzamide (ISO):

Reproductive toxicity - Assessment : 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.

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.

Propylene glycol:

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

STOT - single exposure

Product:

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

Components:

propyzamide (ISO):

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

2-Naphthalenesulfonic acid, 6-hydroxy-, polymer with formaldehyde and methylphenol, sodium salt:

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.

Propylene glycol:

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

Repeated dose toxicity

Components:

propyzamide (ISO):

Remarks : In animals, effects have been reported on the following organs:
Liver.
Kidney.
Adrenal gland.
Thyroid.
Ovaries.
Pancreas.

2-Naphthalenesulfonic acid, 6-hydroxy-, polymer with formaldehyde and methylphenol, sodium salt:

Remarks : No relevant data found.

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

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

Propylene glycol:

Remarks : In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

Aspiration toxicity

Product:

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

Components:

propyzamide (ISO):

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

2-Naphthalenesulfonic acid, 6-hydroxy-, polymer with formaldehyde and methylphenol, sodium salt:
Based on physical properties, not likely to be an aspiration hazard.

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

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 53.6 mg/l Exposure time: 96 h Test Type: flow-through test Method: OECD Test Guideline 203 Remarks: For similar material(s):
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 99.2 mg/l Exposure time: 48 h Test Type: flow-through test Method: OECD Test Guideline 202 Remarks: For similar material(s):
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 10.4 mg/l End point: Growth rate inhibition Exposure time: 72 h Remarks: For similar material(s):

Ecotoxicology Assessment

Acute aquatic toxicity	:	Very toxic to aquatic life.

Components:

propyzamide (ISO):

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 4.7 mg/l Exposure time: 96 h Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): > 5.6 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.98 mg/l End point: Biomass Exposure time: 72 h

		EC50 (Lemna gibba): 1.4 mg/l Exposure time: 14 d ErC50 (Myriophyllum spicatum): 0.021 mg/l Exposure time: 14 d NOEC (Myriophyllum spicatum): 0.0006 mg/l Exposure time: 14 d
M-Factor (Acute aquatic toxicity)	:	10
Toxicity to microorganisms	:	EC50 (activated sludge): > 1,000 mg/l
Toxicity to fish (Chronic toxicity)	:	NOEC: 0.94 mg/l Exposure time: 21 d Species: Oncorhynchus mykiss (rainbow trout) Test Type: flow-through test LOEC: 3.75 mg/l Exposure time: 21 d Species: Oncorhynchus mykiss (rainbow trout) Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.60 mg/l End point: growth Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: flow-through test LOEC: 1.2 mg/l End point: growth Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: flow-through test MATC (Maximum Acceptable Toxicant Level): 0.85 mg/l End point: growth Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: flow-through test
M-Factor (Chronic aquatic toxicity)	:	100
Toxicity to soil dwelling organisms	:	LC50: > 173 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms)
Toxicity to terrestrial organisms	:	Remarks: Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm). Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

oral LD50: > 2250 mg/kg bodyweight.
End point: mortality
Species: Colinus virginianus (Bobwhite quail)

dietary LC50: > 10,000 ppm
Exposure time: 8 d
Species: Colinus virginianus (Bobwhite quail)

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

dietary LC50: > 10,000 ppm
Exposure time: 8 d
Species: Anas platyrhynchos (Mallard duck)

2-Naphthalenesulfonic acid, 6-hydroxy-, polymer with formaldehyde and methylphenol, sodium salt:

Toxicity to fish : Remarks: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50 (Fish): > 200 mg/l
Exposure time: 96 h

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

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1.9 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)): 3.7 mg/l
Exposure time: 48 h
Test Type: flow-through test
Method: OECD Test Guideline 202 or Equivalent

LC50 (Mysid shrimp (Mysidopsis bahia)): 1.9 mg/l
Exposure time: 96 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.8 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.21 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent

ErC50 (diatom Skeletonema costatum): 0.36 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent

NOEC (diatom Skeletonema costatum): 0.15 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent

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

Propylene glycol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 40,613 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : LC50 (Ceriodaphnia dubia (water flea)): 18,340 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 19,000 mg/l
End point: Growth rate inhibition
Exposure time: 96 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : NOEC (Pseudomonas putida): > 20,000 mg/l
Exposure time: 18 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 13,020 mg/l
End point: number of offspring
Exposure time: 7 d
Species: Ceriodaphnia dubia (water flea)
Test Type: semi-static test

12.2 Persistence and degradability

Components:

propyzamide (ISO):

Biodegradability : Result: Not readily biodegradable.
Remarks: Biodegradation may occur under aerobic conditions (in the presence of oxygen).

Stability in water	:	Test Type: Hydrolysis pH: 5 - 9 Method: Stable
Photodegradation	:	Test Type: Half-life (indirect photolysis) Sensitiser: OH radicals Rate constant: 9.149E-11 cm3/s Method: Estimated.

2-Naphthalenesulfonic acid, 6-hydroxy-, polymer with formaldehyde and methylphenol, sodium salt:

Biodegradability	:	Remarks: Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability). Biodegradation: 60 % Exposure time: 28 d Method: OECD Test Guideline 302B or Equivalent

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

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 24 % Exposure time: 28 d Method: OECD Test Guideline 301B or Equivalent Remarks: Abiotic degradation: The material is rapidly degradable by abiotic means.
ThOD	:	2.22 kg/kg
Photodegradation	:	Sensitiser: OH radicals Concentration: 1,500,000 1/cm3 Rate constant: 1.696E-11 cm3/s Method: Estimated.

Propylene glycol:

Biodegradability	:	Test Type: aerobic Result: Readily biodegradable. Biodegradation: 81 % Exposure time: 28 d Method: OECD Test Guideline 301F or Equivalent Remarks: 10-day Window: Pass Biodegradation: 96 % Exposure time: 64 d Method: OECD Test Guideline 306 or Equivalent Remarks: 10-day Window: Not applicable
Biochemical Oxygen Demand (BOD)	:	69.000 % Incubation time: 5 d

70.000 %
Incubation time: 10 d

86.000 %
Incubation time: 20 d

Chemical Oxygen Demand (COD) : 1.53 kg/kg

ThOD : 1.68 kg/kg

Photodegradation : Rate constant: 1.28E-11 cm3/s
Method: Estimated.

12.3 Bioaccumulative potential

Components:

propyzamide (ISO):

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 49

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

2-Naphthalenesulfonic acid, 6-hydroxy-, polymer with formaldehyde and methylphenol, sodium salt:

Partition coefficient: n-octanol/water : Remarks: No relevant data found.

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

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 3.2
Method: Calculated.

Partition coefficient: n-octanol/water : log Pow: 1.19
Method: OECD Test Guideline 117 or Equivalent
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Propylene glycol:

Bioaccumulation : Bioconcentration factor (BCF): 0.09
Method: Estimated.

Partition coefficient: n-octanol/water : log Pow: -1.07
Method: Measured
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

12.4 Mobility in soil

Components:

propyzamide (ISO):

Distribution among environmental compartments : Koc: 840
Method: Measured
Remarks: Potential for mobility in soil is low (Koc between 500 and 2000).

Stability in soil : Test Type: aerobic degradation
Dissipation time: 33 d
Method: Measured

2-Naphthalenesulfonic acid, 6-hydroxy-, polymer with formaldehyde and methylphenol, sodium salt:

Distribution among environmental compartments : Remarks: No relevant data found.

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.

Propylene glycol:

Distribution among environmental compartments : Koc: < 1
Method: Estimated.
Remarks: 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.
Potential for mobility in soil is very high (Koc between 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:

propyzamide (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).

2-Naphthalenesulfonic acid, 6-hydroxy-, polymer with formaldehyde and methylphenol, sodium salt:

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).

Propylene glycol:

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).

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.

Components:

propyzamide (ISO):

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

2-Naphthalenesulfonic acid, 6-hydroxy-, polymer with formaldehyde and methylphenol, sodium salt:

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.

Propylene glycol:

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 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

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

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

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(Propyzamide)

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	:	Not applicable
The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain)	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
UK 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

Registration Number : 13716

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

H302	:	Harmful if swallowed.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H351	:	Suspected of causing cancer.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Carc.	:	Carcinogenicity
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Skin Irrit.	:	Skin irritation

Skin Sens.	:	Skin sensitisation
Dow IHG	:	Dow Industrial Hygiene Guideline
GB EH40	:	UK. EH40 WEL - Workplace Exposure Limits
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)

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 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; 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 mixture:		**Classification procedure:**
Skin Sens. 1	H317	Calculation method
Carc. 2	H351	Calculation method
Aquatic Acute 1	H400	Based on product data or assessment
Aquatic Chronic 1	H410	Calculation method

Product code: GF-3300

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.

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