SAFETY DATA SHEET
According to UK REACH and COSHH Regulations, and their amendments

BROADWAY ULTRA

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.01.2025	800080102252	Date of first issue: 21.01.2025

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 : BROADWAY ULTRA

Unique Formula Identifier (UFI) : KVXC-U0FF-100R-P972

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
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

+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)

Eye irritation, Category 2	H319: Causes serious eye irritation.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Short-term (acute) aquatic hazard, Cate-	H400: Very toxic to aquatic life.

gory 1	
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

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

Hazard pictograms :

Signal word : Warning

Hazard statements :

H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P261	Avoid breathing dust.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P391	Collect spillage.

Disposal:

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

Pyroxsulam

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)
Cloquintocet	88349-88-6 01-2120249233-62-0000	Aquatic Chronic 2; H411	24.8
Pyroxsulam	422556-08-9 613-327-00-4	Skin Sens. 1B; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 100 M-Factor (Chronic aquatic toxicity): 100	14
mesosulfuron-methyl (ISO)	208465-21-8 606-653-3 607-729-00-9	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 100100 M-Factor (Chronic aquatic toxicity): 100100	14
Sodium lignosulfonate	8061-51-6	Eye Irrit. 2; H319	>= 10 - < 20
citric acid	77-92-9 201-069-1 607-750-00-3 01-2119457026-42	Eye Irrit. 2; H319	>= 3 - < 10

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate	Not Assigned 939-538-4 01-2119976349-20, 01-2119976349-20-0003, 01-2119976349-20-0004, 01-2119976349-20-0005, 01-2119976349-20-0006, 01-2119976349-20-0007	Eye Irrit. 2; H319	>= 1 - < 3
Anatase	1317-70-0 215-280-1 022-006-00-2	Carc. 2; H351	>= 0.1 - < 0.3
Substances with a workplace exposure limit :			
Kaolin	1332-58-7 310-194-1		>= 3 - < 10
Starch	9005-25-8 232-679-6		>= 3 - < 10

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 resistant 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 effects occur, consult a physician.

In case of skin contact : Wash off with plenty of water.

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.

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	:	Carbon oxides Nitrogen oxides (NOx)

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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

Environmental precautions	:	Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. 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	:	Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in.

Pick up and arrange disposal without creating dust.
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.
Sweep up and shovel.
Keep in suitable, closed containers for disposal.
Sweep up or vacuum up spillage and collect in suitable container for disposal.
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 : 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, 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 : Do not store near acids.
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
Pyroxsulam	422556-08-9	Time Weighted Average (TWA):	5 mg/m3	Dow IHG
Kaolin	1332-58-7	Long-term expo-	2 mg/m3	GB EH40

		sure limit (8-hour TWA reference period) (Respirable dust)		
		Long term exposure limit (Respirable dust)	0.1 mg/m3	2004/37/EC
	Further information: Carcinogens or mutagens			
Starch	9005-25-8	Long-term exposure limit (8-hour TWA reference period) (inhalable dust)	10 mg/m3	GB EH40
		Long-term exposure limit (8-hour TWA reference period) (Respirable dust)	4 mg/m3	GB EH40

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 : Use safety glasses (with side shields).

Hand protection

Remarks : Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. 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, 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	:	granules
Colour	:	Tan
Odour	:	mild
Odour Threshold	:	No data available
pH	:	4.39 (20.6 °C)
Melting point/ range	:	No data available
Freezing point		Not applicable
Boiling point/boiling range	:	Not applicable
Flash point	:	Not applicable
Upper explosion limit / Upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Density	:	No data available
Bulk density	:	567 kg/m3 (21.2 °C)
Solubility(ies)		
Water solubility	:	No data available
Auto-ignition temperature	:	Not applicable
Viscosity		
Viscosity, dynamic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	Oxidizing properties (solids) no oxidising properties

9.2 Other information

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

Carbon oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Components:

Cloquintocet:

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

Acute inhalation toxicity : LC50 (Rat, male and female): > 6.11 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

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg

Pyroxsulam:

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 5.42 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 436
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute dermal toxicity

mesosulfuron-methyl (ISO):

Acute oral toxicity : Remarks: Very low toxicity if swallowed.
Harmful effects not anticipated from swallowing small amounts.

(Rat, male and female): > 5,000 mg/kg

Acute inhalation toxicity : Remarks: No adverse effects are anticipated from single exposure to dust.

(Rat, male and female): > 1.33 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Symptoms: No deaths occurred at this concentration.
Remarks: Maximum attainable concentration.

Acute dermal toxicity : Remarks: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

(Rat, male and female): > 5,000 mg/kg

Sodium lignosulfonate:

Acute oral toxicity : LD50 (Rat, male and female): > 10,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0.48 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

citric acid:

Acute oral toxicity : LD50 (Mouse): 5,400 mg/kg
Assessment: The substance or mixture has no acute oral tox-

icity

LD50 (Rat): 3,000 - 12,000 mg/kg

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

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

Acute oral toxicity : LD50: > 4,000 mg/kg
Method: OECD Test Guideline 401
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute oral toxicity

Acute dermal toxicity : LD50: > 2,000 mg/kg
Method: OECD Test Guideline 402
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute dermal toxicity

Anatase:

Acute oral toxicity : LD50 (Rat): > 10,000 mg/kg

Acute inhalation toxicity : LC50 (Rat, male): > 6.82 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

Acute dermal toxicity : LD50 (Rabbit): 10,000 mg/kg

Kaolin:

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

Skin corrosion/irritation

Components:

Pyroxsulam:

Species : Rabbit
Result : No skin irritation

citric acid:

Result : No skin irritation

Anatase:

Result : No skin irritation

Kaolin:
Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation

Components:

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

Sodium lignosulfonate:
Result : Eye irritation

citric acid:
Result : Eye irritation

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:
Result : Mild eye irritation

Anatase:
Result : No eye irritation

Kaolin:
Species : Rabbit
Result : No eye irritation

Respiratory or skin sensitisation

Components:

Cloquintocet:
Species : Mouse
Result : Does not cause skin sensitisation.

Pyroxsulam:
Test Type : Maximisation Test
Species : Guinea pig
Result : The product is a skin sensitiser, sub-category 1B.

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

mesosulfuron-methyl (ISO):

Species : Guinea pig
Result : Does not cause skin sensitisation.

Sodium lignosulfonate:

Species : Guinea pig
Result : Does not cause skin sensitisation.

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

Species : Mouse
Result : Does not cause skin sensitisation.

Anatase:

Species : Mouse
Result : Does not cause skin sensitisation.

Species : Guinea pig
Result : Does not cause skin sensitisation.

Germ cell mutagenicity

Components:

Cloquintocet:

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

Pyroxsulam:

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

mesosulfuron-methyl (ISO):

Germ cell mutagenicity- Assessment : This material was not mutagenic in an Ames bacterial assay.

Sodium lignosulfonate:

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

citric acid:

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

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

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

Anatase:

Germ cell mutagenicity- Assessment	:	In vitro genetic toxicity studies were negative in some cases and positive in other cases., Animal genetic toxicity studies were negative.

Carcinogenicity

Components:

Cloquintocet:

Carcinogenicity - Assessment	:	For similar active ingredient(s)., Did not cause cancer in laboratory animals.

Pyroxsulam:

Carcinogenicity - Assessment	:	There was equivocal evidence of carcinogenic activity in long-term bioassays. These effects are not believed to be relevant to humans.

mesosulfuron-methyl (ISO):

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

citric acid:

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

Anatase:

Carcinogenicity - Assessment	:	Lung fibrosis and tumors have been observed in rats exposed to titanium dioxide in two lifetime inhalation studies. Effects are believed to be due to overloading of the normal respiratory clearance mechanisms caused by the extreme study conditions. Workers exposed to titanium dioxide in the workplace have not shown an unusual incidence of chronic respiratory disease or lung cancer. Titanium dioxide was not carcinogenic in laboratory animals in lifetime feeding studies.

Kaolin:

Carcinogenicity - Assessment	:	Animal testing did not show any carcinogenic effects.

Reproductive toxicity

Components:

Cloquintocet:

Reproductive toxicity - Assessment	:	In animal studies, did not interfere with reproduction. For similar active ingredient(s)., Did not cause birth defects or any other fetal effects in laboratory animals.

Pyroxsulam:

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

tory animals.

mesosulfuron-methyl (ISO):

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

citric acid:

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

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction.

STOT - single exposure

Product:

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

Components:

Cloquintocet:

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

Pyroxsulam:

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

mesosulfuron-methyl (ISO):

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

citric acid:

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

Anatase:

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

Kaolin:

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

Starch:

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.

Repeated dose toxicity

Components:

Cloquintocet:

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

mesosulfuron-methyl (ISO):

Remarks : No relevant data found.

Sodium lignosulfonate:

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

citric acid:

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

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

Remarks : No relevant data found.

Anatase:

Remarks : Repeated excessive inhalation exposures to dusts may cause respiratory effects.
In animals, effects have been reported on the following organs:
Lung.

Kaolin:

Remarks : Repeated excessive exposure to crystalline silica may cause

silicosis, a progressive and disabling disease of the lungs.

Starch:
Remarks : No relevant data found.

Aspiration toxicity

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

Components:

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

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

mesosulfuron-methyl (ISO):
Based on physical properties, not likely to be an aspiration hazard.

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

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

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:
Based on physical properties, not likely to be an aspiration hazard.

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

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

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

SECTION 12: Ecological information

12.1 Toxicity

Product:

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

Components:

Cloquintocet:

Toxicity to fish : LC50 (Sheepshead minnow (Cyprinodon variegatus)): > 120 mg/l
Exposure time: 96 h
Test Type: static test

LC50 (Rainbow trout (Salmo gairdneri)): 89.7 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna): 9.7 mg/l
Exposure time: 48 h
Test Type: Static renewal test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 66.5 mg/l
Exposure time: 72 h
Test Type: static test

ErC50 (Skeletonema costatum (marine diatom)): 12.5 mg/l
Exposure time: 96 h

ErC50 (Anabaena flos-aquae (cyanobacterium)): 23.7 mg/l
Exposure time: 96 h

NOEC (Pseudokirchneriella subcapitata (green algae)): 12.6 mg/l
Exposure time: 72 h
Test Type: Growth inhibition

Toxicity to fish (Chronic toxicity) : NOEC: 0.143 mg/l
Exposure time: 33 d
Species: Pimephales promelas (fathead minnow)
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.437 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

Test Type: semi-static test

Toxicity to terrestrial organisms : Remarks: Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

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

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

Pyroxsulam:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 87.0 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic plants : ErC50 (Lemna gibba): 0.00388 mg/l
End point: Biomass
Exposure time: 7 d
Method: OECD 221.

ErC50 (Freshwater algae (Anabaena fols-aquae)): 0.924 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201

NOEC (Lemna gibba): 0.000681 mg/l
End point: Biomass
Exposure time: 7 d
Method: OECD 221.

ErC50 (Myriophyllum spicatum): 0.0107 mg/l
Exposure time: 14 d

NOEC (Myriophyllum spicatum): 0.00305 mg/l
Exposure time: 14 d

M-Factor (Acute aquatic toxicity) : 100

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l
Exposure time: 3 h

Toxicity to fish (Chronic tox- : NOEC: 3.2 - 10.1 mg/l

icity)		End point: survival Exposure time: 40 d Species: Pimephales promelas (fathead minnow) Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 10.4 mg/l End point: survival Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: static test
M-Factor (Chronic aquatic toxicity)	:	100
Toxicity to soil dwelling organisms	:	LC50: > 10,000 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms)
Toxicity to terrestrial organisms	:	LC50: > 5000 mg/kg diet. Exposure time: 8 d Species: Colinus virginianus (Bobwhite quail) LD50: > 2000 mg/kg bodyweight. Species: Colinus virginianus (Bobwhite quail) oral LD50: > 107.4 micrograms/bee Exposure time: 48 h Species: Apis mellifera (bees) contact LD50: > 100 micrograms/bee Exposure time: 48 h Species: Apis mellifera (bees) dietary LC50: > 5000 mg/kg diet. Exposure time: 8 d Species: Anas platyrhynchos (Mallard duck) NOEC: 5000 mg/kg diet. Exposure time: 8 d Species: Anas platyrhynchos (Mallard duck)

mesosulfuron-methyl (ISO):

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l End point: mortality Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 LC50 (Mysid shrimp (Mysidopsis bahia)): > 100 mg/l

Exposure time: 96 h

Toxicity to algae/aquatic plants : ErC50 (Selenastrum capricornutum (green algae)): > 0.29 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201

ErC50 (Selenastrum capricornutum (green algae)): 3.99 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

ErC50 (Navicula pelliculosa (Freshwater diatom)): > 74.9 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201

ErC50 (Anabaena flos-aquae (cyanobacterium)): 4.1 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201

ErC50 (Skeletonema costatum (marine diatom)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

ErC50 (Lemna gibba (gibbous duckweed)): 0.00129 mg/l
Exposure time: 7 d

M-Factor (Acute aquatic toxicity) : 100

: 100

Toxicity to fish (Chronic toxicity) : NOEC: 32 mg/l
Exposure time: 28 d
Species: Oncorhynchus mykiss (rainbow trout)
Method: OECD Test Guideline 204

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 1.8 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity) : 100

100

Sodium lignosulfonate:

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 (Pimephales promelas (fathead minnow)): 615 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : LC50 (Daphnia magna (Water flea)): > 100 mg/l

aquatic invertebrates

Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202 or Equivalent
Remarks: For this family of materials:

citric acid:

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 (Lepomis macrochirus (Bluegill sunfish)): 1,516 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

LC50 (Leuciscus idus (Golden orfe)): 440 - 760 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,535 mg/l
Exposure time: 24 h
Test Type: Static
Method: OECD Test Guideline 202 or Equivalent

Anatase:

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).

NOEC mortality (Leuciscus idus (Golden orfe)): > 1,000 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
Exposure time: 48 h
Test Type: static test

12.2 Persistence and degradability

Components:

Pyroxsulam:

Biodegradability : Test Type: aerobic
Result: Not biodegradable
Biodegradation: 20 - 30 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent
Remarks: 10-day Window: Fail

Sodium lignosulfonate:

Biodegradability : Result: Not biodegradable
Biodegradation: < 5 %
Exposure time: 28 d
Method: OECD Test Guideline 301E
Remarks: 10-day Window: Fail

Photodegradation : Rate constant: 1.089E-10 cm3/s
Method: Estimated.

citric acid:

Biodegradability : Test Type: aerobic
Result: Readily biodegradable.
Biodegradation: 97 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent
Remarks: 10-day Window: Pass

Test Type: aerobic
Result: Readily biodegradable.
Biodegradation: 98 %
Exposure time: 7 d
Method: OECD Test Guideline 302B or Equivalent
Remarks: 10-day Window: Not applicable

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

Biodegradability : Result: Readily biodegradable.
Remarks: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Method: OECD Test Guideline 301D

Anatase:

Biodegradability : Remarks: Biodegradation is not applicable.

Starch:

Biodegradability : Remarks: Biodegradation may occur under aerobic conditions (in the presence of oxygen).

12.3 Bioaccumulative potential

Components:

Pyroxsulam:

Partition coefficient: n-octanol/water :

log Pow: -1.01
Method: Measured
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

mesosulfuron-methyl (ISO):

Partition coefficient: n-octanol/water : log Pow: -0.48
pH: 7
Method: Estimated.

Sodium lignosulfonate:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 3.2

Partition coefficient: n-octanol/water :

log Pow: -3.45
Method: Estimated.
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

citric acid:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 0.01
Method: Measured

Partition coefficient: n-octanol/water : log Pow: -1.72 (20 °C)
Method: Measured
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

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

Anatase:

Partition coefficient: n-octanol/water : Remarks: Partitioning from water to n-octanol is not applicable.

Starch:

Partition coefficient: n-octanol/water : Remarks: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

12.4 Mobility in soil

Components:

Pyroxsulam:

Distribution among environmental compartments : Koc: 7.4 ml/g
Method: OECD Test Guideline 106
Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

Sodium lignosulfonate:

Distribution among environmental compartments : Koc: > 99999
Method: Estimated.
Remarks: Expected to be relatively immobile in soil (Koc > 5000).

citric acid:

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

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

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

Anatase:

Distribution among environmental compartments : Remarks: No data available.

Starch:

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

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:

Cloquintocet:

Assessment : Substance is not persistent, bioaccumulative, and toxic (PBT).. Substance is not very persistent and very bioaccumulative (vPvB).

Pyroxsulam:

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).

Sodium lignosulfonate:

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

citric acid:

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

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

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

Anatase:

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

Kaolin:

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).

Starch:

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

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:

Cloquintocet:

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

Pyroxsulam:

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

Sodium lignosulfonate:

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

citric acid:

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

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

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

Anatase:

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

Kaolin:

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

Starch:

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 3077

RID : UN 3077

IMDG : UN 3077

IATA : UN 3077

14.2 UN proper shipping name

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Mesosulfuron-methyl, Pyroxsulam)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S.
(Mesosulfuron-methyl, Pyroxsulam)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Mesosulfuron-methyl, Pyroxsulam)

IATA : Environmentally hazardous substance, solid, n.o.s.
(Mesosulfuron-methyl, Pyroxsulam)

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	:	M7
Hazard Identification Number	:	90
Labels	:	9
Tunnel restriction code	:	(-)

RID

Packing group	:	III
Classification Code	:	M7
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)	:	956
Packing instruction (LQ)	:	Y956
Packing group	:	III
Labels	:	Miscellaneous

IATA (Passenger)

Packing instruction (passenger aircraft)	:	956
Packing instruction (LQ)	:	Y956
Packing group	:	III
Labels	:	Miscellaneous

14.5 Environmental hazards

ADR

Environmentally hazardous : no

RID
Environmentally hazardous : no

IMDG
Marine pollutant : no

14.6 Special precautions for user

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

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

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

UK REACH 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) 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 : 21144

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

H317 : May cause an allergic skin reaction.

H319	:	Causes serious eye irritation.
H351	:	Suspected of causing cancer if inhaled.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H411	:	Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Irrit.	:	Eye irritation
Skin Sens.	:	Skin sensitisation
2004/37/EC	:	Europe. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work
Dow IHG	:	Dow Industrial Hygiene Guideline
GB EH40	:	UK. EH40 WEL - Workplace Exposure Limits
2004/37/EC / TWA	:	Long term exposure limit
Dow IHG / TWA	:	Time Weighted Average (TWA):
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:**
Eye Irrit. 2	H319	Calculation method
Skin Sens. 1	H317	Calculation method
Aquatic Acute 1	H400	Based on product data or assessment
Aquatic Chronic 1	H410	Based on product data or assessment

Product code: GF-4320

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