SAFETY DATA SHEET

According to UK REACH and COSHH Regulations, and their amendments

SYNERO™

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	15.11.2024	800080004428	Date of first issue: 15.11.2024

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 : SYNERO™

Unique Formula Identifier (UFI) : T1A2-70J3-W00S-PXQD

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)

Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
Skin irritation, Category 2	H315: Causes skin irritation.

Serious eye damage, Category 1	H318: Causes serious eye damage.
Specific target organ toxicity - single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.
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 : Danger

Hazard statements :

H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

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

Response:

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

Storage:

P405	Store locked up.

Disposal:

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

Hazardous components which must be listed on the label:

Hydrocarbons, C10, aromatics, <1% naphthalene

The following percentage of the mixture consists of ingredient(s) with unknown acute inhalation toxicity: 1.3416 %

Additional Labelling

EUH208	Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

2.3 Other hazards

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

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

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

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Fluroxypyr-meptyl	81406-37-3 279-752-9 607-272-00-5	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 100	14.89
Aminopyralid Potassium	566191-87-5	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	3.79
Hydrocarbons, C10, aromatics, <1% naphthalene	1189173-42-9 918-811-1 01-2119463583-34-0008, 01-2119463583-34-0009, 01-2119463583-34-0010	STOT SE 3; H336 (Central nervous system) Asp. Tox. 1; H304 Aquatic Chronic 2; H411	>= 30 - < 40

Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt	32612-48-9 608-760-0	Skin Irrit. 2; H315 Eye Irrit. 2; H319	>= 3 - < 10
2-methylpentane-2,4-diol	107-41-5 203-489-0 603-053-00-3 01-2119539582-35	Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT RE 2; H373	>= 1 - < 3
Picloram	1918-02-1 217-636-1	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 10	>= 0.025 - < 0.1
1,2-benzisothiazol-3(2H)-one	2634-33-5 220-120-9 613-088-00-6	Acute Tox. 4; H302 Acute Tox. 2; H330 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1 _____ specific concentration limit Skin Sens. 1; H317 >= 0.05 %	>= 0.025 - < 0.05
Substances with a workplace exposure limit :			
Dipropylene glycol monomethyl ether	34590-94-8 252-104-2		>= 20 - < 25

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 person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.
In case of skin contact	:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Suitable emergency safety shower facility should be available in work area.
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 consultation, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.
If swallowed	:	Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

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	:	Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision of whether to induce vomiting or not should be made by a physician. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Excessive exposure may aggravate preexisting liver and kidney disease.

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	:	Nitrogen oxides (NOx) Carbon oxides

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. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Ensure adequate ventilation. 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

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 practice. Avoid exposure - obtain special instructions before use. Smoking, eating and drinking should be prohibited in the application 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. 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
Dipropylene glycol monomethyl ether	34590-94-8	Long-term exposure limit (8-hour TWA reference period)	50 ppm 308 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	50 ppm 308 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		Time weighted average	10 ppm	Dow IHG
		Short term exposure limit	30 ppm	Dow IHG
Fluroxypyr-meptyl	81406-37-3	Time Weighted Average (TWA):	10 mg/m3	Dow IHG
2-methylpentane-2,4-diol	107-41-5	Long-term exposure limit (8-hour TWA reference period)	25 ppm 123 mg/m3	GB EH40
		Short-term exposure limit (15-minute reference period)	25 ppm 123 mg/m3	GB EH40
		Short term exposure limit (Aerosol)	10 mg/m3	Dow IHG
		Ceiling Limit Value (Vapour)	25 ppm	Dow IHG
Picloram	1918-02-1	Long-term exposure limit (8-hour TWA reference period)	10 mg/m3	GB EH40
		Short-term exposure limit (15-minute reference period)	20 mg/m3	GB EH40

1,2-benzisothiazol-3(2H)-one	2634-33-5	Time weighted average (inhalable dust)	0.06 mg/m3	Corteva OEL
		Short term exposure limit (inhalable dust)	0.1 mg/m3	Corteva OEL
Dipropylene glycol monomethyl ether	34590-94-8	Long-term exposure limit (8-hour TWA reference period)	50 ppm 308 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	50 ppm 308 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		Time weighted average	10 ppm	Dow IHG
		Short term exposure limit	30 ppm	Dow IHG
2-methylpentane-2,4-diol	107-41-5	Long-term exposure limit (8-hour TWA reference period)	25 ppm 123 mg/m3	GB EH40
		Short-term exposure limit (15-minute reference period)	25 ppm 123 mg/m3	GB EH40
		Short term exposure limit (Aerosol)	10 mg/m3	Dow IHG
		Ceiling Limit Value (Vapour)	25 ppm	Dow IHG
Picloram	1918-02-1	Long-term exposure limit (8-hour TWA reference period)	10 mg/m3	GB EH40
		Short-term exposure limit (15-minute reference period)	20 mg/m3	GB EH40

Derived No Effect Level (DNEL):

Substance name	End Use	Exposure routes	Potential health effects	Value
Dipropylene glycol monomethyl ether	Workers	Inhalation	Long-term systemic effects	310 mg/m3
	Workers	Skin contact	Long-term systemic effects	65 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	37.2 mg/m3

	Consumers	Skin contact	Long-term systemic effects	15 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	1.67 mg/kg bw/day
2-methylpentane-2,4-diol	Workers	Inhalation	Long-term systemic effects	14 mg/m3
	Workers	Inhalation	Long-term local effects	49 mg/m3
	Workers	Inhalation	Acute local effects	98 mg/m3
	Workers	Skin contact	Long-term systemic effects	2 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	3.5 mg/m3
	Consumers	Inhalation	Long-term local effects	25 mg/m3
	Consumers	Inhalation	Acute local effects	49 mg/m3
	Consumers	Skin contact	Long-term systemic effects	1 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	1 mg/kg bw/day

Predicted No Effect Concentration (PNEC):

Substance name	Environmental Compartment	Value
Dipropylene glycol monomethyl ether	Fresh water	19 mg/l
	Marine sediment	1.9 mg/l
	Intermittent use/release	190 mg/l
	Sewage treatment plant	4168 mg/l
	Fresh water sediment	70.2 mg/kg
	Marine sediment	7.02 mg/kg
	Soil	2.74 mg/kg
2-methylpentane-2,4-diol	Fresh water	0.429 mg/l
	Marine water	0.0429 mg/l
	Intermittent use/release	4.29 mg/l
	Sewage treatment plant	20 mg/l
	Fresh water sediment	1.79 mg/kg
	Marine sediment	0.179 mg/kg
	Soil	0.11 mg/kg
	Oral (Secondary Poisoning)	100 mg/kg food

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.
Local exhaust ventilation may be necessary for some operations.

Personal protective equipment

Eye/face protection : Use chemical goggles.
Hand protection

Remarks	:	Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Styrene/butadiene rubber. Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Natural rubber ("latex"). 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	:	Brown
Odour	:	Mild
Odour Threshold	:	No data available
pH	:	5.8 (19 °C) Concentration: 1 % Method: pH Electrode (1% aqueous suspension)
Melting point/ range	:	Not applicable
Freezing point		No data available
Boiling point/boiling range	:	No data available
Flash point	:	> 100 °C Method: CIPAC MT 12.3, closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	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
Density	:	1.012 g/cm3 (20 °C) Method: Digital density meter
Solubility(ies)		
Water solubility	:	emulsifiable
Auto-ignition temperature	:	> 400 °C Method: EC Method A15
Viscosity		
Viscosity, kinematic	:	13.1 mm2/s
Explosive properties	:	Not explosive
Oxidizing properties	:	No

9.2 Other information

Surface tension	:	31.6 mN/m, 25 °C, EC Method A5

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

10.6 Hazardous decomposition products

Carbon oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity	:	LD50 (Rat, female): > 5,000 mg/kg Method: OECD Test Guideline 425 Remarks: Information source: Internal study report
Acute dermal toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg Method: OECD Test Guideline 402 Remarks: Information source: Internal study report

Components:

Fluroxypyr-meptyl:

Acute oral toxicity	:	LD50 (Rat, female): > 5,000 mg/kg Method: OECD Test Guideline 423 Symptoms: No deaths occurred at this concentration.
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 1.16 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 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 (Rat, female): > 5,000 mg/kg Method: OECD Test Guideline 402 Symptoms: No deaths occurred at this concentration.

Aminopyralid Potassium:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity	:	Remarks: No adverse effects are anticipated from single exposure to dust. Based on the available data, respiratory irritation was not observed. LC50 (Rat): > 5.10 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): > 5,000 mg/kg

Hydrocarbons, C10, aromatics, <1% naphthalene:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Remarks: For similar material(s):

Acute inhalation toxicity : LC50 (Rat): > 4.688 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: For similar material(s):
Maximum attainable concentration.

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: For similar material(s):

Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt:

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

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

2-methylpentane-2,4-diol:

Acute oral toxicity : LD50 (Rat): 3,600 - 4,700 mg/kg

Acute inhalation toxicity : Remarks: Vapor from heated material may cause respiratory irritation.
No deaths occurred following exposure to a saturated atmosphere.

Acute dermal toxicity : LD50 (Rabbit): 13,200 mg/kg

Picloram:

Acute oral toxicity : LD50 (Rat, male): > 5,000 mg/kg
Remarks: Signs and symptoms of excessive exposure may include:
Convulsions.

LD50 (Rat, female): 4,012 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 0.035 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Symptoms: No deaths occurred at this concentration.
Remarks: Maximum attainable concentration.

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

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

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

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

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

Dipropylene glycol monomethyl ether:

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

Acute inhalation toxicity : LC50 (Rat): 3.35 mg/l
Exposure time: 7 h
Test atmosphere: vapour
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): 9,510 mg/kg

Skin corrosion/irritation

Components:

Fluroxypyr-meptyl:

Species : Rabbit
Exposure time : 4 h
Method : OECD Test Guideline 404
Result : No skin irritation

Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt:

Result : Skin irritation

2-methylpentane-2,4-diol:

Result : Skin irritation

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

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Skin irritation

Dipropylene glycol monomethyl ether:

Species	:	Rabbit
Result	:	No skin irritation

Serious eye damage/eye irritation

Product:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Corrosive
Remarks	:	Information source: Internal study report

Components:

Fluroxypyr-meptyl:

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

Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt:

Result	:	Eye irritation

2-methylpentane-2,4-diol:

Result	:	Eye irritation

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

Species	:	Rabbit
Result	:	Corrosive

Dipropylene glycol monomethyl ether:

Species	:	Rabbit
Result	:	No eye irritation

Respiratory or skin sensitisation

Product:

Test Type	:	Maximisation Test
Species	:	Guinea pig
Assessment	:	Does not cause skin sensitisation.
Method	:	OECD Test Guideline 406
Remarks	:	Information source: Internal study report

Components:

Fluroxypyr-meptyl:

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

Aminopyralid Potassium:

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

Hydrocarbons, C10, aromatics, <1% naphthalene:

Species	:	Guinea pig
Result	:	Does not cause skin sensitisation.
Remarks	:	For similar material(s):

2-methylpentane-2,4-diol:

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

Picloram:

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

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

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

Dipropylene glycol monomethyl ether:

Species	:	human
Result	:	Does not cause skin sensitisation.

Germ cell mutagenicity

Components:

Fluroxypyr-meptyl:

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

Aminopyralid Potassium:

Germ cell mutagenicity- Assessment	:	For similar active ingredient(s)., Aminopyralid., In vitro genetic toxicity studies were predominantly negative., Animal genetic toxicity studies were negative.

Hydrocarbons, C10, aromatics, <1% naphthalene:

Germ cell mutagenicity- Assessment	:	For similar material(s):, In vitro genetic toxicity studies were negative., Animal genetic toxicity studies were negative.

2-methylpentane-2,4-diol:

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

Picloram:

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

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

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

Dipropylene glycol monomethyl ether:

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

Carcinogenicity

Components:

Fluroxypyr-meptyl:

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

Aminopyralid Potassium:

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

Hydrocarbons, C10, aromatics, <1% naphthalene:

Carcinogenicity - Assessment	:	Contains naphthalene which has caused cancer in some laboratory animals., However, the relevance of this to humans is unknown.

Picloram:

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

Dipropylene glycol monomethyl ether:

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

Reproductive toxicity

Components:

Fluroxypyr-meptyl:

Reproductive toxicity - Assessment	:	In animal studies, did not interfere with reproduction. Has been toxic to the fetus in laboratory animals at doses toxic to the mother., Did not cause birth defects in laboratory animals.

Aminopyralid Potassium:

Reproductive toxicity - Assessment	:	For similar active ingredient(s)., Aminopyralid., In animal studies, did not interfere with reproduction. For similar active ingredient(s)., Aminopyralid., Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Hydrocarbons, C10, aromatics, <1% naphthalene:

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

2-methylpentane-2,4-diol:

Reproductive toxicity - Assessment	:	In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals., In animal studies, did not interfere with fertility. Did not cause birth defects in laboratory animals.

Picloram:

Reproductive toxicity - Assessment	:	In animal studies, did not interfere with reproduction. Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

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

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

Dipropylene glycol monomethyl ether:

Reproductive toxicity - Assessment	:	For similar material(s):, In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. Did not cause birth defects or any other fetal effects in laboratory animals.

STOT - single exposure

Product:

Assessment : May cause drowsiness or dizziness.

Components:

Fluroxypyr-meptyl:

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

Aminopyralid Potassium:

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

Hydrocarbons, C10, aromatics, <1% naphthalene:

Exposure routes : Inhalation
Assessment : May cause drowsiness or dizziness.

2-methylpentane-2,4-diol:

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.

Dipropylene glycol monomethyl ether:

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.

Components:

Fluroxypyr-meptyl:

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

Repeated dose toxicity

Components:

Fluroxypyr-meptyl:

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

Aminopyralid Potassium:

Remarks : For similar active ingredient(s).
Aminopyralid.
In animals, effects have been reported on the following organs:
Gastrointestinal tract.

Hydrocarbons, C10, aromatics, <1% naphthalene:

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

2-methylpentane-2,4-diol:

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

Picloram:

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

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

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

Dipropylene glycol monomethyl ether:

Remarks : Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

Aspiration toxicity

Product:

May be fatal if swallowed and enters airways.

Components:

Fluroxypyr-meptyl:

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

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

Hydrocarbons, C10, aromatics, <1% naphthalene:
May be fatal if swallowed and enters airways.

2-methylpentane-2,4-diol:
Based on available information, aspiration hazard could not be determined.

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

1,2-benzisothiazol-3(2H)-one:
Based on physical properties, not likely to be an aspiration hazard.

Dipropylene glycol monomethyl ether:
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)): 6.42 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203 or Equivalent Remarks: Information source: Internal study report
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 28.7 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202 or Equivalent Remarks: Information source: Internal study report
Toxicity to algae/aquatic plants	:	ErC50 (diatom Navicula sp.): 7.7 mg/l Exposure time: 72 h Test Type: Growth inhibition Method: OECD Test Guideline 201 or Equivalent Remarks: Information source: Internal study report ErC50 (Myriophyllum spicatum): 0.506 mg/l Exposure time: 14 d

Remarks: Information source: Internal study report

NOEC (Myriophyllum spicatum): 0.0977 mg/l
Exposure time: 14 d
Remarks: Information source: Internal study report

Toxicity to soil dwelling organisms : LC50: 710 mg/kg
Exposure time: 14 d
Species: Eisenia fetida (earthworms)

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

oral LD50: > 2,250 mg/kg
Species: Colinus virginianus (Bobwhite quail)

oral LD50: > 100 micrograms/bee
Species: Apis mellifera (bees)

contact LD50: > 200 micrograms/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:

Fluroxypyr-meptyl:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203 or Equivalent

LC50 (Lepomis macrochirus (Bluegill sunfish)): > 100 mg/l
Exposure time: 96 h
Test Type: Static renewal 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

Toxicity to algae/aquatic plants : ErC50 (green algae): > 1.02 mg/l
Exposure time: 72 h

ErC50 (Navicula pelliculosa (Diatom)): > 1.410 mg/l
Exposure time: 96 h

ErC50 (Myriophyllum spicatum): 0.0113 mg/l
Exposure time: 14 d

NOEC (Myriophyllum spicatum): 0.00079 mg/l
Exposure time: 14 d

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish (Chronic toxicity) : NOEC: 0.32 mg/l
Exposure time: 21 d
Species: Rainbow trout (Oncorhynchus mykiss)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.0605 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity) : 100

Toxicity to soil dwelling organisms : LC50: > 1,000 mg/kg
Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organisms : Remarks: Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).
Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

oral LD50: > 2000 mg/kg bodyweight.
Exposure time: 5 d
Species: Colinus virginianus (Bobwhite quail)

dietary LC50: > 5000 mg/kg diet.
Species: Colinus virginianus (Bobwhite quail)

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

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

Aminopyralid Potassium:

Toxicity to fish : Remarks: For similar active ingredient(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 (Oncorhynchus mykiss (rainbow trout)): > 100 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

Toxicity to algae/aquatic plants	:	ErC50 (Algae): 100 mg/l Exposure time: 72 h ErC50 (Myriophyllum spicatum): 0.363 mg/l Exposure time: 14 d Remarks: For similar material(s): NOEC (Myriophyllum spicatum): 0.0639 mg/l Exposure time: 14 d Remarks: For similar material(s):
Toxicity to terrestrial organisms	:	Remarks: Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg). Material is slightly toxic to birds on a dietary basis (LC50 between 1001 and 5000 ppm).

Ecotoxicology Assessment

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

Hydrocarbons, C10, aromatics, <1% naphthalene:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l Exposure time: 96 h Remarks: For similar material(s):
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna): 3 - 10 mg/l Exposure time: 48 h Remarks: For similar material(s):
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 11 mg/l Exposure time: 72 h Remarks: For similar material(s):

Ecotoxicology Assessment

Chronic aquatic toxicity	:	Toxic to aquatic life with long lasting effects.

2-methylpentane-2,4-diol:

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 (Oncorhynchus mykiss (rainbow trout)): 9,450 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): 3,200 mg/l Exposure time: 48 h

Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic plants : ErC50 (Selenastrum capricornutum (green algae)): > 429 mg/l
End point: Growth rate inhibition
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Bacteria): > 5,000 mg/l
Exposure time: 16 h
Method: hUCC

Picloram:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 8.8 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 44.2 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 78.7 mg/l
End point: Growth rate inhibition
Exposure time: 72 h

EC50 (Lemna gibba): 102 mg/l
Exposure time: 14 d
Test Type: Growth inhibition

ErC50 (Myriophyllum spicatum): 0.558 mg/l
Exposure time: 14 d

NOEC (Myriophyllum spicatum): 0.0095 mg/l
Exposure time: 14 d

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l
Exposure time: 3 h

Toxicity to fish (Chronic toxicity) : 0.55 mg/l
Exposure time: 70 d
Species: Rainbow trout (Oncorhynchus mykiss)
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 6.79 mg/l
End point: number of offspring
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: static test

LOEC: 13.5 mg/l

End point: number of offspring
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: static test

MATC (Maximum Acceptable Toxicant Level): 9.57 mg/l
End point: number of offspring
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: static test

M-Factor (Chronic aquatic toxicity) : 10

Toxicity to soil dwelling organisms : LC50: > 5,000 mg/kg
Exposure time: 14 d
End point: survival
Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organisms : oral LD50: > 2510 mg/kg bodyweight.
Exposure time: 14 d
Species: Anas platyrhynchos (Mallard duck)

dietary LC50: > 5000 mg/kg diet.
Species: Anas platyrhynchos (Mallard duck)

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

oral LD50: > 74 micrograms/bee
Exposure time: 48 d
Species: Apis mellifera (bees)

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

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

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

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 3.7 mg/l
Exposure time: 48 h
Test Type: flow-through test
Method: OECD Test Guideline 202 or Equivalent

EC50 (Mysid shrimp (Mysidopsis bahia)): 0.99 mg/l
Exposure time: 96 h

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

Dipropylene glycol monomethyl ether:

Toxicity to fish	:	LC50 (Poecilia reticulata (guppy)): > 1,000 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203 or Equivalent
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): 1,919 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202 or Equivalent LC50 (Crangon crangon (shrimp)): > 1,000 mg/l

Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 202 or Equivalent

LC50 (copepod Acartia tonsa): 2,070 mg/l
Exposure time: 48 h
Test Type: static test
Method: ISO TC147/SC5/WG2

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 969 mg/l
End point: Biomass
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent

Toxicity to microorganisms : EC10 (Pseudomonas putida): 4,168 mg/l
Exposure time: 18 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: > 0.5 mg/l
Exposure time: 22 d
Species: Daphnia magna (Water flea)
Test Type: flow-through test
Method: OECD Test Guideline 211 or Equivalent

LOEC: > 0.5 mg/l
Exposure time: 22 d
Species: Daphnia magna (Water flea)
Test Type: flow-through test
Method: OECD Test Guideline 211 or Equivalent

MATC (Maximum Acceptable Toxicant Level): > 0.5 mg/l
Exposure time: 22 d
Species: Daphnia magna (Water flea)
Test Type: flow-through test
Method: OECD Test Guideline 211 or Equivalent

Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

12.2 Persistence and degradability

Components:

Fluroxypyr-meptyl:

Biodegradability : Result: Not biodegradable
Biodegradation: 32 %
Exposure time: 28 d
Method: OECD Test Guideline 301D or Equivalent
Remarks: 10-day Window: Fail

ThOD : 2.2 kg/kg

Stability in water	:	Test Type: Hydrolysis Degradation half life: 454 d

Aminopyralid Potassium:

Biodegradability	:	Result: Not biodegradable Biodegradation: 0 % Exposure time: 28 d Method: OECD Test Guideline 301F or Equivalent Remarks: For similar active ingredient(s). Aminopyralid.

Hydrocarbons, C10, aromatics, <1% naphthalene:

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

2-methylpentane-2,4-diol:

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 81 % Exposure time: 28 d Method: OECD Test Guideline 301F or Equivalent Remarks: 10-day Window: Pass
Biochemical Oxygen Demand (BOD)	:	2 % Incubation time: 5 d 29 % Incubation time: 10 d 48 % Incubation time: 20 d
ThOD	:	2.30 kg/kg

Picloram:

Biodegradability	:	Result: Not biodegradable Biodegradation: 1.95 % Exposure time: 28 d Method: OECD Test Guideline 301 Remarks: 10-day Window: Fail
Stability in water	:	Test Type: Hydrolysis Degradation half life (half-life): > 1.8 yr (45 °C) pH: 5 - 9 Method: Measured
Photodegradation	:	Test Type: Half-life (direct photolysis) Test Type: Half-life (indirect photolysis)

Sensitiser: OH radicals
Concentration: 1,500,000 1/cm3
Rate constant: 8.5E-13 cm3/s

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

Biodegradability	:	Result: Not biodegradable Biodegradation: 24 % Exposure time: 28 d Method: OECD Test Guideline 301B or Equivalent
ThOD	:	2.22 kg/kg
Photodegradation	:	Sensitiser: OH radicals Concentration: 1,500,000 1/cm3 Rate constant: 1.696E-11 cm3/s Method: Estimated.

Dipropylene glycol monomethyl ether:

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 75 % Exposure time: 28 d Remarks: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability). Test Type: aerobic Method: OECD Test Guideline 301F or Equivalent Remarks: 10-day Window: Pass
Biochemical Oxygen Demand (BOD)	:	0 % Incubation time: 5 d 0 % Incubation time: 10 d 31.6 % Incubation time: 20 d
Chemical Oxygen Demand (COD)	:	2.02 kg/kg Method: Dichromate
ThOD	:	2.06 kg/kg
Photodegradation	:	Test Type: Half-life (indirect photolysis) Sensitiser: OH radicals Rate constant: 5.00E-05 cm3/s Method: Estimated.

12.3 Bioaccumulative potential

Components:

Fluroxypyr-meptyl:

Bioaccumulation	:	Species: Oncorhynchus mykiss (rainbow trout) Bioconcentration factor (BCF): 26 Method: Measured
Partition coefficient: n-octanol/water	:	log Pow: 5.04 Method: Measured Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Aminopyralid Potassium:

Partition coefficient: n-octanol/water	:	Remarks: For similar active ingredient(s). Aminopyralid. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Hydrocarbons, C10, aromatics, <1% naphthalene:

Partition coefficient: n-octanol/water	:	Remarks: No data available for this product. For similar material(s): Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt:

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

2-methylpentane-2,4-diol:

Bioaccumulation	:	Bioconcentration factor (BCF): 3 Method: Calculated.
Partition coefficient: n-octanol/water	:	log Pow: 0.58 Method: Estimated. Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Picloram:

Bioaccumulation	:	Species: Lepomis macrochirus (Bluegill sunfish) Bioconcentration factor (BCF): 0.54
Partition coefficient: n-octanol/water	:	log Pow: -1.92 Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

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

Bioaccumulation	:	Species: Lepomis macrochirus (Bluegill sunfish) Bioconcentration factor (BCF): 6.95 Method: OECD Test Guideline 305
Partition coefficient: n-octanol/water	:	log Pow: 0.99 (20 °C) pH: 5 Method: OECD Test Guideline 117 or Equivalent log Pow: 0.63 (10 °C) pH: 7 Method: OECD Test Guideline 117 or Equivalent log Pow: 0.70 (20 °C) pH: 7 Method: OECD Test Guideline 117 or Equivalent log Pow: 0.76 (30 °C) pH: 7 Method: OECD Test Guideline 117 or Equivalent log Pow: -0.90 (20 °C) pH: 9 Method: OECD Test Guideline 117 or Equivalent

Dipropylene glycol monomethyl ether:

Partition coefficient: n-octanol/water	:	log Pow: 1.01 Method: Measured Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

12.4 Mobility in soil

Components:

Fluroxypyr-meptyl:

Distribution among environmental compartments	:	Koc: 6200 - 43000 Remarks: Expected to be relatively immobile in soil (Koc > 5000).

Aminopyralid Potassium:

Distribution among environmental compartments	:	Remarks: For similar active ingredient(s). Aminopyralid. Potential for mobility in soil is very high (Koc between 0 and 50).

Hydrocarbons, C10, aromatics, <1% naphthalene:

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

Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt:

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

2-methylpentane-2,4-diol:

Distribution among environmental compartments	:	Koc: 1 Method: Estimated. Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

Picloram:

Distribution among environmental compartments	:	Koc: 35 Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).
Stability in soil	:	Test Type: aerobic degradation Dissipation time: 167 - 513 h Method: Measured Test Type: anaerobic degradation Dissipation time: > 300 h Method: Measured

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.

Dipropylene glycol monomethyl ether:

Distribution among environmental compartments	:	Koc: 0.28 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:

Fluroxypyr-meptyl:

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).

Aminopyralid Potassium:

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).

Hydrocarbons, C10, aromatics, <1% naphthalene:

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

Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt:

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

2-methylpentane-2,4-diol:

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

Picloram:

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).

Dipropylene glycol monomethyl ether:

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 : This substance/mixture does not contain components considered to have endocrine disrupting properties for environment according to UK REACH Article 57(f).

Components:

Fluroxypyr-meptyl:

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

Aminopyralid Potassium:

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

Hydrocarbons, C10, aromatics, <1% naphthalene:

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

Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt:

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

2-methylpentane-2,4-diol:

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

Picloram:

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.

Dipropylene glycol monomethyl ether:

Ozone-Depletion Potential : Regulation: (Update: 11/22/2010 KS 11/25/2010 LMK)
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. (Aromatic hydrocarbon)
RID	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Aromatic hydrocarbon)
IMDG	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Aromatic hydrocarbon)
IATA	:	Environmentally hazardous substance, liquid, n.o.s. (Aromatic hydrocarbon)

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(Aromatic hydrocarbon)

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) 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 : MAPP 18578

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.
H304	:	May be fatal if swallowed and enters airways.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H330	:	Fatal if inhaled.
H336	:	May cause drowsiness or dizziness.
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.
H411	:	Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

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

Corteva OEL	:	Corteva Occupational Exposure Limit
Dow IHG	:	Dow Industrial Hygiene Guideline
GB EH40	:	UK. EH40 WEL - Workplace Exposure Limits
2000/39/EC / TWA	:	Limit Value - eight hours
Corteva OEL / STEL	:	Short term exposure limit
Corteva OEL / TWA	:	Time weighted average
Dow IHG / TWA	:	Time Weighted Average (TWA):
Dow IHG / STEL	:	Short term exposure limit
Dow IHG / TLV-C	:	Ceiling Limit Value
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 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:**
Asp. Tox. 1	H304	Based on product data or assessment
2	H315	Assigned by national authority.
Eye Dam. 1	H318	Based on product data or assessment
STOT SE 3	H336	Based on product data or assessment
Aquatic Acute 1	H400	Based on product data or assessment
Aquatic Chronic 1	H410	Based on product data or assessment

Product code: GF-839

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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