SAFETY DATA SHEET

SENDERO™ 336 SL

Version	Revision Date:	SDS Number:	Date of last issue: -
0.0	30.05.2023	800080003284	Date of first issue: 30.05.2023

Corteva Agriscience™ encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container. This Safety Data Sheet adheres to the standards and regulatory requirements of South Africa 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 : SENDERO™ 336 SL

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

Use of the Substance/Mixture : Plant Protection Product, Herbicide

1.3 Details of the supplier of the safety data sheet

COMPANY IDENTIFICATION
Manufacturer/importer
Corteva Agriscience RSA Proprietary Limited
Block A, 2nd Floor, Lakefield Office Park, 272 West Avenue
Centurion, Gauteng, 1063
SOUTH AFRICA

Customer Information Number : +27 (0) 12 683 5700
E-mail address : SDS@corteva.com

1.4 Emergency telephone number

24-Hour Local Emergency Contact: +27 82 895 0621
24-Hour Emergency Contact: +32 3 575 55 55

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

2.2 Label elements

Hazard pictograms :

Signal word : Warning

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

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

Precautionary statements :

Response:

P391 Collect spillage.

Disposal:

P501 Dispose of contents/container in accordance with applicable regulations.

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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Clopyralid monoethanolamine salt	57754-85-5 260-929-4	Aquatic Chronic 1; H410 _____ M-Factor (Chronic aquatic toxicity): 10	30,82
Aminopyralid Potassium	566191-87-5	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	7,208
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	>= 0,1 - < 0,25
hexachlorobenzene	118-74-1 204-273-9 602-065-00-6	Carc. 1B; H350 STOT RE 1; H372 (Adrenal gland, Kidney, Liver, Bone, Skin, Thy-	<= 0,0002

		roid) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 1.000	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

Protection of first-aiders : If potential for exposure exists refer to Section 8 for specific personal protective equipment.

If inhaled : Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

In case of skin contact : Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

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

If swallowed : No emergency medical treatment necessary.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

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

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray
Alcohol-resistant foam

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Exposure to combustion products may be a hazard to health.
Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.
Combustion products may include and are not limited to:
Hydrogen chloride gas
Carbon oxides

5.3 Advice for firefighters

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

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

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.
Discharge into the environment must be avoided.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil barriers).

Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.
Prevent from entering into soil, ditches, sewers,underwater.
See Section 12, Ecological Information.

6.3 Methods and material for containment and cleaning up

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

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours/dust.
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. 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
Picloram	1918-02-1	OEL-RL	10 mg/m3	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Propylene glycol	Workers	Skin contact	Acute systemic effects	
	Remarks:No data available			
	Workers	Inhalation	Acute systemic effects	
	Remarks:No data available			
	Workers	Skin contact	Acute local effects	
	Remarks:No data available			
	Workers	Inhalation	Acute local effects	
	Remarks:No data available			
	Workers	Skin contact	Long-term systemic effects	
	Remarks:No data available			
	Workers	Inhalation	Long-term systemic effects	168 mg/m3
	Workers	Skin contact	Long-term local effects	
	Remarks:No data available			
	Workers	Inhalation	Long-term local effects	10 mg/m3
	Consumers	Skin contact	Acute systemic effects	
	Remarks:No data available			
	Consumers	Inhalation	Acute systemic effects	
	Remarks:No data available			
	Consumers	Skin contact	Acute local effects	
	Remarks:No data available			
	Consumers	Inhalation	Acute local effects	
	Remarks:No data available			
	Consumers	Skin contact	Long-term systemic effects	
	Remarks:No data available			
	Consumers	Inhalation	Long-term systemic	50 mg/m3

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

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

Substance name	Environmental Compartment	Value
Propylene glycol	Fresh water	260 mg/l
	Marine water	26 mg/l
	Intermittent use/release	183 mg/l
	Sewage treatment plant	20000 mg/l
	Fresh water sediment	572 mg/kg dry weight (d.w.)
	Marine sediment	57,2 mg/kg dry weight (d.w.)
	Soil	50 mg/kg dry weight (d.w.)

8.2 Exposure controls

Engineering measures

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

Personal protective equipment

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

Hand protection

Remarks : Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended. Glove thickness alone is not a good indicator of the level of protection a glove provides against a chemical substance as this level of protection is also highly dependent on the specific composition of the material that the glove is fabricated from. The thickness of the glove must, depending on model and type of material, generally be more than 0.35 mm to offer sufficient protection for prolonged and frequent contact with the substance. As an exception to this general rule it is known that multilayer laminate gloves may offer prolonged protection at thicknesses less than 0.35 mm. Other

		glove materials with a thickness of less than 0.35 mm may offer sufficient protection when only brief contact is expected. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.
Skin and body protection	:	Wear clean, body-covering clothing.
Respiratory protection	:	Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	Liquid.
Colour	:	dark amber
Odour	:	Sweet
Odour Threshold	:	No data available
pH	:	7,82 (22,0 °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	:	> 100,0 °C Method: Pensky-Martens Closed Cup ASTM D 93, closed cup
Evaporation rate	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available

Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1,177 g/cm3 (20,0 °C) Method: Digital density meter
Solubility(ies)		
Water solubility	:	No data available
Auto-ignition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	5,18 mPa.s (20,1 °C) 2,94 mPa.s (40,2 °C)
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive Method: EEC A14
Oxidizing properties	:	No Method: EC Method A.21

9.2 Other information

Flammability (liquids)	:	Not expected to be a static-accumulating flammable liquid.

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

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

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 423
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 5,1 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
Acute dermal toxicity	:	LD50 (Rat, male and female): > 5.000 mg/kg Method: OECD Test Guideline 402

Components:

Clopyralid monoethanolamine salt:

Acute oral toxicity	:	LD50 (Rat): > 5.000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 2,6 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity Remarks: Maximum attainable concentration.
Acute dermal toxicity	:	LD50 (Rabbit): > 2.000 mg/kg Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute dermal toxicity

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

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

hexachlorobenzene:

Acute oral toxicity : LD50 (Rat): 3.500 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Product:

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

Serious eye damage/eye irritation

Product:

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

Components:

Clopyralid monoethanolamine salt:

Species	:	Rabbit
Result	:	No eye irritation

Respiratory or skin sensitisation

Product:

Test Type	:	Local lymph node assay
Species	:	Mouse
Assessment	:	Does not cause skin sensitisation.
Method	:	OECD Test Guideline 429

Components:

Clopyralid monoethanolamine salt:

Species	:	Mouse
Assessment	:	Does not cause skin sensitisation.

Aminopyralid Potassium:

Remarks	:	Did not cause allergic skin reactions when tested in guinea pigs.
Remarks	:	For respiratory sensitization: No relevant data found.

Picloram:

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

hexachlorobenzene:

Species	:	Guinea pig
Assessment	:	Does not cause skin sensitisation.
Remarks	:	For respiratory sensitization: No relevant data found.

Germ cell mutagenicity

Components:

Clopyralid monoethanolamine salt:

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

Aminopyralid Potassium:

Germ cell mutagenicity- As-	:	For similar active ingredient(s)., Aminopyralid., In vitro genetic

sessment		toxicity studies were predominantly negative., Animal genetic toxicity studies were negative.

Picloram:

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

hexachlorobenzene:

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

Carcinogenicity

Components:

Clopyralid monoethanolamine salt:

Carcinogenicity - Assessment	:	Similar formulations did not cause cancer in laboratory animals.

Aminopyralid Potassium:

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

Picloram:

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

hexachlorobenzene:

Carcinogenicity - Assessment	:	Possible human carcinogen Has caused cancer in laboratory animals.

Reproductive toxicity

Components:

Clopyralid monoethanolamine salt:

Reproductive toxicity - Assessment	:	In animal studies, active ingredient did not interfere with reproduction. Clopyralid caused birth defects in test animals, but only at greatly exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure.

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.

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.

hexachlorobenzene:

Reproductive toxicity - Assessment : In animal studies, has been shown to interfere with reproduction.
Has caused birth defects in laboratory animals only at doses toxic to the mother., Has been toxic to the fetus in lab animals at doses nontoxic to the mother., Toxicity to the neonate but not birth defects have occurred in offspring of humans known to have ingested toxic amounts of hexachlorobenzene.

STOT - single exposure

Product:

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

Components:

Clopyralid monoethanolamine salt:

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.

hexachlorobenzene:

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

STOT - repeated exposure

Product:

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

Components:

hexachlorobenzene:

Exposure routes : Ingestion
Target Organs : Adrenal gland, Kidney, Liver, Bone, Skin, Thyroid
Assessment : Causes damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

Clopyralid monoethanolamine salt:

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

Aminopyralid Potassium:

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

Picloram:

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

hexachlorobenzene:

Remarks : In humans, effects have been reported on the following organs:
Eye.
In humans, symptoms may include:
Hair (alopecia)
Convulsions.
Tremors.
In animals, effects have been reported on the following organs:
Immune system.
Kidney.
Liver.
Nervous system.

Aspiration toxicity

Product:

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

Components:

Clopyralid monoethanolamine salt:

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

Aminopyralid Potassium:

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

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

hexachlorobenzene:
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 not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species). LC50 (Rainbow trout (Oncorhynchus mykiss)): > 100 mg/l End point: mortality 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)): > 100 mg/l Exposure time: 48 h Test Type: Static

Components:

Clopyralid monoethanolamine salt:

Toxicity to fish	:	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 Test Type: static test Method: OECD Test Guideline 202 or Equivalent
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 30 mg/l Exposure time: 72 h ErC50 (Myriophyllum spicatum): > 3 mg/l Exposure time: 14 d Remarks: For similar material(s): NOEC (Myriophyllum spicatum): 0,0089 mg/l Exposure time: 14 d Remarks: For similar material(s):
M-Factor (Chronic aquatic	:	10

toxicity)

Toxicity to terrestrial organisms	:	oral LD50: 1465 - 2000 mg/kg bodyweight. Exposure time: 14 d Species: Anas platyrhynchos (Mallard duck) Remarks: For similar active ingredient(s). dietary LC50: > 5000 mg/kg diet. Exposure time: 8 d Species: Colinus virginianus (Bobwhite quail) Remarks: For similar active ingredient(s). contact LD50: > 100 micrograms/bee Exposure time: 48 d Species: Apis mellifera (bees) Remarks: For similar active ingredient(s). oral LD50: > 98,1 micrograms/bee Exposure time: 48 d Species: Apis mellifera (bees) Remarks: For similar active ingredient(s).

Ecotoxicology Assessment

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

Aminopyralid Potassium:

Toxicity to fish	:	Remarks: For similar active ingredient(s). Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species). 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 be-

tween 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.

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 : 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.

hexachlorobenzene:

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).

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

LC50 (Brown trout (Salmo trutta)): > 0,3 mg/l
Exposure time: 96 h
Test Type: static test
Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,005 mg/l
Exposure time: 48 h
Method: Other guidelines

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 0,03 mg/l
End point: Growth rate
Exposure time: 96 h
Method: Method Not Specified.

M-Factor (Acute aquatic toxicity) : 10

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,00004 mg/l End point: number of offspring Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Method: Other guidelines
M-Factor (Chronic aquatic toxicity)	:	1.000

Ecotoxicology Assessment

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

12.2 Persistence and degradability

Components:

Clopyralid monoethanolamine salt:

Biodegradability	:	Result: Not biodegradable Remarks: For similar active ingredient(s). Clopyralid.

Aminopyralid Potassium:

Biodegradability	:	Remarks: For similar active ingredient(s). Aminopyralid. Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions. Biodegradation: 0 % Exposure time: 28 d Method: OECD Test Guideline 301F or Equivalent Remarks: 10-day Window: Fail

Picloram:

Biodegradability	:	Result: Not readily 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

hexachlorobenzene:

Biodegradability : Result: Not biodegradable
Remarks: Biodegradation under aerobic laboratory conditions is below detectable limits (BOD20 or BOD28/ThOD < 2.5%). Material is not readily biodegradable according to OECD/EEC guidelines.

Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301C
Remarks: 10-day Window: Not applicable

12.3 Bioaccumulative potential

Components:

Clopyralid monoethanolamine salt:

Partition coefficient: n-octanol/water : Remarks: For similar active ingredient(s).
Clopyralid.
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).

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).

hexachlorobenzene:

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)
Bioconcentration factor (BCF): > 12.000
Method: Measured

Partition coefficient: n-octanol/water : log Pow: 5,73
Method: Measured
Remarks: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

12.4 Mobility in soil

Components:

Clopyralid monoethanolamine salt:

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

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).

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

hexachlorobenzene:

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

12.5 Results of PBT and vPvB assessment

Product:

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

Components:

Clopyralid monoethanolamine salt:

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

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).

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).

hexachlorobenzene:

Assessment : This substance is considered to be persistent, bioaccumulating and toxic (PBT).. This substance is considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

Product:

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

Components:

Clopyralid monoethanolamine salt:

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.

Picloram:

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

hexachlorobenzene:

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

UNRTDG : UN 3082

IMDG : UN 3082

IATA : UN 3082

14.2 UN proper shipping name

UNRTDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Aminopyralid Potassium, Clopyralid monoethanolamine salt)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Aminopyralid Potassium, Clopyralid monoethanolamine salt)

IATA : Environmentally hazardous substance, liquid, n.o.s.
(Aminopyralid Potassium, Clopyralid monoethanolamine salt)

14.3 Transport hazard class(es)

UNRTDG : 9

IMDG : 9

IATA : 9

14.4 Packing group

UNRTDG
Packing group : III
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

IMDG

Marine pollutant	:	yes(Aminopyralid Potassium, Clopyralid monoethanolamine salt)

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

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

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance when it is used in the specified applications.
The mixture is evaluated within the frame of the provisions of Regulation (EC) No. 1107/2009.
Refer to the label for exposure assessment information.

SECTION 16: Other information

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.
Classification was done in accordance with UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Purple Book and complies with the Regulations for Hazardous Chemical Agents, 2021.

Full text of H-Statements

H350	:	May cause cancer.
H372	:	Causes damage to organs through prolonged or repeated exposure if swallowed.
H400	:	Very toxic to aquatic life.
H410	:	Very 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
Carc.	:	Carcinogenicity
STOT RE	:	Specific target organ toxicity - repeated exposure
ZA OEL	:	South Africa. The Regulations for Hazardous Chemical Agents, Occupational Exposure Limits
ZA OEL / OEL-RL	:	Occupational Exposure Limit Restricted limit - 8- hour exposure or equivalent (12 hour shifts)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; 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; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:		**Classification procedure:**
Aquatic Chronic 1	H410	Based on product data or assessment

Product code: GF-2791

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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