SAFETY DATA SHEET
PROMINEX™ Herbicide

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/01/2023	800080005803	Date of first issue: 05/01/2023

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 Canada and may not meet the regulatory requirements in other countries.

SECTION 1. IDENTIFICATION

Product name : PROMINEX™ Herbicide
Other means of identification : No data available

Manufacturer or supplier's details

COMPANY IDENTIFICATION

Manufacturer/importer : CORTEVA AGRISCIENCE CANADA COMPANY
#2450, 215 - 2ND STREET S.W.
CALGARY AB, T2P 1M4
CANADA

Customer Information Number : 800-667-3852
E-mail address : solutions@corteva.com

Emergency telephone number : CANUTEC

1-888-226-8832

Recommended use of the chemical and restrictions on use

Recommended use : End use herbicide product

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Eye irritation : Category 2A

Carcinogenicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Central nervous system)

Aspiration hazard : Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H304 May be fatal if swallowed and enters airways.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.

Precautionary statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing mist or vapours.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P331 Do NOT induce vomiting.
P337 + P313 If eye irritation persists: Get medical advice/ attention.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
Clopyralid monoethanolamine salt	Clopyralid monoethanolamine salt	57754-85-5	12.1
Cloquintocet	Cloquintocet	88349-88-6	0.46
fluroxypyr-meptyl (ISO)	fluroxypyr-meptyl (ISO)	81406-37-3	16.55
Halauxifen-methyl	Halauxifen-methyl	943831-98-9	0.46
Alcohols, C11-14-iso-, C13-rich, ethoxylated	Alcohols, C11-14-iso-, C13-rich, ethoxylated	78330-21-9	>= 20 - < 25 *
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	>= 20 - < 25 *

Dipropylene glycol monomethyl ether	Dipropylene glycol monomethyl ether	34590-94-8	>= 3 - < 10 *
naphthalene	naphthalene	91-20-3	>= 1 - < 3 *
Balance	Balance	Not Assigned	> 5

* Actual concentration or concentration range is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

If inhaled : Move person to fresh air; if effects occur, consult a physician.

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

In case of eye contact : Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.
Suitable emergency eye wash facility should be immediately available.

If swallowed : No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed : None known.

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.

Notes to physician : No specific antidote.
Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray
Alcohol-resistant foam

Unsuitable extinguishing media : None known.

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

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

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.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation.
Use personal protective equipment.
Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

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.

Methods and materials for containment and 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.

SECTION 7. HANDLING AND STORAGE

Local/Total ventilation : Use with local exhaust ventilation.

Advice on safe handling : 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 get on skin or clothing.
Do not breathe vapours or spray mist.
Do not swallow.
Do not get in eyes.
Avoid contact with skin and eyes.
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.

Conditions for safe storage : 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.

Materials to avoid : Do not store near acids.
Strong oxidizing agents

Packaging material : Unsuitable material: None known.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	TWA	100 mg/m3	Corteva OEL
		STEL	300 mg/m3	Corteva OEL
		TWA	200 mg/m3 (total hydrocarbon vapor)	CA AB OEL
		TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
fluroxypyr-meptyl (ISO)	81406-37-3	TWA	10 mg/m3	Dow IHG
Dipropylene glycol monomethyl ether	34590-94-8	TWA	10 ppm	Dow IHG
		STEL	30 ppm	Dow IHG
		TWA	100 ppm 606 mg/m3	CA AB OEL
		STEL	150 ppm 909 mg/m3	CA AB OEL
		TWAEV	100 ppm 606 mg/m3	CA QC OEL
		STEV	150 ppm 909 mg/m3	CA QC OEL
naphthalene	91-20-3	TWA	10 ppm	Dow IHG
		STEL	15 ppm	Dow IHG
		TWA	10 ppm 52 mg/m3	CA AB OEL
		STEL	15 ppm 79 mg/m3	CA AB OEL
		TWA	10 ppm	CA BC OEL
		TWAEV	10 ppm	CA QC OEL
		TWA	10 ppm	ACGIH

Engineering measures : Use engineering controls to maintain airborne level below exposure limit requirements or guidelines.
If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation.
Local exhaust ventilation may be necessary for some operations.

Personal protective equipment

Respiratory protection : Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines.

If there are no applicable exposure limit requirements or guidelines, use an approved respirator.
Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material.
For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

Hand protection
Remarks : Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Neoprene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Eye protection : Use chemical goggles.

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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid
Colour	:	amber
Odour	:	aromatic
Odour Threshold	:	No data available
pH	:	4.85 (20.6 °C)
Melting point/range	:	Not applicable
Boiling point/boiling range	:	No data available
Flash point	:	> 100 °C Method: closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable to liquids
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available

Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	8.853 lb/gal (20 °C)
Solubility(ies)		
Water solubility	:	No data available
Auto-ignition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	60.5 mPa,s (20 °C)
		24.6 mPa,s (40 °C)
Explosive properties	:	No
Oxidizing properties	:	No significant increase (>5C) in temperature.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	No decomposition if stored and applied as directed. Stable under normal conditions.
Possibility of hazardous reactions	:	Stable under recommended storage conditions. No hazards to be specially mentioned. None known.
Conditions to avoid	:	None known.
Incompatible materials	:	Strong acids Strong oxidizing agents
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

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	LD50 (Rat, female): > 2,000 mg/kg Method: OECD Test Guideline 423 Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 11 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403
Acute dermal toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method

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

Cloquintocet:

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

Acute inhalation toxicity : LC50 (Rat, male and female): > 6.11 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute inhalation toxicity

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

fluroxypyr-meptyl (ISO):

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

Acute inhalation toxicity : LC50 (Rat, male and female): > 1.16 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Maximum attainable concentration.

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

Halauxifen-methyl:

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

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

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

Acute oral toxicity : LD50 (Rat): 500 - 2,000 mg/kg

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity : LC50 (Rat): > 11.4 mg/l
Exposure time: 6 h
Test atmosphere: dust/mist

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

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

naphthalene:

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

Lethal Dose (Humans): 5 - 15 grams
Method: Estimated.
Remarks: Excessive exposure may cause hemolysis, thereby impairing the blood's ability to transport oxygen.
Ingestion of naphthalene by humans has caused hemolytic anemia.
Toxicity from swallowing may be greater in humans than in animals.
In humans, symptoms may include:
Confusion.
Lethargy.
Muscle spasms or twitches.
Convulsions.
Coma.

Acute inhalation toxicity : Remarks: Excessive exposure may cause irritation to upper respiratory tract (nose and throat).
Excessive exposure may cause lung injury.
Signs and symptoms of excessive exposure may include:
Headache.
Confusion.
Sweating.
Nausea and/or vomiting.

LC50 (Rat): > 0.41 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Symptoms: The LC50 value is greater than the Maximum Attainable Concentration.
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat): > 2,500 mg/kg
Remarks: Human case reports suggest Naphthalene may be absorbed through the skin in toxic amounts, especially in children.
LD50 (Rabbit): > 2,500 mg/kg

Skin corrosion/irritation

Product:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Mild skin irritation

Components:

fluroxypyr-meptyl (ISO):

Species : Rabbit
Result : No skin irritation

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

Species : Rabbit
Result : No skin irritation

Dipropylene glycol monomethyl ether:

Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation

Product:

Species : Rabbit
Result : Eye irritation
Method : OECD Test Guideline 405

Components:

Clopyralid monoethanolamine salt:

Species : Rabbit
Result : No eye irritation

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

Species : Rabbit
Result : Corrosive

Dipropylene glycol monomethyl ether:

Species : Rabbit
Result : No eye irritation

Respiratory or skin sensitisation

Product:

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

Components:

Clopyralid monoethanolamine salt:

Species : Mouse
Assessment : Does not cause skin sensitisation.

Cloquintocet:

Species : Mouse
Result : Does not cause skin sensitisation.

fluroxypyr-meptyl (ISO):

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

Halauxifen-methyl:

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

Remarks : For respiratory sensitization:
No relevant data found.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Remarks : Did not cause allergic skin reactions when tested in humans.

Remarks : For respiratory sensitization:
No relevant data found.

Dipropylene glycol monomethyl ether:

Species : human
Result : Does not cause skin sensitisation.

naphthalene:

Assessment : Does not cause skin sensitisation.
Remarks : Skin contact may cause an allergic skin reaction in a small proportion of individuals.
Did not cause allergic skin reactions when tested in guinea pigs.

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.

Cloquintocet:

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

fluroxypyr-meptyl (ISO):

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

Halauxifen-methyl:

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

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

Dipropylene glycol monomethyl ether:

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

naphthalene:

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

Carcinogenicity

Components:

Clopyralid monoethanolamine salt:

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

Cloquintocet:

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

fluroxypyr-meptyl (ISO):

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

Halauxifen-methyl:

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Contains naphthalene which has caused cancer in some laboratory animals., In humans, there is limited evidence of cancer in workers involved in naphthalene production. Limited oral studies in rats were negative.

Dipropylene glycol monomethyl ether:

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

naphthalene:

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Has caused cancer in some laboratory animals., In humans, there is limited evidence of cancer in workers involved in naphthalene production. Limited oral studies in rats were negative.

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.

Cloquintocet:

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

fluroxypyr-meptyl (ISO):

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.

Halauxifen-methyl:

Reproductive toxicity - Assessment : For similar active ingredient(s)., Halauxifen., 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.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Reproductive toxicity - Assessment : Available data are inadequate to determine effects on reproduction.
For similar material(s):, Did not cause birth defects or any other fetal effects 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.

naphthalene:

Reproductive toxicity - Assessment : Available data are inadequate to determine effects on reproduction.
Did not cause birth defects in laboratory animals.

STOT - single exposure

Product:

Exposure routes : Inhalation
Target Organs : Central nervous system
Assessment : May cause drowsiness or dizziness.

Components:

Clopyralid monoethanolamine salt:

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

Cloquintocet:

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

Halauxifen-methyl:

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

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Exposure routes : Inhalation
Target Organs : Nervous system
Assessment : May cause drowsiness or dizziness.

Dipropylene glycol monomethyl ether:

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

naphthalene:

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.

Repeated dose toxicity

Components:

Clopyralid monoethanolamine salt:

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

Cloquintocet:

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

fluroxypyr-meptyl (ISO):

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

Halauxifen-methyl:

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Remarks : Excessive exposure to solvent(s) may cause respiratory irritation and central nervous system depression.

Dipropylene glycol monomethyl ether:

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

naphthalene:

Remarks : Observations in animals include:
Respiratory effects.
Excessive exposure may cause hemolysis, thereby impairing the blood's ability to transport oxygen.

Cataracts and other eye effects have been reported in humans repeatedly exposed to naphthalene vapor or dust. Ingestion of naphthalene by humans has caused hemolytic anemia.

Aspiration toxicity

Product:

May be fatal if swallowed and enters airways.

Components:

Clopyralid monoethanolamine salt:

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

Cloquintocet:

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

fluroxypyr-meptyl (ISO):

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

Halauxifen-methyl:

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

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

May be fatal if swallowed and enters airways.

Dipropylene glycol monomethyl ether:

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

naphthalene:

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

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

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 toxicity) : 10

Toxicity to terrestrial organisms : oral LD50 (Anas platyrhynchos (Mallard duck)): 1465 - 2000 mg/kg bodyweight.
Exposure time: 14 d
Remarks: For similar active ingredient(s).

dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5000 mg/kg diet.
Exposure time: 8 d
Remarks: For similar active ingredient(s).

contact LD50 (Apis mellifera (bees)): > 100 micrograms/bee
Exposure time: 48 d
Remarks: For similar active ingredient(s).

oral LD50 (Apis mellifera (bees)): > 98.1 micrograms/bee
Exposure time: 48 d
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.

Cloquintocet:

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

Toxicity to daphnia and other aquatic invertebrates : EC50 (Oyster shell (Crassostrea virginica)): > 110 mg/l
Exposure time: 96 h

LC50 (Mysid shrimp (Mysidopsis bahia)): > 120 mg/l
Exposure time: 96 h
Test Type: semi-static test

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

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

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

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

Toxicity to terrestrial organisms	:	Remarks: Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg). oral LD50 (Colinus virginianus (Bobwhite quail)): > 2250 mg/kg bodyweight. contact LD50 (Apis mellifera (bees)): > 200 µg/bee Exposure time: 48 h

fluroxypyr-meptyl (ISO):

Toxicity to fish	:	Remarks: Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species). LC50 (Oncorhynchus mykiss (rainbow trout)): > 0.225 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203 or Equivalent
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 0.183 mg/l Exposure time: 48 h Test Type: semi-static test Method: OECD Test Guideline 202 or Equivalent
Toxicity to algae/aquatic plants	:	ErC50 (diatom Navicula sp.): 0.24 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 or Equivalent EbC50 (alga Scenedesmus sp.): > 0.47 mg/l Exposure time: 72 h ErC50 (Selenastrum capricornutum (green algae)): > 1.410 mg/l Exposure time: 96 h ErC50 (Myriophyllum spicatum): 0.075 mg/l Exposure time: 14 d NOEC (Myriophyllum spicatum): 0.031 mg/l Exposure time: 14 d
Toxicity to fish (Chronic toxicity)	:	NOEC (Rainbow trout (Oncorhynchus mykiss)): 0.32 mg/l
Toxicity to soil dwelling organisms	:	LC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg
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 (Colinus virginianus (Bobwhite quail)): > 2000 mg/kg bodyweight. Exposure time: 5 d dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5000 mg/kg diet. oral LD50 (Apis mellifera (bees)): > 100 micrograms/bee Exposure time: 48 h

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

Ecotoxicology Assessment

Acute aquatic toxicity	:	Very toxic to aquatic life.
Chronic aquatic toxicity	:	Very toxic to aquatic life with long lasting effects.
Halauxifen-methyl:		
Toxicity to fish	:	Remarks: Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species). LC50 (Rainbow trout (Oncorhynchus mykiss)): 2.01 mg/l Exposure time: 96 h Test Type: static test LC50 (Pimephales promelas (fathead minnow)): > 3.22 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 2.12 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 3.0 mg/l Exposure time: 96 h ErC50 (Myriophyllum spicatum): 0.000393 mg/l End point: Growth rate inhibition Exposure time: 14 d
M-Factor (Acute aquatic toxicity)	:	1,000
Toxicity to fish (Chronic toxicity)	:	NOEC (Pimephales promelas (fathead minnow)): 0.259 mg/l End point: Other Test Type: flow-through test NOEC (Cyprinodon variegatus (sheepshead minnow)): 0.00272 mg/l Exposure time: 36 d Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.484 mg/l End point: number of offspring Exposure time: 21 d Test Type: semi-static test
M-Factor (Chronic aquatic toxicity)	:	1,000
Toxicity to microorganisms	:	EC50 (activated sludge): > 981 mg/l Exposure time: 1 d
Toxicity to soil dwelling organisms	:	LC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg Exposure time: 14 d End point: mortality
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). dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5,620 ppm Exposure time: 5 d Method: Other guidelines

dietary LC50 (Anas platyrhynchos (Mallard duck)): > 5,620 ppm
Exposure time: 5 d
Method: Other guidelines

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

contact LD50 (Apis mellifera (bees)): > 98.1 µg/bee
Exposure time: 48 h
End point: mortality

oral LD50 (Apis mellifera (bees)): > 108 µg/bee
Exposure time: 48 h
End point: mortality

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): > 1 - 10 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): > 1 - 10 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Algae): > 1 - 10 mg/l
Exposure time: 72 h

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Toxicity to fish : Remarks: Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

LC50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 3 - 10 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (green algae)): 11 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201 or Equivalent

Toxicity to terrestrial organisms : dietary LC50 (Colinus virginianus (Bobwhite quail)): > 6,500 ppm
Exposure time: 5 d
Remarks: Based on information for a similar material:

oral LD50 (Colinus virginianus (Bobwhite quail)): > 2,250 mg/kg
Remarks: Based on information for a similar material:

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 daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): > 0.5 mg/l Exposure time: 22 d Test Type: flow-through test Method: OECD Test Guideline 211 or Equivalent LOEC (Daphnia magna (Water flea)): > 0.5 mg/l Exposure time: 22 d Test Type: flow-through test Method: OECD Test Guideline 211 or Equivalent MATC (Maximum Acceptable Toxicant Level) (Daphnia magna (Water flea)): > 0.5 mg/l Exposure time: 22 d Test Type: flow-through test Method: OECD Test Guideline 211 or Equivalent
Toxicity to microorganisms	:	EC10 (Pseudomonas putida): 4,168 mg/l Exposure time: 18 h

Ecotoxicology Assessment

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

naphthalene:

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)): 0.11 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1.6 - 24.1 mg/l Exposure time: 48 h Test Type: static test

Toxicity to algae/aquatic plants	:	ErC50 (Skeletonema costatum (marine diatom)): 0.4 mg/l Exposure time: 72 h Test Type: Growth rate inhibition
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC (Other): 0.37 mg/l End point: mortality Exposure time: 40 d Test Type: flow-through
M-Factor (Chronic aquatic toxicity)	:	1

Ecotoxicology Assessment

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

Persistence and degradability

Components:

Clopyralid monoethanolamine salt:

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

fluroxypyr-meptyl (ISO):

Biodegradability	:	Result: Not biodegradable Remarks: Material is not readily biodegradable according to OECD/EEC guidelines. 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 (half-life): 454 d

Halauxifen-methyl:

Biodegradability	:	Result: Not biodegradable Remarks: For similar active ingredient(s). Halauxifen. Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. Biodegradation: 7.7 % Exposure time: 28 d Method: OECD Test Guideline 310 or Equivalent Remarks: 10-day Window: Not applicable

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

Biodegradability	:	Result: Readily biodegradable. Biodegradation: > 90 % Exposure time: 28 d Method: OECD Test Guideline 301E or Equivalent

Remarks: 10-day Window: Pass

Result: Readily biodegradable.
Biodegradation: > 60 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent
Remarks: 10-day Window: Pass

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Biodegradability : Result: Not readily biodegradable.
Remarks: 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: 39 %
Exposure time: 28 d
Method: OECD Test Guideline 301D or Equivalent
Remarks: 10-day Window: Fail

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).

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.

naphthalene:

Biodegradability : Remarks: Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%).

Biochemical Oxygen Demand (BOD) : 57.000 %
Incubation time: 5 d

71.000 %
Incubation time: 10 d

71.000 %
Incubation time: 20 d

ThOD : 3.00 kg/kg

Photodegradation : Test Type: Half-life (indirect photolysis)
Sensitiser: OH radicals
Concentration: 1,500,000 1/cm3
Rate constant: 2.16E-11 cm3/s
Method: Estimated.

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).

Cloquintocet:

Partition coefficient: n-octanol/water : log Pow: 2.12
Method: Estimated.
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

fluroxypyr-meptyl (ISO):

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).

Halauxifen-methyl:

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 233
Exposure time: 42 d
Temperature: 21.8 °C
Concentration: 0.00194 mg/l

Partition coefficient: n-octanol/water : log Pow: 3.76
Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Partition coefficient: n-octanol/water : log Pow: 2.9 - 6.1
Method: Measured
Remarks: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

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).

naphthalene:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 40 - 300
Exposure time: 28 d
Method: Measured

Partition coefficient: n-octanol/water : log Pow: 3.3
Method: Measured
Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Balance:

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

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).

Cloquintocet:

Distribution among environmental compartments : Koc: 206
Method: Estimated.
Remarks: Potential for mobility in soil is medium (Koc between 150 and 500).

fluroxypyr-meptyl (ISO):

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

Halauxifen-methyl:

Distribution among environmental compartments : Koc: 5684
Remarks: Expected to be relatively immobile in soil (Koc > 5000).

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

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

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).

naphthalene:

Distribution among environmental compartments : Koc: 240 - 1300
Method: Measured
Remarks: Potential for mobility in soil is medium (Koc between 150 and 500).

Balance:

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

Other adverse effects

Components:

Clopyralid monoethanolamine salt:

Results of PBT and vPvB 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).

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

Cloquintocet:

Results of PBT and vPvB 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).

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

fluroxypyr-meptyl (ISO):

Results of PBT and vPvB 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).

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

Halauxifen-methyl:

Results of PBT and vPvB 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).

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

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

Results of PBT and vPvB 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).

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

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

Dipropylene glycol monomethyl ether:

Results of PBT and vPvB 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).
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.

naphthalene:

Results of PBT and vPvB assessment	:	This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).
Ozone-Depletion Potential	:	Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Balance:

Results of PBT and vPvB assessment	:	This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).
Ozone-Depletion Potential	:	Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	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

International Regulations

UNRTDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fluroxypyr 1-methylheptyl ester, Halauxifen-methyl)
Class	:	9
Packing group	:	III
Labels	:	9

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (Fluroxypyr 1-methylheptyl ester, Halauxifen-methyl)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous

Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fluroxypyr 1-methylheptyl ester, Halauxifen-methyl)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes(Fluroxypyr 1-methylheptyl ester, Halauxifen-methyl)
Remarks	:	Stowage category A

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

TDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fluroxypyr 1-methylheptyl ester, Halauxifen-methyl)
Class	:	9
Packing group	:	III
Labels	:	9
ERG Code	:	171
Marine pollutant	:	yes(Fluroxypyr 1-methylheptyl ester, Halauxifen-methyl)

Further information

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.

For Canadian Ground transportation TDG Exemption: 1.45.1 Marine Pollutants (Part 3, Documentation, and Part 4, Dangerous Goods Safety Marks, do not apply if they are in transport solely on land by road vehicle or railway vehicle).

Special precautions for user

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

SECTION 15. REGULATORY INFORMATION

The components of this product are reported in the following inventories:

DSL	:	This product contains components that are not listed on the Canadian DSL nor NDSL.

Pest Control Products Act (PCPA) Registration Number : 34021

Read the PCPA label, authorized under the Pest Control Products Act, prior to using or handling this pest control product.
This chemical is a pest control product registered by Health Canada Pest Management Regulatory Agency and is subject to certain labelling requirements under the Pest Control Products Act (PCPA). There are Canada-specific environmental requirements for handling, use, and disposal of this pest control product that are indicated on the label. These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets. Following is the hazard information required on the pest control products label:
PCPA Label Hazard Communications:
Read the label and booklet before using. Keep out of reach of children.

WARNING EYE AND SKIN IRRITANT

This product is toxic to:
Non-target terrestrial plants
Aquatic organisms

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.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL
CA QC OEL	:	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
Corteva OEL	:	Corteva Occupational Exposure Limit
Dow IHG	:	Dow Industrial Hygiene Guideline
ACGIH / TWA	:	8-hour, time-weighted average
CA AB OEL / TWA	:	8-hour Occupational exposure limit
CA AB OEL / STEL	:	15-minute occupational exposure limit
CA BC OEL / TWA	:	8-hour time weighted average
CA QC OEL / TWAEV	:	Time-weighted average exposure value
CA QC OEL / STEV	:	Short-term exposure value
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 / TWA	:	Time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; ERG - Emergency Response Guide; 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; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; 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; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

Revision Date	:	05/01/2023
Date format	:	mm/dd/yyyy

Product code: GF-4030

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.

CA / 6N