SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

ICADE™ Herbicide

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10/25/2021	800080004718	Date of first issue: 25.10.2021

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 United Kingdom 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 : ICADE™ Herbicide

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 UK Limited
CPC2 CAPITAL PARK
FULBOURN CAMBRIDGE - England - CB21 5XE
UNITED KINGDOM

Customer Information Number : +44 8006 89 8899
E-mail address : SDS@corteva.com

1.4 Emergency telephone number

+44 161 88 41235

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Eye irritation, Category 2	H319: Causes serious eye irritation.
Specific target organ toxicity - repeated exposure, Category 2, Kidney	H373: May cause damage to organs through prolonged or repeated exposure.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Warning

Hazard statements : H319 Causes serious eye irritation.
H373 May cause damage to organs (Kidney) through prolonged or repeated exposure.
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 :

Prevention:

P260 Do not breathe mist/vapours/spray.
P280 Wear eye protection/ face protection.

Response:

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.

Disposal:

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

2.3 Other hazards

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

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

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

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No.	Classification	Concentration (% w/w)

	REACH Registration number		
Triclopyr Triethylamine Salt	57213-69-1 260-625-1	Flam. Liq. 3; H226 Eye Irrit. 2; H319 STOT RE 2; H373 (Kidney) Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 10 - < 20
Aminopyralid Triisopropanolamine Salt	566191-89-7	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 EUH401	>= 1 - < 2.5
triethylamine	121-44-8 204-469-4 612-004-00-5 01-2119475467-26-0012, 01-2119475467-26-0013	Flam. Liq. 2; H225 Acute Tox. 4; H302 Acute Tox. 3; H331 Acute Tox. 3; H311 Skin Corr. 1A; H314 STOT SE 3; H335 (Respiratory system) _____ specific concentration limit STOT SE 3; H335 >= 1 % STOT SE 3; H335 >= 1 %	>= 0.1 - < 0.3
Picloram	1918-02-1 217-636-1	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 10	>= 0.0025 - < 0.025

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection).
If potential for exposure exists refer to Section 8 for specific personal protective equipment.

If inhaled	:	Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.
In case of skin contact	:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
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. Suitable emergency eye wash facility should be available in work area.
If swallowed	:	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	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 firefighting	:	Exposure to combustion products may be a hazard to health.

5.3 Advice for firefighters

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

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

Environmental precautions	:	Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. 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.

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). See Section 13, Disposal Considerations, for additional information.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

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. 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)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
triethylamine	121-44-8	Limit Value - eight hours	2 ppm 8.4 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		Short term exposure limit	3 ppm 12.6 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		Occupational exposure limit value (15-minute reference period)	3 ppm 12.6 mg/m3	GB OEL
	Further information: Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body			
		Occupational exposure limit value (8-hour reference period)	2 ppm 8.4 mg/m3	GB OEL
	Further information: Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body			
		Time weighted average	1 ppm	Dow IHG
		Short term exposure limit	3 ppm	Dow IHG
Picloram	1918-02-1	Occupational exposure limit	10 mg/m3	GB OEL

		value (8-hour reference period)		
		Occupational exposure limit value (15-minute reference period)	20 mg/m3	GB OEL

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

Substance name	End Use	Exposure routes	Potential health effects	Value
triethylamine	Workers	Inhalation	Acute systemic effects	12.6 mg/m3
	Workers	Inhalation	Acute local effects	12.6 mg/m3
	Workers	Skin contact	Long-term systemic effects	12.1 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	8.4 mg/m3
	Workers	Inhalation	Long-term local effects	8.4 mg/m3

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

Substance name	Environmental Compartment	Value
triethylamine	Fresh water	0.064 mg/l
	Marine water	0.0064 mg/l
	Intermittent use/release	0.064 mg/l
	Sewage treatment plant	100 mg/l
	Fresh water sediment	0.1992 mg/kg
	Soil	2.361 mg/kg

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 protection : Use chemical goggles.
Chemical goggles should be consistent with EN 166 or equivalent.

Hand protection

Remarks : 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 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 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 : Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection : Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	Liquid.
Colour	:	Red to brown
Odour	:	Mild
Odour Threshold	:	No test data available
Melting point/range	:	Not applicable
Freezing point		No test data available
Boiling point/boiling range	:	No test data available
Flammability	:	No data available
Upper explosion limit / Upper flammability limit	:	No test data available
Lower explosion limit / Lower	:	No test data available

flammability limit

Flash point	:	> 100 °C Method: closed cup
Auto-ignition temperature	:	Method: 92/69/EEC A15 none below 400 degC
pH	:	7.3 (23.4 °C)
Viscosity Viscosity, dynamic	:	< 3 mPa,s
Solubility(ies) Water solubility	:	Soluble
Vapour pressure	:	No test data available
Density	:	1.0528 g/cm3 Method: Digital density meter
Relative vapour density	:	No test data available

9.2 Other information

Explosives	:	No GLP: yes
Oxidizing properties	:	No
Evaporation rate	:	No test data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

No decomposition if stored and applied as directed.
Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Stable under recommended storage conditions. No hazards to be specially mentioned. None known.

10.4 Conditions to avoid

Conditions to avoid	:	None known.

10.5 Incompatible materials

Materials to avoid	:	None.

10.6 Hazardous decomposition products

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product:

Acute oral toxicity : Remarks: Low toxicity if swallowed.
Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

LD50 (Rat, female): 3,752 mg/kg
Remarks: As product:

Acute inhalation toxicity : Remarks: Prolonged exposure is not expected to cause adverse effects.
Based on the available data, respiratory irritation was not observed.

LC50 (Rat): > 5.34 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: As product:

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

LD50 (Rat): > 5,000 mg/kg
Remarks: As product:

Components:

Triclopyr Triethylamine Salt:

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

Acute inhalation toxicity : LC50 (Rat): > 2.6 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 achievable concentration.

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

Aminopyralid Triisopropanolamine Salt:

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

Acute inhalation toxicity : LC50 (Rat): > 5.79 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: For similar material(s):

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

triethylamine:

Acute oral toxicity : LD50 (Rat): 730 mg/kg
Remarks: Swallowing may result in burns of the mouth and throat.

Acute inhalation toxicity : Remarks: Vapor concentrations are attainable which could be hazardous on single exposure.
Prolonged excessive exposure may cause serious adverse effects, even death.
Vapor may cause irritation of the upper respiratory tract (nose and throat).
In humans, symptoms may include:
Headache.

LC50 (Rat): 14.4 mg/l
Exposure time: 1 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): 580 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

Skin corrosion/irritation

Product:

Result : No skin irritation
Remarks : Brief contact may cause skin irritation with local redness.

Components:

Aminopyralid Triisopropanolamine Salt:

Result : No skin irritation

triethylamine:

Result : Causes severe burns.

Serious eye damage/eye irritation

Product:

Result : Eye irritation
Remarks : May cause moderate eye irritation.
May cause slight corneal injury.

Components:

Triclopyr Triethylamine Salt:

Result : Eye irritation

Aminopyralid Triisopropanolamine Salt:

Result : No eye irritation

triethylamine:

Result : Corrosive

Respiratory or skin sensitisation

Product:

Assessment : Does not cause skin sensitisation.
Remarks : Did not demonstrate the potential for contact allergy in mice.

Remarks : For respiratory sensitization:
No relevant data found.

Components:

Triclopyr Triethylamine Salt:

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

Remarks : For respiratory sensitization:
No relevant data found.

Aminopyralid Triisopropanolamine Salt:

Assessment : Does not cause skin sensitisation.
Remarks : For similar active ingredient(s).
Did not cause allergic skin reactions when tested in guinea pigs.

Remarks : For respiratory sensitization:
No relevant data found.

triethylamine:

Assessment : Does not cause skin sensitisation.
Remarks : Did not demonstrate the potential for contact allergy in mice.

Remarks : For respiratory sensitization:
No relevant data found.

Picloram:

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

Chronic toxicity

Germ cell mutagenicity

Components:

Triclopyr Triethylamine Salt:

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

Aminopyralid Triisopropanolamine Salt:

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

triethylamine:

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

Picloram:

Germ cell mutagenicity- Assessment : The preponderance of data shows picloram to be non-mutagenic in 'in vitro' (test tube) tests and in animal test systems.

Carcinogenicity

Components:

Triclopyr Triethylamine Salt:

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

Aminopyralid Triisopropanolamine Salt:

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

triethylamine:

Carcinogenicity - Assessment	:	Available data are inadequate to evaluate carcinogenicity.

Picloram:

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

Reproductive toxicity

Components:

Triclopyr Triethylamine Salt:

Reproductive toxicity - Assessment	:	For similar active ingredient(s)., Triclopyr., In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. Has been toxic to the fetus in laboratory animals at doses toxic to the mother., Did not cause birth defects in laboratory animals.

Aminopyralid Triisopropanolamine Salt:

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.

STOT - single exposure

Product:

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

Components:

Triclopyr Triethylamine Salt:

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

Aminopyralid Triisopropanolamine Salt:

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

triethylamine:

Exposure routes : Inhalation
Target Organs : Respiratory Tract
Assessment : May cause respiratory irritation.

STOT - repeated exposure

Components:

Triclopyr Triethylamine Salt:

Target Organs : Kidney
Assessment : May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

Triclopyr Triethylamine Salt:

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

Aminopyralid Triisopropanolamine Salt:

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

triethylamine:

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

Picloram:

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

Aspiration toxicity

Product:

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

Components:

Triclopyr Triethylamine Salt:

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

Aminopyralid Triisopropanolamine Salt:

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

triethylamine:

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

Picloram:

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

11.2 Information on other hazards

Endocrine disrupting properties

Product:

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

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 800 mg/l Exposure time: 96 h Test Type: flow-through test Method: OECD Test Guideline 203 or Equivalent
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 800 mg/l Exposure time: 48 h Test Type: flow-through test Method: OECD Test Guideline 202 or Equivalent
Toxicity to algae/aquatic plants	:	Remarks: Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species).

ErC50 (diatom Navicula sp.): > 100 mg/l
End point: Growth rate inhibition
Exposure time: 96 h
Method: Method Not Specified.

ErC50 (Myriophyllum spicatum): > 1 mg/l
Exposure time: 14 d

NOEC (Myriophyllum spicatum): 0.0305 mg/l
Exposure time: 14 d

Toxicity to soil dwelling organisms : LC50: > 0.3508 mg/kg
Exposure time: 14 d
Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organisms : Remarks: Material is slightly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg).

oral LD50: 1839 mg/kg bodyweight.
Species: Colinus virginianus (Bobwhite quail)

oral LD50: 133.0 micrograms/bee
Exposure time: 48 h
Species: Apis mellifera (bees)

contact LD50: > 191.6 micrograms/bee
Exposure time: 48 h
Species: Apis mellifera (bees)

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

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

Components:

Triclopyr Triethylamine Salt:

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

LC50 (Cyprinus carpio (Carp)): 350 mg/l
Exposure time: 96 h

LC50 (Lepomis macrochirus (Bluegill sunfish)): > 100 mg/l
Exposure time: 96 h
Test Type: semi-static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (eastern oyster (Crassostrea virginica)): 56 - 87 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 107 mg/l End point: Growth rate inhibition Exposure time: 72 h ErC50 (blue-green alga Anabaena flos-aquae): > 100 mg/l Exposure time: 72 h Test Type: Growth inhibition EC50 (Lemna gibba): > 1,000 mg/l Exposure time: 7 d Test Type: Growth inhibition ErC50 (Myriophyllum spicatum): 0.241 mg/l Exposure time: 14 d Remarks: For similar material(s): NOEC (Myriophyllum spicatum): 0.0191 mg/l Exposure time: 14 d Remarks: For similar material(s):
Toxicity to terrestrial organisms	:	Remarks: Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm). Material is moderately toxic to birds on an acute basis (LD50 between 51 and 500 mg/kg). oral LD50: 300 mg/kg bodyweight. Species: Colinus virginianus (Bobwhite quail) dietary LC50: 11622 mg/kg diet. Species: Colinus virginianus (Bobwhite quail) contact LD50: > 100 µg/bee Exposure time: 48 h 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.

Aminopyralid Triisopropanolamine Salt:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 360 mg/l Exposure time: 96 h Remarks: For similar material(s):
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 460 mg/l Exposure time: 48 h Remarks: For similar material(s):
Toxicity to algae/aquatic plants	:	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):

ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1,000 mg/l
Exposure time: 72 h
Remarks: For similar material(s):

Toxicity to terrestrial organisms : Remarks: Based on information for a similar material:
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).

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

triethylamine:

Toxicity to fish : LC50 (Rainbow trout (Oncorhynchus mykiss)): 36 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : LC50 (water flea Ceriodaphnia dubia): 17 mg/l
Exposure time: 48 h
Test Type: semi-static test
Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 8 mg/l
End point: Growth rate
Exposure time: 72 h

NOEC (Pseudokirchneriella subcapitata (green algae)): 1.1 mg/l
End point: Growth rate
Exposure time: 72 h

Toxicity to microorganisms : EC10 (Pseudomonas putida): 71 mg/l
End point: Growth inhibition
Exposure time: 17 h
Test Type: Static

EC50 (Pseudomonas putida): 95 mg/l
End point: Growth inhibition
Exposure time: 17 h
Test Type: Static

Toxicity to fish (Chronic toxicity) : LOEC: > 100 mg/l
End point: mortality

Exposure time: 60 d
Species: Rainbow trout (Oncorhynchus mykiss)
Test Type: semi-static test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 7.1 mg/l
End point: mortality
Exposure time: 7 d
Species: Ceriodaphnia dubia (water flea)
Test Type: semi-static test

LOEC: 14 mg/l
End point: mortality
Exposure time: 7 d
Species: Ceriodaphnia dubia (water flea)
Test Type: semi-static test

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.

12.2 Persistence and degradability

Components:

Triclopyr Triethylamine Salt:

Biodegradability : Remarks: For similar active ingredient(s).
Triclopyr.
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.

Aminopyralid Triisopropanolamine Salt:

Biodegradability : Remarks: For similar material(s):
Aminopyralid.
Material is not readily biodegradable according to OECD/EEC guidelines.

triethylamine:

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

Biodegradation: 96 %
Exposure time: 21 d
Method: OECD Test Guideline 301A or Equivalent
Remarks: 10-day Window: Pass

Concentration: 30 mg/l
Biodegradation: 25 - 34 %
Exposure time: 28 d
Method: OECD Test Guideline 302C or Equivalent
Remarks: 10-day Window: Not applicable

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

12.3 Bioaccumulative potential

Components:

Triclopyr Triethylamine Salt:

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

Aminopyralid Triisopropanolamine Salt:

Partition coefficient: n-octanol/water :

Remarks: For similar active ingredient(s).
Aminopyralid.

Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

triethylamine:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Exposure time: 42 d
Concentration: 0.05 mg/l
Bioconcentration factor (BCF): < 4.9
Method: Measured

Partition coefficient: n-octanol/water : log Pow: 1.45
Method: Measured
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Picloram:

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 0.54

Partition coefficient: n-octanol/water : log Pow: -1.92
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

12.4 Mobility in soil

Components:

Triclopyr Triethylamine Salt:

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

Aminopyralid Triisopropanolamine Salt:

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

triethylamine:

Distribution among environmental compartments : Koc: 11 - 146
Method: Estimated.
Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

Picloram:

Distribution among environmental compartments : Koc: 35
Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

Stability in soil : Test Type: aerobic degradation
Dissipation time: 167 - 513 h

Method: Measured
Test Type: anaerobic degradation
Dissipation time: > 300 h
Method: Measured

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:

Triclopyr Triethylamine 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 Triisopropanolamine 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)..

triethylamine:

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)..

12.6 Endocrine disrupting properties

Product:

Assessment : 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.

12.7 Other adverse effects

Components:

Triclopyr Triethylamine Salt:

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

Aminopyralid Triisopropanolamine Salt:

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

triethylamine:

Ozone-Depletion Potential : Regulation: (Update: 27/06/2012 KS)
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.

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 or ID number

ADR : UN 3082

RID : UN 3082

IMDG : UN 3082

IATA : UN 3082

14.2 UN proper shipping name

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Triclopyr Triethylamine Salt)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(Triclopyr Triethylamine Salt)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Triclopyr Triethylamine Salt)

IATA : Environmentally hazardous substance, liquid, n.o.s.
(Triclopyr Triethylamine Salt)

14.3 Transport hazard class(es)

ADR : 9

RID : 9

IMDG : 9

IATA : 9

14.4 Packing group

ADR

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9
Tunnel restriction code	:	(-)

RID

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9

IMDG

Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Remarks	:	Stowage category A

IATA (Cargo)

Packing instruction (cargo aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous

IATA (Passenger)

Packing instruction (passenger aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous

14.5 Environmental hazards

ADR
Environmentally hazardous : no

RID
Environmentally hazardous : no

IMDG
Marine pollutant : no

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 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	E1	ENVIRONMENTAL HAZARDS

15.2 Chemical safety assessment

For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

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 H-Statements

H225	:	Highly flammable liquid and vapour.
H226	:	Flammable liquid and vapour.
H302	:	Harmful if swallowed.
H311	:	Toxic in contact with skin.

H314	:	Causes severe skin burns and eye damage.
H319	:	Causes serious eye irritation.
H331	:	Toxic if inhaled.
H335	:	May cause respiratory irritation.
H373	:	May cause damage to organs through prolonged or repeated exposure.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
EUH401	:	To avoid risks to human health and the environment, comply with the instructions for use.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Irrit.	:	Eye irritation
Flam. Liq.	:	Flammable liquids
Skin Corr.	:	Skin corrosion
STOT RE	:	Specific target organ toxicity - repeated exposure
STOT SE	:	Specific target organ toxicity - single exposure
2000/39/EC	:	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
Dow IHG	:	Dow Industrial Hygiene Guideline
2000/39/EC / TWA	:	Limit Value - eight hours
2000/39/EC / STEL	:	Short term exposure limit
Dow IHG / STEL	:	Short term exposure limit
Dow IHG / TWA	:	Time weighted average
GB EH40	:	UK. EH40 WEL - Workplace Exposure Limits
2004/37/EC / TWA	:	Long term exposure limit
GB EH40 / TWA	:	Long-term exposure limit (8-hour TWA reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European 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 sub-

stance; 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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:		**Classification procedure:**
Eye Irrit. 2	H319	Based on product data or assessment
STOT RE 2	H373	Calculation method
Aquatic Chronic 1	H410	Based on product data or assessment

Product code: GF-1883

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

GB / 6N