

Confront®

Version **Revision Date:** SDS Number: Date of last issue: -

06/13/2022 800080004231 Date of first issue: 06/13/2022 1.0

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 the United States and may not meet the regulatory requirements in other countries.

SECTION 1. IDENTIFICATION

Confront® Product name

Manufacturer or supplier's details

COMPANY IDENTIFICATION

CORTEVA AGRISCIENCE LLC Manufacturer/importer

9330 ZIONSVILLE RD

INDIANAPOLIS, IN, 46268-1053

UNITED STATES

Customer Information

Number

: 800-992-5994

E-mail address : customerinformation@corteva.com

Emergency telephone INFOTRAC (CONTRACT 84224).

800-992-5994 or 317-337-6009

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 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids Category 4

Acute toxicity (Oral) Category 4

Serious eye damage Category 1

Skin sensitization Sub-category 1B

Specific target organ toxicity

- single exposure

Category 3 (Respiratory system)

Specific target organ toxicity : Category 2 (Kidney)

- repeated exposure



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Specific target organ toxicity - repeated exposure (Inhala-

tion)

Category 2 (Respiratory Tract)

GHS label elements

Hazard pictograms







Signal Word : Danger

Hazard Statements : H227 Combustible liquid.

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H335 May cause respiratory irritation.

H373 May cause damage to organs (Kidney) through prolonged

or repeated exposure.

H373 May cause damage to organs (Respiratory Tract) through

prolonged or repeated exposure if inhaled.

Precautionary Statements : Prevention:

P210 Keep away from heat/ sparks/ open flames/ hot surfaces.

No smoking.

P260 Do not breathe mist or vapors.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing must not be allowed out of

the workplace.

P280 Wear protective gloves/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON

CENTER/ doctor if you feel unwell. Rinse mouth.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water. 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 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

P314 Get medical advice/ attention if you feel unwell.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P363 Wash contaminated clothing before reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

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



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P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste dis-

posal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Triclopyr Triethylamine Salt	57213-69-1	33
Clopyralid Triethylamine Salt	119308-91-7	12.1
Amines, tallow alkyl, ethoxylated	61791-26-2	>= 3 - < 10
triethylamine	121-44-8	>= 3 - < 10
edetic acid	60-00-4	>= 1 - < 3
ethanol	64-17-5	>= 1 - < 3
Balance	Not Assigned	> 20

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

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. Wash skin with soap and

plenty of water for 15-20 minutes. Call a poison control center

or doctor for treatment advice.

Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of

properly.

In case of eye contact : Wash immediately and continuously with flowing water for at

least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consul-

tation, preferably from an ophthalmologist.

Suitable emergency eye wash facility should be immediately

available.

If swallowed : Call a poison control center or doctor immediately for treat-

ment 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.

Most important symptoms and effects, both acute and

delayed

None known.



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Protection of first-aiders : First Aid responders should pay attention to self-protection

and use the recommended protective clothing (chemical re-

sistant gloves, splash protection).

If potential for exposure exists refer to Section 8 for specific

personal protective equipment.

Notes to physician : Chemical eye burns may require extended irrigation. Obtain

prompt consultation, preferably from an ophthalmologist.

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. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Unsuitable extinguishing

media

Specific hazards during fire

fighting

Do not use direct water stream.

High volume water jet

Exposure to combustion products may be a hazard to health.

Vapors may form explosive mixtures with air.

Do not allow run-off from fire fighting to enter drains or water

courses.

Flash back possible over considerable distance.

Hazardous combustion prod-

ucts

During a fire, smoke may contain the original material in addi-

tion to combustion products of varying composition which may

be toxic and/or irritating.

Combustion products may include and are not limited to:

Carbon oxides

Hydrogen chloride gas Nitrogen oxides (NOx)

Specific extinguishing meth-

ods

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment. Use water spray to cool unopened containers.

Further information : Use water spray to cool fire exposed containers and fire af-

fected zone until fire is out and danger of reignition has

passed.

Do not use a solid water stream as it may scatter and spread

fire.

Use a water spray to cool fully closed containers.

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 fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.





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SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emer-

gency procedures

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).

Non-sparking tools should be used.

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Suppress (knock down) gases/vapors/mists with a water spray

jet.

See Section 13, Disposal Considerations, for additional infor-

mation.

SECTION 7. HANDLING AND STORAGE

Local/Total ventilation Advice on safe handling : Use with local exhaust ventilation.

To avoid spills during handling keep bottle on a metal tray.

Avoid formation of aerosol.

Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Provide sufficient air exchange and/or exhaust in work rooms.

Do not breathe vapors/dust.

Do not smoke.



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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 ap-

plication area.

Do not get on skin or clothing.

Do not breathe vapors or spray mist.

Do not swallow. Do not get in eyes.

Avoid contact with skin and eyes. Keep container tightly closed.

Keep away from heat and sources of ignition.

Take precautionary measures against static discharges. 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.

No smoking.

Containers which are opened must be carefully resealed and

kept upright to prevent leakage. Keep in properly labeled containers.

Store in accordance with the particular national regulations.

Materials to avoid : Strong oxidizing agents

Explosives Gases

Packaging material : Unsuitable material: None known.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Triclopyr Triethylamine Salt	57213-69-1	TWA	2 mg/m3	Dow IHG
triethylamine	121-44-8	TWA	1 ppm	Dow IHG
		STEL	3 ppm	Dow IHG
		TWA	0.5 ppm	ACGIH
		STEL	1 ppm	ACGIH
		TWA	25 ppm 100 mg/m3	OSHA Z-1
		TWA	10 ppm 40 mg/m3	OSHA P0
		STEL	15 ppm 60 mg/m3	OSHA P0
edetic acid	60-00-4	TWA	10 mg/m3	Dow IHG
ethanol	64-17-5	STEL	1,000 ppm	ACGIH
		TWA	1,000 ppm 1,900 mg/m3	OSHA Z-1
		TWA	1,000 ppm 1,900 mg/m3	OSHA P0



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Engineering measures : Use local exhaust ventilation, or other engineering controls to

maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient

for most operations.

Local exhaust ventilation may be necessary for some opera-

tions.

Personal protective equipment

Respiratory protection : Respiratory protection should be worn when there is a poten-

tial 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 ap-

proved air-purifying respirator.

Hand protection

Remarks : Use gloves chemically resistant to this material. 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"). 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 instruc-

tions/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.

Color : Yellow to purple

Odor : Amine.

Odor Threshold : No data available

pH : 8.1 (72.5 °F / 22.5 °C)

Concentration: 1 % Method: pH Electrode 1% aqueous solution.

Melting point/range : Not applicable

Freezing point No data available



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Boiling point/boiling range : No data available

Flash point : $149 \,^{\circ}\text{F} / 65 \,^{\circ}\text{C}$

Method: Setaflash Closed Cup ASTM D3828, closed cup

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower

flammability limit

No data available

Vapor pressure : Not applicable

Relative vapor density : Not applicable

Density : 1.15 g/cm3 (68 °F / 20 °C)

Method: Digital density meter

Solubility(ies)

Water solubility : Soluble

Autoignition temperature : No data available

Viscosity

Viscosity, kinematic : No data available

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 reac-

tions

Stable under recommended storage conditions.

No hazards to be specially mentioned. Vapors may form explosive mixture with air.

May form explosive dust-air mixture.

Conditions to avoid : Heat, flames and sparks.

Incompatible materials

Hazardous decomposition

products

None.

Decomposition products depend upon temperature, air supply

and the presence of other materials.

Decomposition products can include and are not limited to:

Carbon oxides

Hydrogen chloride gas Nitrogen oxides (NOx)



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SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat): 1,521 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 1.06 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Symptoms: No deaths occurred at this concentration.

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

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 inhala-

tion toxicity

Remarks: Maximum achievable concentration.

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

Assessment: The substance or mixture has no acute dermal

toxicity

Clopyralid Triethylamine Salt:

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

Remarks: For similar active ingredient(s).

Acute inhalation toxicity : LC50 (Rat): > 1.3 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 inhala-

tion toxicity

Remarks: For similar active ingredient(s). Maximum attainable concentration.

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

Remarks: For similar active ingredient(s).



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Amines, tallow alkyl, ethoxylated:

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

Method: OECD Test Guideline 401

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

Method: OECD Test Guideline 402

Assessment: The substance or mixture has no acute dermal

toxicity

triethylamine:

Acute oral toxicity : LD50 (Rat): 730 mg/kg

Acute inhalation toxicity : LC50 (Rat): 14.4 mg/l

Exposure time: 1 h
Test atmosphere: vapor

Acute dermal toxicity : LD50 (Rabbit): 580 mg/kg

edetic acid:

Acute oral toxicity : LD50 (Rat, male and female): 4,500 mg/kg

Acute inhalation toxicity : Remarks: Prolonged excessive exposure to dust may cause

adverse effects.
For narcotic effects:
No relevant data found.

LC50 (Rat, male): > 1 mg/l

Exposure time: 6 h

Test atmosphere: dust/mist

Assessment: The component/mixture is moderately toxic after

short term inhalation.

Skin corrosion/irritation

Product:

Species : Rabbit

Result : No skin irritation

Components:

Amines, tallow alkyl, ethoxylated:

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

triethylamine:

Species : Rabbit

Result : Causes severe burns.

edetic acid:

Result : No skin irritation



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Serious eye damage/eye irritation

Product:

Species : Rabbit Result : Corrosive

Components:

Triclopyr Triethylamine Salt:

Result : Eye irritation

Clopyralid Triethylamine Salt:

Result : Corrosive

Amines, tallow alkyl, ethoxylated:

Species : Rabbit Result : Corrosive

triethylamine:

Species : Rabbit Result : Corrosive

edetic acid:

Result : Eye irritation

Respiratory or skin sensitization

Product:

Species : Guinea pig

Assessment : The product is a skin sensitizer, sub-category 1B.

Components:

Triclopyr Triethylamine Salt:

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

Remarks : For respiratory sensitization:

No relevant data found.

Clopyralid Triethylamine Salt:

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:

Species : Mouse



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Result : Does not cause skin sensitization.

edetic acid:

Assessment : Does not cause skin sensitization.

Remarks : For similar material(s):

Did not cause allergic skin reactions when tested in guinea

pigs.

Remarks : For respiratory sensitization:

No relevant data found.

Germ cell mutagenicity

Components:

Triclopyr Triethylamine Salt:

Germ cell mutagenicity -

Assessment

In vitro genetic toxicity studies were negative.

Clopyralid Triethylamine Salt:

Germ cell mutagenicity -

Assessment

For similar active ingredient(s)., Clopyralid., In vitro genetic toxicity studies were 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.

edetic acid:

Germ cell mutagenicity -

Assessment

Most data indicate that EDTA and its salts are not mutagenic. Minimal effects reported are likely due to trace metal deficien-

cies resulting from chelating by EDTA.

Carcinogenicity

Components:

Triclopyr Triethylamine Salt:

Carcinogenicity - Assessment

For similar active ingredient(s)., Triclopyr., Did not cause can-

cer in laboratory animals.

Clopyralid Triethylamine Salt:

Carcinogenicity - Assess-

ment

For similar active ingredient(s)., Clopyralid., Did not cause

cancer in laboratory animals.

triethylamine:

Carcinogenicity - Assess-

ment

: Available data are inadequate to evaluate carcinogenicity.



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edetic acid:

Carcinogenicity - Assess-

ment

The trisodium salt of EDTA did not cause cancer in laboratory

animals.

IARC Group 1: Carcinogenic to humans

> ethanol 64-17-5

OSHA No component of this product present at levels greater than or equal to 0.1% is

on OSHA's list of regulated carcinogens.

No ingredient of this product present at levels greater than or equal to 0.1% is **NTP**

identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Components:

Triclopyr Triethylamine Salt:

Reproductive toxicity - As-

sessment

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.

Clopyralid Triethylamine Salt:

Reproductive toxicity - As-

sessment

For similar active ingredient(s)., Clopyralid., In animal studies, did not interfere with reproduction.

For similar active ingredient(s)., 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.

edetic acid:

Reproductive toxicity - As-

sessment

Limited data in laboratory animals suggest that the material

does not affect reproduction.

EDTA and its sodium salts have been reported to cause birth defects in laboratory animals only at exaggerated doses that were toxic to the mother. These effects are likely associated

with zinc deficiency due to chelation.

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



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an STOT-SE toxicant.

Clopyralid Triethylamine Salt:

Assessment : Evaluation of available data suggests that this material is not

an STOT-SE toxicant.

Amines, tallow alkyl, ethoxylated:

Assessment : Available data are inadequate to determine single exposure

specific target organ toxicity.

triethylamine:

Routes of exposure : Inhalation
Target Organs : Respiratory Tract

Assessment : May cause respiratory irritation.

edetic acid:

Assessment : Evaluation of available data suggests that this material is not

an STOT-SE toxicant.

STOT-repeated exposure

Components:

Triclopyr Triethylamine Salt:

Target Organs : Kidney

Assessment : May cause damage to organs through prolonged or repeated

exposure.

edetic acid:

Routes of exposure : Inhalation

Target Organs : Respiratory Tract

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 or-

gans: Kidney.

Clopyralid Triethylamine Salt:

Remarks : For similar active ingredient(s).

Based on available data, repeated exposures are not antici-

pated to cause additional significant adverse effects.



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triethylamine:

Remarks : Based on available data, repeated exposures are not antici-

pated to cause significant adverse effects.

edetic acid:

Remarks : Based on information for a similar material:

In animals, effects have been reported on the following or-

gans:

Respiratory tract.

Aspiration toxicity

Product:

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

Components:

Triclopyr Triethylamine Salt:

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

Clopyralid Triethylamine Salt:

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

Amines, tallow alkyl, ethoxylated:

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.

edetic acid:

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

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Triclopyr Triethylamine Salt:

Toxicity to fish : Remarks: For similar material(s):

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive

species tested).

LC50 (Cyprinus carpio (Carp)): 350 mg/l

Exposure time: 96 h

LC50 (Lepomis macrochirus (Bluegill sunfish)): > 100 mg/l



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> 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

EC50 (Daphnia magna (Water flea)): > 448 mg/l

Exposure time: 48 h Test Type: static test

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): 107

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 organ-

isms

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 (Colinus virginianus (Bobwhite quail)): 300 mg/kg

bodyweight.

dietary LC50 (Colinus virginianus (Bobwhite quail)): 11622

mg/kg diet.

contact LD50 (Apis mellifera (bees)): > 100 µg/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.

Clopyralid Triethylamine Salt:

Toxicity to fish Remarks: For similar active ingredient(s).

Material is moderately toxic to aquatic organisms on an acute

basis (LC50/EC50 between 1 and 10 mg/L in the most sensi-



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tive species tested).

LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l

Exposure time: 96 h

Remarks: For similar active ingredient(s).

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 100 mg/l

Exposure time: 48 h

Remarks: For similar active ingredient(s).

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): 33.1

mg/

10

End point: Growth rate inhibition

Exposure time: 96 h

Remarks: For similar material(s):

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)

Toxicity to terrestrial organ-

isms

Remarks: For similar active ingredient(s)., Material is slightly

toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg)., Material is practically non-toxic to birds on a dietary

basis (LC50 > 5000 ppm).

Ecotoxicology Assessment

Acute aquatic toxicity : Harmful to aquatic life.

Toxic to aquatic life.

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

Amines, tallow alkyl, 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 magna (Water flea)): > 1 - 10 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

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



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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 fish (Chronic tox-

icity)

LOEC (Rainbow trout (Oncorhynchus mykiss)): > 100 mg/l

End point: mortality
Exposure time: 60 d
Test Type: semi-static test

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

NOEC (Ceriodaphnia dubia (water flea)): 7.1 mg/l

End point: mortality Exposure time: 7 d

Test Type: semi-static test

LOEC (Ceriodaphnia dubia (water flea)): 14 mg/l

End point: mortality Exposure time: 7 d

Test Type: semi-static test

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

edetic acid:

Toxicity to fish : Remarks: Material is practically non-toxic to aquatic organ-

isms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in

the most sensitive species tested).

LC50 (Fish): 1,000 mg/l Exposure time: 96 h

Method: OECD Test Guideline 203 or Equivalent



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Toxicity to daphnia and other :

aquatic invertebrates

: EC50 (Daphnia magna (Water flea)): 113 mg/l

Exposure time: 48 h Test Type: static test

Method: OECD Test Guideline 202 or Equivalent

Persistence and degradability

Components:

Triclopyr Triethylamine Salt:

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

Triclopyr.

Biodegradation under aerobic static laboratory conditions is

high (BOD20 or BOD28/ThOD > 40%).

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 biode-

gradable under environmental conditions.

Clopyralid Triethylamine Salt:

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

Clopyralid.

Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegra-

dability.

Amines, tallow alkyl, ethoxylated:

Biodegradability : Result: Readily biodegradable.

Biodegradation: > 70 % Exposure time: 28 d

Method: OECD Test Guideline 302B or Equivalent

triethylamine:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 96 % Exposure time: 21 d

Method: OECD Test Guideline 301A or Equivalent

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).

ThOD : 3.49 kg/kg

Photodegradation : Test Type: Half-life (indirect photolysis)

Sensitizer: OH radicals

Rate constant: 9.26E-11 cm3/s

Method: Estimated.



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edetic acid:

Biodegradability : Remarks: Material is inherently biodegradable (reaches >

20% biodegradation in OECD test(s) for inherent biodegrada-

bility).

aerobic

Biodegradation: 37 % Exposure time: 14 d

Method: OECD Test Guideline 302B or Equivalent

Remarks: 10-day Window: Not applicable

Biodegradation: 0 % Exposure time: 30 d

Method: OECD Test Guideline 301D or Equivalent

Remarks: 10-day Window: Fail

ThOD : 1.37 kg/kg

Photodegradation : Test Type: Half-life (indirect photolysis)

Sensitizer: OH radicals

Rate constant: 1.81E-10 cm3/s

Method: Estimated.

Bioaccumulative potential

Components:

Triclopyr Triethylamine Salt:

Partition coefficient: n- : Remarks: For similar active ingredient(s).

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

Clopyralid Triethylamine Salt:

Partition coefficient: n- : Remarks: For similar active ingredient(s).

octanol/water Clopyralid.

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

Amines, tallow alkyl, ethoxylated:

Partition coefficient: n-

octanol/water

Remarks: No data available for this product.

log Pow: 5.89 Method: estimated

Remarks: Bioconcentration potential is high (BCF > 3000 or

Log Pow between 5 and 7).

triethylamine:

Bioaccumulation : Species: Cyprinus carpio (Carp)

Bioconcentration factor (BCF): < 4.9

Exposure time: 42 d Concentration: 0.05 mg/l Method: Measured

Partition coefficient: n- : log Pow: 1.45



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octanol/water Method: Measured

Remarks: Bioconcentration potential is low (BCF < 100 or Log

Pow < 3).

edetic acid:

Bioaccumulation : Species: Fish

Bioconcentration factor (BCF): 1.1

Exposure time: 28 d Method: Measured

Partition coefficient: n-

octanol/water

log Pow: -3.86 (77 °F / 25 °C)

Method: Estimated.

Remarks: Bioconcentration potential is low (BCF < 100 or Log

Pow < 3).

Balance:

Partition coefficient: n-

octanol/water

Remarks: No relevant data found.

Mobility in soil

Components:

Triclopyr Triethylamine Salt:

Distribution among environ-

mental compartments

Remarks: For similar active ingredient(s).

Potential for mobility in soil is very high (Koc between 0 and

50).

Clopyralid Triethylamine Salt:

Distribution among environ-

mental compartments

Remarks: For similar active ingredient(s).

Clopyralid.

Potential for mobility in soil is very high (Koc between 0 and

50).

triethylamine:

Distribution among environ-

mental compartments

Koc: 11 - 146

Method: Estimated.

Remarks: Potential for mobility in soil is very high (Koc be-

tween 0 and 50).

edetic acid:

Distribution among environ-

mental compartments

Koc: 98

Remarks: Potential for mobility in soil is high (Koc between 50

and 150).

Balance:

Distribution among environ-

mental compartments

Remarks: No relevant data found.



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Other adverse effects

Components:

Triclopyr Triethylamine 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.

Clopyralid Triethylamine 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.

Amines, tallow alkyl, ethoxylated:

Results of PBT and vPvB

assessment

This substance has not been assessed for persistence, bioac-

cumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list

of substances that deplete the ozone layer.

triethylamine:

Results of PBT and vPvB

assessment

This substance is not considered to be persistent, bioaccumu-

lating and toxic (PBT). This substance is not considered to be

very persistent and very bioaccumulating (vPvB).

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.

edetic acid:

Results of PBT and vPvB

assessment

: This substance has not been assessed for persistence, bioac-

cumulation 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, bioac-

cumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list

of substances that deplete the ozone layer.



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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 regu-

lations.

If the material as supplied becomes a waste, follow all appli-

cable regional, national and local laws.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN 3082 UN number

Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Triclopyr Triethylamine Salt, Clopyralid Triethylamine Salt)

Class 9 Packing group Ш Labels 9

IATA-DGR

UN/ID No. UN 3082

Proper shipping name Environmentally hazardous substance, liquid, n.o.s.

(Triclopyr Triethylamine Salt, Clopyralid Triethylamine Salt)

Class Ш Packing group

Miscellaneous Labels

Packing instruction (cargo

aircraft)

Packing instruction (passen-

964

964

ger aircraft)

IMDG-Code

UN number UN 3082

Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

(Triclopyr Triethylamine Salt, Clopyralid Triethylamine Salt)

Class Ш Packing group Labels EmS Code F-A. S-F yes Marine pollutant

Remarks Stowage category A



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

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number : NA 1993

Proper shipping name : Combustible liquid, n.o.s.

(Triethylamine, Ethanol)

Class : CBL
Packing group : III
Labels : NONE
ERG Code : 128
Marine pollutant : no

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 5L 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.

This product is only classified in containers over 119 gallons or 450 liters. Not regulated if shipped in packages less than or equal to 119 gallons (450 liters). If transporting by vessel or aircraft, unless other means of transportation is impracticable, the product must be shipped as a flammable liquid.

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

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)

Acute toxicity (any route of exposure) Respiratory or skin sensitization

Specific target organ toxicity (single or repeated exposure)

Serious eye damage or eye irritation

SARA 313 : The following components are subject to reporting levels es-

tablished by SARA Title III, Section 313:

Triclopyr Tri- 57213-69-1 >= 30 - < 50 %

ethylamine Salt

triethylamine 121-44-8 >= 1 - < 5 %

US State Regulations

Pennsylvania Right To Know

triethylamine 121-44-8 edetic acid 60-00-4



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ethanol 64-17-5 1,4-dioxane 123-91-1

California Prop. 65

WARNING: This product can expose you to chemicals including ethanol, sulphuric acid, 1,4-dioxane, hexachlorobenzene, acetaldehyde, ethylene oxide, propylene oxide, which is/are known to the State of California to cause cancer, and

ethanol, ethanediol, hexachlorobenzene, ethylene oxide, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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

TSCA : Product contains substance(s) not listed on TSCA inventory.

TSCA list

The following substance(s) is/are subject to a Significant New Use Rule: 4,5,6-Trichloro-2-pyridinecarboxylic acid 496849-77-5 pentachlorobenzene 608-93-5

No substances are subject to TSCA 12(b) export notification requirements.

Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number : 62719-092

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER

Corrosive

Causes irreversible eye damage

Harmful if swallowed or inhaled

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

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)

Dow IHG : Dow Industrial Hygiene Guideline

OSHA PO : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated

values)

OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Lim-

its for Air Contaminants

ACGIH / TWA : 8-hour, time-weighted average



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ACGIH / STEL : Short-term exposure limit

Dow IHG / TWA : Time Weighted Average (TWA):

Dow IHG / STEL : Short term exposure limit

Dow IHG / TWA : Time weighted average

OSHA PO / TWA : 8-hour time weighted average

OSHA Z-1 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; HMIS - Hazardous Materials Identification System; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ -Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 06/13/2022

Product code: XRM-5085

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

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