

# SAFETY DATA SHEET



## Capstone®

Version	Revision Date:	SDS Number:	Date of last issue: 06/29/2022
1.1	01/19/2023	800080004721	Date of first issue: 06/29/2022

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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.

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### SECTION 1. IDENTIFICATION

Product name : Capstone®

#### Manufacturer or supplier's details

##### COMPANY IDENTIFICATION

**Manufacturer/importer** : CORTEVA AGRISCIENCE LLC  
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).  
+1 800-992-5994 or +1 317-337-6009

#### Recommended use of the chemical and restrictions on use

**Recommended use** : End use herbicide product

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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Eye irritation : Category 2A

Specific target organ toxicity : Category 2 (Kidney)  
- repeated exposure

#### GHS label elements

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Hazard pictograms :



Signal Word : Warning

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

Precautionary Statements : **Prevention:**  
P260 Do not breathe mist or vapors.  
P264 Wash skin thoroughly after handling.  
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.  
P314 Get medical advice/ attention if you feel unwell.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

### Other hazards

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS-No.	Concentration (% w/w)
Triclopyr Triethylamine Salt	57213-69-1	16.22
Aminopyralid Triisopropanolamine Salt	566191-89-7	2.22
ethanol	64-17-5	$\geq 0.3 - < 1$
triethylamine	121-44-8	$\geq 0.1 - < 0.3$
Balance	Not Assigned	$> 80$

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.

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- 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.
- Most important symptoms and effects, both acute and delayed : None known.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection).  
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- Notes to physician : No specific antidote.  
Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.  
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.
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### SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water spray  
Alcohol-resistant foam
- Unsuitable extinguishing media : None known.
- Specific hazards during fire fighting : Exposure to combustion products may be a hazard to health.
- Hazardous combustion products : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.
- Combustion products may include and are not limited to:  
Carbon oxides  
Nitrogen oxides (NOx)  
Hydrogen chloride gas

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- Specific extinguishing methods : Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.  
Use water spray to cool unopened containers.
- Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.  
Use personal protective equipment.
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### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
- 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.
- Methods and materials for containment and cleaning up : Clean up remaining materials from spill with suitable absorbent.  
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 over-pressurization 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.
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### SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Do not breathe vapors/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.
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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.  
 Keep in properly labeled containers.  
 Store in accordance with the particular national regulations.
- Materials to avoid : Strong oxidizing agents
- Packaging material : Unsuitable material: None known.

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**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/m <sup>3</sup>	Dow IHG
ethanol	64-17-5	STEL	1,000 ppm	ACGIH
		TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	OSHA Z-1
		TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	OSHA P0
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/m <sup>3</sup>	OSHA Z-1
		TWA	10 ppm 40 mg/m <sup>3</sup>	OSHA P0
		STEL	15 ppm 60 mg/m <sup>3</sup>	OSHA P0

- 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**

- 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.

Hand protection

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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 instructions/specifications provided by the glove supplier.

Eye protection : Use chemical goggles.

Skin and body protection : Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

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### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid.

Color : Red to brown

Odor : Mild

Odor Threshold : No data available

pH : 7.3 (74.1 °F / 23.4 °C)

Melting point/range : Not applicable

Freezing point : No data available

Boiling point/boiling range : No data available

Flash point : > 212 °F / > 100 °C  
Method: 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 : No data available

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flammability limit

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : No data available

Density : 1.0528 g/cm<sup>3</sup>  
Method: Digital density meter

Solubility(ies)  
Water solubility : Soluble

Autoignition temperature : Method: 92/69/EEC A15  
none below 400 degC

Viscosity  
Viscosity, dynamic : < 3 mPa.s

Explosive properties : No  
GLP: yes

Oxidizing properties : No

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### SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

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

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

Conditions to avoid : None known.

Incompatible materials : None.

Hazardous decomposition products : Decomposition products depend upon temperature, air supply  
and the presence of other materials.  
Decomposition products can include and are not limited to:  
Carbon oxides  
Nitrogen oxides (NO<sub>x</sub>)  
Hydrogen chloride gas

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

#### Product:

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- Acute oral toxicity : LD50 (Rat, female): 3,752 mg/kg  
Method: OECD Test Guideline 425
- Acute inhalation toxicity : LC50 (Rat, male and female): > 5.34 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Symptoms: No deaths occurred at this concentration.  
Assessment: The substance or mixture has no acute inhalation toxicity
- Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg  
Method: OECD Test Guideline 402

**Components:****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):

**ethanol:**

- Acute oral toxicity : LD50 (Rat): > 7,000 mg/kg  
LDLo (human): 1,400 mg/kg
- Acute inhalation toxicity : LC50 (Rat): 124.7 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor



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Acute dermal toxicity : LD50 (Rabbit): > 15,800 mg/kg

### **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

### **Skin corrosion/irritation**

#### **Product:**

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

#### **Components:**

##### **Aminopyralid Triisopropanolamine Salt:**

Result : No skin irritation

##### **ethanol:**

Species : Rabbit  
Result : No skin irritation

##### **triethylamine:**

Species : Rabbit  
Result : Causes severe burns.

### **Serious eye damage/eye irritation**

#### **Product:**

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

#### **Components:**

##### **Triclopyr Triethylamine Salt:**

Result : Eye irritation

##### **Aminopyralid Triisopropanolamine Salt:**

Result : No eye irritation

##### **ethanol:**

Species : Rabbit

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Result : Eye irritation

**triethylamine:**

Species : Rabbit  
Result : Corrosive

**Respiratory or skin sensitization****Product:**

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

**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 sensitization.  
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.

**ethanol:**

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

**triethylamine:**

Species : Mouse  
Result : Does not cause skin sensitization.

**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

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toxicity studies were negative.

### ethanol:

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

### triethylamine:

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

## 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.

### ethanol:

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects., Ethanol when not consumed in an alcoholic beverage is not classifiable as a human carcinogen., Epidemiology studies provide evidence that drinking of alcoholic beverages (containing ethanol) is associated with cancer, and IARC has classified alcoholic beverages as carcinogenic to humans.

### triethylamine:

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

**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.

**NTP**      No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

## 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.

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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.

### **ethanol:**

Reproductive toxicity - Assessment : Animal testing did not show any effects on fertility.  
Has caused birth defects in lab animals at high doses.

### **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.

### **ethanol:**

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

### **triethylamine:**

Routes of exposure : Inhalation  
Target Organs : Respiratory Tract  
Assessment : May cause respiratory irritation.

### **STOT-repeated exposure**

#### **Product:**

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

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### 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.

#### **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.

#### **ethanol:**

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.

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### SECTION 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

##### 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 : 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 (Eisenia fetida (earthworms)): > 0.3508 mg/kg  
Exposure time: 14 d
- Toxicity to terrestrial organisms : Remarks: Material is slightly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg).
- oral LD50 (Colinus virginianus (Bobwhite quail)): 1839 mg/kg bodyweight.
- oral LD50 (Apis mellifera (bees)): 133.0 micrograms/bee  
Exposure time: 48 h
- contact LD50 (Apis mellifera (bees)): > 191.6 micrograms/bee  
Exposure time: 48 h

##### 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  
Exposure time: 96 h

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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 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 (*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.

### Aminopyralid Triisopropanolamine Salt:

Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): 360 mg/l  
Exposure time: 96 h  
Remarks: For similar material(s):

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- 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.

### ethanol:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 11,200 - 13,000 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Method: Method Not Specified.
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 5,414 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202 or Equivalent
- Toxicity to algae/aquatic plants : EbC50 (Skeletonema costatum (marine diatom)): 10,943 - 11,619 mg/l  
End point: Biomass  
Exposure time: 5 d  
Method: OECD Test Guideline 201 or Equivalent
- Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l

### 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 : LC50 (water flea Ceriodaphnia dubia): 17 mg/l



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aquatic invertebrates		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 toxicity)	:	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 (Chronic 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

**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 biodegradable under environmental conditions.
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**Aminopyralid Triisopropanolamine Salt:**

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

**ethanol:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: > 70 %  
Exposure time: 5 d  
Method: OECD Test Guideline 301D or Equivalent  
Remarks: 10-day Window: Pass

ThOD : 2.08 kg/kg

Photodegradation : Test Type: Half-life (indirect photolysis)  
Sensitizer: OH radicals  
Rate constant: 3.58E-12 cm<sup>3</sup>/s  
Method: Estimated.

**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 cm<sup>3</sup>/s  
Method: Estimated.

**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).

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**ethanol:**

Partition coefficient: n-octanol/water : log Pow: -0.31  
Method: Measured  
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**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-octanol/water : log Pow: 1.45  
Method: Measured  
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 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).

**ethanol:**

Distribution among environmental compartments : Koc: 1.0  
Method: Estimated.  
Remarks: 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).

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**Balance:**

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

**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.

**Aminopyralid Triisopropanolamine 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.

**ethanol:**

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (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, bioaccumulating 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.

**Balance:**

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

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

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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 regulations.

If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### UNRTDG

UN number : UN 3082  
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
 (Triclopyr Triethylamine Salt)  
 Class : 9  
 Packing group : III  
 Labels : 9

#### IATA-DGR

UN/ID No. : UN 3082  
 Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.  
 (Triclopyr Triethylamine Salt)  
 Class : 9  
 Packing group : III  
 Labels : Miscellaneous  
 Packing instruction (cargo aircraft) : 964  
 Packing instruction (passenger aircraft) : 964

#### IMDG-Code

UN number : UN 3082  
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
 (Triclopyr Triethylamine Salt)  
 Class : 9  
 Packing group : III  
 Labels : 9  
 EmS Code : F-A, S-F  
 Marine pollutant : yes  
 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

Not regulated as a dangerous good

### 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.

### 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** : Specific target organ toxicity (single or repeated exposure)  
 Serious eye damage or eye irritation

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

Triclopyr Tri-ethylamine Salt	57213-69-1	>= 10 - < 20 %
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### California Prop. 65

WARNING: This product can expose you to chemicals including ethanol, ethylene oxide, propylene oxide, which is/are known to the State of California to cause cancer, and ethanol, 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](http://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

No substances are subject to a Significant New Use Rule.

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

### Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number : 62719-572

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

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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:

## CAUTION

Harmful if swallowed  
Causes moderate eye irritation

## 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 P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
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 P0 / TWA	:	8-hour time weighted average
OSHA P0 / STEL	:	Short-term exposure limit
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 Develop-

# SAFETY DATA SHEET



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ment; 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 : 01/19/2023

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.

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