

# SAFETY DATA SHEET



## Grasp® Xtra

Version 1.0      Revision Date: 05/23/2022      SDS Number: 800080002820      Date of last issue: -  
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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 : Grasp® Xtra

#### 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).  
800-992-5994 or 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

Skin sensitization : Category 1

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

#### GHS label elements

Hazard pictograms :



Signal Word : Warning

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Hazard Statements : H317 May cause an allergic skin reaction.  
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.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P280 Wear protective gloves/ eye protection/ face protection.

**Response:**  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
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.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
P363 Wash contaminated clothing before reuse.

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

### Other hazards

None known.

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS-No.	Concentration (% w/w)
Triclopyr Triethylamine Salt	57213-69-1	23.06
Penoxsulam	219714-96-2	2.77
Propylene glycol	57-55-6	>= 3 - < 10
ethanol	64-17-5	>= 1 - < 3
Cellulose	9004-34-6	>= 1 - < 3
triethylamine	121-44-8	>= 0.3 - < 1
Balance	Not Assigned	> 50

Actual concentration is withheld as a trade secret

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## 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

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- In case of skin contact : mask etc). Call a poison control center or doctor for treatment advice.  
: 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.  
Suitable emergency safety shower facility should be available in work area.
- 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.  
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.
- Combustion products may include and are not limited to:  
Carbon oxides  
Nitrogen oxides (NOx)  
Hydrogen chloride gas

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- Phosgene  
Toxic gases are released during decomposition.
- Specific extinguishing methods : Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for 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 emergency 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 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).  
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
See Section 13, Disposal Considerations, for additional information.

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### SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : 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.  
Do not breathe vapors/dust.  
Do not smoke.  
Handle in accordance with good industrial hygiene and safety practice.  
Avoid exposure - obtain special instructions before use.  
Smoking, eating and drinking should be prohibited in the application area.  
Do not get on skin or clothing.  
Avoid inhalation of vapor or mist.  
Do not swallow.  
Do not get in eyes.  
Avoid contact with skin and eyes.  
Take care to prevent spills, waste and minimize release to the environment.  
Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
- Conditions for safe storage : Store in a closed container.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Keep in properly labeled containers.  
Store in accordance with the particular national regulations.
- Materials to avoid : Strong oxidizing agents
- 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/m <sup>3</sup>	Dow IHG
Propylene glycol	57-55-6	TWA	10 mg/m <sup>3</sup>	US WEEL
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
Cellulose	9004-34-6	TWA	10 mg/m <sup>3</sup>	ACGIH
		TWA (total dust)	15 mg/m <sup>3</sup>	OSHA Z-1
		TWA (respirable fraction)	5 mg/m <sup>3</sup>	OSHA Z-1
		TWA (Total dust)	15 mg/m <sup>3</sup>	OSHA P0

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		TWA (respirable dust fraction)	5 mg/m3	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/m3	OSHA Z-1
		TWA	10 ppm 40 mg/m3	OSHA P0
		STEL	15 ppm 60 mg/m3	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.  
 Local exhaust ventilation may be necessary for some operations.

**Personal protective equipment**

Respiratory protection : Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, 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

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

Eye protection : Use chemical goggles.

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

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	:	Liquid.
Color	:	White to purple
Odor	:	Mild
Odor Threshold	:	No data available
pH	:	6.68 (75.0 °F / 23.9 °C) Method: pH Electrode 1% Aqueous solution
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, 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	:	No data available
Relative vapor density	:	No data available
Relative density	:	No data available
Density	:	1.0926 g/cm <sup>3</sup> (68 °F / 20 °C) Method: Digital density meter
Solubility(ies) Water solubility	:	forms a suspension
Autoignition temperature	:	No data available
Viscosity Viscosity, dynamic	:	No data available
Explosive properties	:	No
Oxidizing properties	:	

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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 (NOx) Hydrogen chloride gas Toxic gases are released during decomposition. Decomposition products can include trace amounts of: Phosgene

**SECTION 11. TOXICOLOGICAL INFORMATION****Acute toxicity****Product:**

Acute oral toxicity	:	LD50 (Rat, female): > 3,000 - < 5,000 mg/kg Method: OECD Test Guideline 425
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 4.22 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 Symptoms: No deaths occurred at this concentration.

**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.



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

**Penoxsulam:**

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

LD50 (Mouse, female): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 3.50 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Symptoms: No deaths occurred at this concentration.  
GLP: yes  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: Maximum attainable concentration.

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

**Propylene glycol:**

Acute oral toxicity : LD50 (Rat): > 20,000 mg/kg

Acute inhalation toxicity : LC50 (Rabbit): 317.042 mg/l  
Exposure time: 2 h  
Test atmosphere: dust/mist  
Symptoms: No deaths occurred at this concentration.  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: Mist may cause irritation of upper respiratory tract (nose and throat).

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

**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

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

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**Cellulose:**

Acute oral toxicity : LD50 (Rat): > 3,160 mg/kg  
Assessment: The substance or mixture has no acute oral 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

**Skin corrosion/irritation****Product:**

Method : OECD Test Guideline 404  
Result : No skin irritation

**Components:****Propylene glycol:**

Species : Rabbit  
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

**Propylene glycol:**

Species : Rabbit  
Result : No eye irritation

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**ethanol:**

Species : Rabbit  
Result : Eye irritation

**triethylamine:**

Species : Rabbit  
Result : Corrosive

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

Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : May cause sensitization by skin contact.

**Components:****Triclopyr Triethylamine Salt:**

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

Remarks : For respiratory sensitization:  
No relevant data found.

**Penoxsulam:**

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

**Propylene glycol:**

Species : human  
Assessment : Does not cause skin sensitization.

**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.

**Penoxsulam:**

Germ cell mutagenicity - Assessment : In vitro genetic toxicity studies were negative., The following information is based on limited data and/or screening studies.,

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Animal genetic toxicity studies were negative.

**Propylene glycol:**

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

**ethanol:**

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

**Cellulose:**

Germ cell mutagenicity - Assessment : The data presented are for the following material:, Methyl cellulose., 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.

**Carcinogenicity****Components:****Triclopyr Triethylamine Salt:**

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

**Penoxsulam:**

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

**Propylene glycol:**

Carcinogenicity - Assessment : 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.

**Cellulose:**

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

**triethylamine:**

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

**IARC**

Group 1: Carcinogenic to humans  
ethanol

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**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. Has been toxic to the fetus in laboratory animals at doses toxic to the mother., Did not cause birth defects in laboratory animals.

**Penoxsulam:**

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.

**Propylene glycol:**

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction., In animal studies, did not interfere with fertility. Did not cause birth defects or any other fetal effects in laboratory animals.

**ethanol:**

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

**Cellulose:**

Reproductive toxicity - Assessment : In animal studies, cellulose has been shown to interfere with fertility and reproduction as a result of nutritional deficiencies associated with extremely high dietary concentrations of cellulose. Did not cause birth defects or any other fetal effects in laboratory animals.

**STOT-single exposure****Product:**

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

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**Components:****Triclopyr Triethylamine Salt:**

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

**Propylene glycol:**

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.

**Cellulose:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

**triethylamine:**

Routes of exposure : 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.

**Penoxsulam:**

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

**Propylene glycol:**

Remarks : In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

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**Cellulose:**

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

**triethylamine:**

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

**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.

**Penoxsulam:**

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

**Propylene glycol:**

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

**ethanol:**

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

**Cellulose:**

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****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).

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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

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.



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**Penoxsulam:**

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.126 mg/l  
End point: Growth rate inhibition  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201
- EbC50 (Lemna minor (duckweed)): 0.00329 mg/l  
End point: Biomass  
Exposure time: 14 d  
Method: OECD 221.
- M-Factor (Acute aquatic toxicity) : 100
- M-Factor (Chronic aquatic toxicity) : 100
- Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l  
Exposure time: 3 h
- Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg  
Exposure time: 14 d  
GLP: yes
- NOEC (Eisenia fetida (earthworms)): 1,000 mg/kg  
Exposure time: 56 d
- Toxicity to terrestrial organisms : oral LD50 (Anas platyrhynchos (Mallard duck)): > 2000 mg/kg bodyweight.  
End point: mortality
- dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5063 mg/kg diet.  
Exposure time: 8 d  
End point: mortality  
GLP: yes
- contact LD50 (Apis mellifera (bees)): > 100 µg/bee  
Exposure time: 48 h  
End point: mortality  
GLP: yes
- oral LD50 (Apis mellifera (bees)): > 100 µg/bee  
Exposure time: 48 h  
End point: mortality

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GLP: yes

**Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life.

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

**Propylene glycol:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 40,613 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : LC50 (Ceriodaphnia dubia (water flea)): 18,340 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 19,000 mg/l  
End point: Growth rate inhibition  
Exposure time: 96 h  
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Ceriodaphnia dubia (water flea)): 13,020 mg/l  
End point: number of offspring  
Exposure time: 7 d  
Test Type: semi-static test

Toxicity to microorganisms : NOEC (Pseudomonas putida): > 20,000 mg/l  
Exposure time: 18 h

**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

**Cellulose:**

Toxicity to fish : LC50 (Fish): > 100 mg/l  
Exposure time: 96 h

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- Toxicity to algae/aquatic plants : EC50 (Algae): > 100 mg/l  
End point: Growth rate inhibition  
Exposure time: 96 h
- Toxicity to microorganisms : LC50 (Bacteria): > 100 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 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 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

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**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.

**Penoxsulam:**

Biodegradability : Result: Not biodegradable  
Remarks: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

Biodegradation: 14.7 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B or Equivalent  
Remarks: 10-day Window: Fail

Photodegradation : Sensitizer: OH radicals  
Rate constant: 6.03E-11 cm<sup>3</sup>/s  
Method: Estimated.

**Propylene glycol:**

Biodegradability : aerobic  
Result: Readily biodegradable.  
Biodegradation: 81 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F or Equivalent  
Remarks: 10-day Window: Pass

Biodegradation: 96 %  
Exposure time: 64 d  
Method: OECD Test Guideline 306 or Equivalent  
Remarks: 10-day Window: Not applicable

Biochemical Oxygen Demand (BOD) : 69.000 %  
Incubation time: 5 d

70.000 %  
Incubation time: 10 d

86.000 %  
Incubation time: 20 d

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Chemical Oxygen Demand (COD) : 1.53 kg/kg  
ThOD : 1.68 kg/kg

Photodegradation : Rate constant: 1.28E-11 cm<sup>3</sup>/s  
Method: Estimated.

**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.

**Cellulose:**

Biodegradability : Remarks: Biodegradation rate may increase in soil and/or water with acclimation.

ThOD : 1.18 kg/kg

**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).

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**Penoxsulam:**

Partition coefficient: n-octanol/water :  
log Pow: -0.602  
Method: Measured  
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Propylene glycol:**

Bioaccumulation : Bioconcentration factor (BCF): 0.09  
Method: Estimated.

Partition coefficient: n-octanol/water : log Pow: -1.07  
Method: Measured  
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**ethanol:**

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

**Cellulose:**

Partition coefficient: n-octanol/water : Remarks: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

**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 environ- : Remarks: For similar active ingredient(s).



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**Penoxsulam:**

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.

**Propylene glycol:**

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.

**Cellulose:**

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.

**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, Penoxsulam)  
 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, Penoxsulam)  
 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, Penoxsulam)  
 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** : 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 established by SARA Title III, Section 313:

Triclopyr Tri-ethylamine Salt	57213-69-1	>= 20 - < 30 %
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**US State Regulations****Pennsylvania Right To Know**

Propylene glycol	57-55-6
ethanol	64-17-5
Cellulose	9004-34-6

**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.

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**Federal Insecticide, Fungicide and Rodenticide Act**

EPA Registration Number : 62719-610

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:

**WARNING**

Causes substantial but temporary eye injury

Harmful if swallowed

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 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
US WEEL	:	USA. Workplace Environmental Exposure Levels (WEEL)
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
US WEEL / TWA	:	8-hr TWA

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 - In-

# SAFETY DATA SHEET



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ternational 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 : 05/23/2022

Product code: GF-2345

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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