

**Engarde™ Herbicide**

Version 4.0

Issue Date : 04/05/2019 Ref. 130000139999  
Revision Date : 04/01/2019

This SDS adheres to the standards and regulatory requirements of Canada and may not meet the regulatory requirements in other countries.

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Engarde™ Herbicide  
 Tradename/Synonym : B13167930

SDS Number : 130000139999

Product Use : Herbicide  
 Manufacturer : Production Agriscience Canada Company  
 P.O. Box 730, 7398 Queen's Line  
 Chatham, Ontario  
 N7M 5L1  
 Canada

Product Information : 1-800-667-3852  
 Medical Emergency : 1-800-441-3637 (24 hours)

**SECTION 2. HAZARDS IDENTIFICATION**

Potential Health Effects

Skin

Mesotrione : May cause skin irritation. May cause:, Discomfort, itching, redness, or swelling..

Titanium dioxide : May cause skin irritation. May cause:, Discomfort, itching, redness, or swelling..

Disodium maleate : Causes skin irritation. May cause:, Pain, burning sensation, itching, redness, swelling, or rash..

Modified Aromatic Sulfonate Salt : Causes skin irritation. May cause:, Pain, burning sensation, itching, redness, swelling, or rash..

Eyes

Rimsulfuron : Based on Animal Evidence May cause eye irritation., Discomfort, tearing, Blurred vision.

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Mesotrione : May cause eye irritation. May cause:, Tearing, redness, or discomfort..

Disodium maleate : Causes eye irritation. May cause:, Tearing, pain, redness, swelling, ulceration, visual impairment, or blindness..

Modified Aromatic Sulfonate Salt : Causes eye irritation. May cause:, Pain, tearing, swelling, redness, or temporary visual impairment..

Inhalation  
Disodium maleate : Causes respiratory tract irritation. May cause:, Cough, sneezing, runny nose, sore throat, or shortness of breath..

Ingestion  
Rimsulfuron : Abnormal liver function

Target Organ  
Disodium maleate : Respiratory system

Carcinogenicity  
None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS-No.	Concentration
Rimsulfuron	122931-48-0	4.31 %
Mesotrione	104206-82-8	41.38 %
Titanium dioxide	13463-67-7	0.1 - 0.5 %
Disodium maleate	371-47-1	0.1 - 0.5 %

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Modified Aromatic Sulfonate Salt		5 - 10 %
Other Ingredients		44.81 - 49.11 %

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

**SECTION 4. FIRST AID MEASURES**

- Skin contact : Take off all contaminated clothing immediately. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- Eye contact : Hold eye 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 eye. Call a poison control center or doctor for treatment advice.
- Inhalation : Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.
- Ingestion : If swallowed: Call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Do not give anything by mouth to an unconscious person.
- General advice : Have the product container or label with you when calling a poison control center or doctor, or going for treatment.  
Information presented in Section 4 conforms to the requirements of the Hazardous Products Regulations (HPR) and WHMIS 2015. See Section 15 for applicable information conforming to the requirements of the Pest Management Regulatory Agency (PMRA).

**SECTION 5. FIREFIGHTING MEASURES**

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- Suitable extinguishing media : Water spray, Foam, Dry chemical, Carbon dioxide (CO2)
- Unsuitable extinguishing media : High volume water jet, (contamination risk)
- Firefighting Instructions : Wear full protective clothing and self-contained breathing apparatus. (on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers/tanks with water spray.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- Safeguards (Personnel) : Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Use personal protective equipment.
- Spill Cleanup : Sweep up and shovel into suitable containers for disposal.
- Accidental Release Measures : Prevent material from entering sewers, waterways, or low areas. Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

**SECTION 7. HANDLING AND STORAGE**

- Handling (Personnel) : Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/PPE immediately if material gets inside. Wash thoroughly and put on clean clothing. Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.
- Handling (Physical Aspects) : Keep away from heat and sources of ignition.
- Storage : Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in original container. Store in a cool, dry place. Keep out of the reach of children.

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**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Engineering controls : Information presented in Section 8 conforms to the requirements of the Hazardous Products Regulations (HPR) and WHMIS 2015. See Section 15 for applicable information conforming to the requirements of the Pest Management Regulatory Agency (PMRA). Ensure adequate ventilation.

Personal protective equipment

Skin and body protection : Applicators and other handlers must wear:

- Long sleeved shirt and long pants
- Chemical-resistant gloves, Category A (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber), all greater than or equal to 14 mils
- Shoes plus socks

PPE required for early entry to treated areas that is permitted in accordance with Provincial and Territorial management programs, and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves, Category A (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber), all greater than or equal to 14 mils
- Shoes plus socks

Protective measures : Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Use this product in accordance with its label.

Exposure Guidelines

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Exposure Limit Values

<b>Rimsulfuron</b>			
AEI *	(DuPont)	5 mg/m3	8 & 12 hr. TWA Total dust.
AEI *	(DuPont)	2.5 mg/m3	8 & 12 hr. TWA Respirable dust.

<b>Titanium dioxide</b>			
TLV	(ACGIH)	10 mg/m3	8-hour, time-weighted average Titanium dioxide  Lower Respiratory Tract irritation Not classifiable as a human carcinogen
AEI *	(DuPont)	10 mg/m3	8 & 12 hr. TWA Total dust.
AEI *	(DuPont)	5 mg/m3	8 & 12 hr. TWA Respirable dust.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Form : solid, granules  
pH : 3.4 - 4.4

**SECTION 10. STABILITY AND REACTIVITY**

Stability : Stable at normal temperatures and storage conditions.  
Conditions to avoid : None reasonably foreseeable.

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Incompatibility : No materials to be especially mentioned.  
Hazardous reactions : Polymerization will not occur.

**SECTION 11. TOXICOLOGICAL INFORMATION**

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Inhalation 4 h Acute toxicity estimate : > 2.58 mg/l , Rat  
Dermal LD50 : > 5,000 mg/kg , Rat  
Oral Acute toxicity estimate : > 5,000 mg/kg , Rat  
Skin irritation : No skin irritation, Rabbit  
Minimal effects that do not meet the threshold for classification.  
Eye irritation : Mild eye irritation, Rabbit  
Sensitisation : Did not cause sensitisation on laboratory animals., Guinea pig  
Mouse  
Further information : Information given is based on data on the components.  
Further information : Information presented in section 11 conforms to the requirements of the Hazardous Products Regulations (HPR) and WHMIS 2015. See Section 15 for applicable information conforming to the requirements of the Pest Management Regulatory Agency (PMRA).

Rimsulfuron

Repeated dose toxicity : The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.  
Oral multiple species  
altered blood chemistry, Liver effects, Organ weight changes  
Carcinogenicity : Did not show carcinogenic effects in animal experiments.  
Reproductive toxicity : Animal testing did not show any effects on fertility.  
Teratogenicity : Evidence suggests the substance is not a developmental toxin in

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animals.

**Mesotrione**

- Carcinogenicity : Not classifiable as a human carcinogen.
- Reproductive toxicity : No toxicity to reproduction
- Teratogenicity : Animal testing showed no developmental toxicity.

**Titanium dioxide**

- Repeated dose toxicity : Oral  
Rat  
  
No toxicologically significant effects were found.
- Carcinogenicity : Not classifiable as a human carcinogen.  
Overall weight of evidence indicates that the substance is not carcinogenic.
- Reproductive toxicity : Animal testing showed no reproductive toxicity.
- Teratogenicity : Animal testing showed no developmental toxicity.

**Disodium maleate**

- Repeated dose toxicity : Ingestion  
Rat  
90 d  
No toxicologically significant effects were found., Information given is based on data obtained from similar substances.
- Carcinogenicity : Weight of evidence does not support classification as a carcinogen  
Information given is based on data obtained from similar substances.
- Reproductive toxicity : Weight of evidence does not support classification for reproductive toxicity  
No effects on or via lactation  
Information given is based on data obtained from similar substances.
- Teratogenicity : Evidence suggests the substance is not a developmental toxin in animals.  
Information given is based on data obtained from similar substances.



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**SECTION 12. ECOLOGICAL INFORMATION**

Aquatic Toxicity

Rimsulfuron

- 96 h LC50 : Oncorhynchus mykiss (rainbow trout) > 390 mg/l
- 96 h LC50 : Lepomis macrochirus (Bluegill sunfish) > 390 mg/l
- 120 h EbC50 : Selenastrum capricornutum (green algae) 1.6 mg/l
- 48 h EC50 : Daphnia magna (Water flea) > 360 mg/l
- 90 d : NOEC Oncorhynchus mykiss (rainbow trout) 110 mg/l
- 21 d : NOEC Daphnia magna (Water flea) 0.82 mg/l

Mesotrione

- 96 h LC50 : Oncorhynchus mykiss (rainbow trout) > 120 mg/l
- 72 h EC50 : Pseudokirchneriella subcapitata (green algae) 4.5 mg/l
- 48 h EC50 : Daphnia magna (Water flea) 900 mg/l

Titanium dioxide

- 96 h LC50 : Pimephales promelas (fathead minnow) > 1,000 mg/l
- 72 h ErC50 : Pseudokirchneriella subcapitata (green algae) > 100 mg/l see user defined free text
- 72 h NOEC : Algae 5,600 mg/l see user defined free text
- 48 h EC50 : Daphnia magna (Water flea) > 100 mg/l OECD Test Guideline 202

Disodium maleate

- 96 h LC50 : Lepomis macrochirus (Bluegill sunfish) 75 mg/l  
Information given is based on data obtained from similar substances.
- 72 h EC50 : Pseudokirchneriella subcapitata (green algae) 74.4 mg/l OECD Test Guideline 201  
Information given is based on data obtained from similar substances.
- 72 h NOEC : Pseudokirchneriella subcapitata (green algae) 150 mg/l

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Information given is based on data obtained from similar substances.

48 h EC50 : Daphnia magna (Water flea) 42.8 mg/l OECD Test Guideline 202  
Information given is based on data obtained from similar substances.

21 d : NOEC Daphnia magna (Water flea) 10 mg/l  
Information given is based on data obtained from similar substances.

Environmental Fate

Rimsulfuron

Biodegradability : According to the results of tests of biodegradability this product is not readily biodegradable.

Bioaccumulation : Does not bioaccumulate.

Disodium maleate

Biodegradability : Biodegradable OECD Test Guideline 301  
Information given is based on data obtained from similar substances.

Bioaccumulation : Bioaccumulation is unlikely.  
Information given is based on data obtained from similar substances.

Additional ecological information : Environmental Hazards: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate. Do not apply where/when conditions favour runoff. See product label for additional application instructions relating to environmental precautions.

**SECTION 13. DISPOSAL CONSIDERATIONS**

Waste Disposal : Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container disposal: : Container Refilling and Disposal:  
Refer to the product label for instructions.  
Do not transport if this container is damaged or leaking.

**SECTION 14. TRANSPORT INFORMATION**

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IATA_C	UN number	: 3077
	Proper shipping name	: Environmentally hazardous substance, solid, n.o.s. (Rimsulfuron, Mesotrione)
	Class	: 9
	Packing group	: III
	Labelling No.	: 9
IMDG	UN number	: 3077
	Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Rimsulfuron, Mesotrione)
	Class	: 9
	Packing group	: III
	Labelling No.	: 9
	Marine pollutant	: yes (Rimsulfuron, Mesotrione)

Not regulated as a hazardous material by TDG.

**SECTION 15. REGULATORY INFORMATION**

Other regulations : This Safety Data Sheet is for a pesticide product registered by the Pest Management Regulatory Agency (PMRA), and is therefore also subject to certain requirements under Canadian pesticide laws, including the Pest Control Products Act (PCPA). These requirements differ from the classification criteria and hazard information required by the Hazardous Product Regulations (HPR) and WHMIS 2015 for safety data sheets, and for workplace labels of non-pesticide chemicals. The following information is determined by PMRA.

The approved pest control product label (the label), under the Pest Control Products Act, needs to be followed at all times and in cases where there are any discrepancies between the approved label and an SDS for that product it is the label information that prevails.

Avoid breathing spray mist. Avoid contact with skin, eyes and clothing.

PCP Registration # : 31595

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Remarks : No substances are subject to a Significant New Activity Notification.

**SECTION 16. OTHER INFORMATION**

MSDS preparation date : 04/01/2019

(TM) Trademark of E.I. du Pont de Nemours and Company.

Contact person : Production Agriscience Canada Company, Chatham, Ontario, N7M 5L1

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.