SAFETY DATA SHEET
DOW AGROSCIENCES CANADA INC.

Product name: REXADE™ B Herbicide

DOW AGROSCIENCES CANADA INC. 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.

1. IDENTIFICATION

Product name: REXADE™ B Herbicide

Recommended use of the chemical and restrictions on use
Identified uses: End use herbicide product

COMPANY IDENTIFICATION
DOW AGROSCIENCES CANADA INC.
#2400, 215 - 2ND STREET S.W.
CALGARY AB T2P 1M4
CANADA

Customer Information Number: 800-667-3852 solutions@corteva.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 1-888-226-8832
Local Emergency Contact: 1-888-226-8832

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid.</td>
</tr>
<tr>
<td>Color</td>
<td>Yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic</td>
</tr>
</tbody>
</table>

Hazard Summary

WARNING!!
May cause allergic skin reaction.
May cause eye irritation.
May be harmful if swallowed.
Isolate area.
Toxic fumes may be released in fire situations.
Potential Health Effects

**Eyes:** May cause slight eye irritation. May cause slight corneal injury.

**Skin:** Brief contact may cause slight skin irritation with local redness. May cause drying and flaking of the skin. Has demonstrated the potential for contact allergy in mice. Prolonged skin contact is unlikely to result in absorption of harmful amounts.

**Inhalation:** No adverse effects are anticipated from single exposure to mist. Based on the available data, respiratory irritation was not observed.

**Ingestion:** Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Swallowing may result in gastrointestinal irritation.

**Chronic Exposure:** For the active ingredient(s):
Has been toxic to the fetus in laboratory animal tests. There is no evidence that these findings are relevant to humans. For similar active ingredient(s).
2,4-Dichlorophenoxyacetic acid.
In laboratory animals, excessive doses toxic to the parent animals caused decreased weight and survival of offspring.
For the minor component(s):
In animals, effects have been reported on the following organs:
Blood.
Kidney.
Liver.
Spleen.
Has caused birth defects in laboratory animals only at doses toxic to the mother.
Has been toxic to the fetus in laboratory animals at doses toxic to the mother. These concentrations exceed relevant human dose levels.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

<table>
<thead>
<tr>
<th>Component</th>
<th>CASRN</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D 2-ethylhexyl ester</td>
<td>1928-43-4</td>
<td>87.2%</td>
</tr>
<tr>
<td>Calcium dodecylbenzene sulfonate</td>
<td>26264-06-2</td>
<td>3.0%</td>
</tr>
<tr>
<td>Ethylhexanol</td>
<td>104-76-7</td>
<td>1.0%</td>
</tr>
<tr>
<td>Balance</td>
<td>Not available</td>
<td>8.8%</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

Description of first aid measures

General advice:
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.

Inhalation: 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.

Skin contact: Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Suitable emergency safety shower facility should be available in work area.

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.

Ingestion: 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:
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

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. Skin contact may aggravate preexisting dermatitis.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function. Water fog, applied gently may be used as a blanket for fire extinguishment.

Unsuitable extinguishing media: Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture

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: Hydrogen chloride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is produced when product burns.
Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the “Accidental Release Measures” and the “Ecological Information” sections of this (M)SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact the company for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep out of reach of children. Do not swallow. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Use with adequate ventilation. Wash thoroughly after handling.

Conditions for safe storage: Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Consult local authorities for recommended exposure limits.

<table>
<thead>
<tr>
<th>Component</th>
<th>Regulation</th>
<th>Type of listing</th>
<th>Value/Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D 2-ethylhexyl ester</td>
<td>Dow IHG</td>
<td>TWA</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>CA ON OEL</td>
<td></td>
<td></td>
<td>10 mg/m³, As 2,4-D</td>
</tr>
<tr>
<td>CA BC OEL</td>
<td></td>
<td>STEL</td>
<td>20 mg/m³</td>
</tr>
<tr>
<td>Ethylhexanol</td>
<td>Dow IHG</td>
<td>TWA</td>
<td>2 ppm</td>
</tr>
<tr>
<td></td>
<td>Dow IHG</td>
<td>SKIN</td>
<td></td>
</tr>
</tbody>
</table>

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Exposure controls
Engineering controls: 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.

Individual protection measures

Eye/face protection: Use chemical goggles.

Hand protection: 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.

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

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

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.
### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No test data available</td>
</tr>
<tr>
<td>pH</td>
<td>3.91 1% pH Electrode (1% aqueous suspension)</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>Not applicable</td>
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<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point (760 mmHg)</td>
<td>No test data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>closed cup 136 °C Pensky-Martens Closed Cup ASTM D 93</td>
</tr>
<tr>
<td>Evaporation Rate (Butyl Acetate = 1)</td>
<td>No test data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>No test data available</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>No test data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No test data available</td>
</tr>
<tr>
<td>Relative Vapor Density (air = 1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative Density (water = 1)</td>
<td>1.1402 at 20 °C / 4 °C Digital Density Meter (Oscillating Coil)</td>
</tr>
<tr>
<td>Water solubility</td>
<td>emulsifiable</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>273 °C Literature Ramped Temperature</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No test data available</td>
</tr>
<tr>
<td>Dynamic Viscosity</td>
<td>28.8 mPa.s at 20 °C</td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>30.2 cSt at 20 °C</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Liquid Density</td>
<td>1.14 g/cm3 at 20 °C Digital density meter</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**NOTE:** The physical data presented above are typical values and should not be construed as a specification.

### 10. STABILITY AND REACTIVITY

**Reactivity:** No dangerous reaction known under conditions of normal use.

**Chemical stability:** Stable under recommended storage conditions. See Storage, Section 7.

**Possibility of hazardous reactions:** Polymerization will not occur.

**Conditions to avoid:** Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid.

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 monoxide. Carbon dioxide. Hydrogen chloride.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

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

As product:
LD50, Rat, female, 1,750 mg/kg

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

As product:
LD50, Rat, > 5,000 mg/kg No deaths occurred at this concentration.

Acute inhalation toxicity
No adverse effects are anticipated from single exposure to mist. Based on the available data, respiratory irritation was not observed.

As product:
LC50, Rat, male and female, 4 Hour, dust/mist, > 5.16 mg/l No deaths occurred at this concentration.

Skin corrosion/irritation
Brief contact may cause slight skin irritation with local redness. May cause drying and flaking of the skin.

Serious eye damage/eye irritation
May cause slight eye irritation.
May cause slight corneal injury.

Sensitization
As product:
Has demonstrated the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.
Specific Target Organ Systemic Toxicity (Repeated Exposure)
For the active ingredient(s):
Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

For the minor component(s):
In animals, effects have been reported on the following organs:
- Blood.
- Kidney.
- Liver.
- Spleen.

Carcinogenicity
For the active ingredient(s): Did not cause cancer in laboratory animals.

For the minor component(s): In laboratory animals, evidence of carcinogenic activity was observed. The observed tumors do not appear to be relevant for men.

Teratogenicity
For the active ingredient(s): Has been toxic to the fetus in laboratory animal tests. There is no evidence that these findings are relevant to humans. Did not cause birth defects in laboratory animals.

For the minor component(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Has caused birth defects in laboratory animals only at doses toxic to the mother. These concentrations exceed relevant human dose levels.

Reproductive toxicity
For similar active ingredient(s). 2,4-Dichlorophenoxyacetic acid. In laboratory animals, excessive doses toxic to the parent animals caused decreased weight and survival of offspring.

Mutagenicity
For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

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

12. ECOLOGICAL INFORMATION
Ecotoxicological information appears in this section when such data is available.

Toxicity

2,4-D 2-ethylhexyl ester

Acute toxicity to fish
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, tidewater silverside (Menidia beryllina), flow-through test, 96 Hour, > 1.9 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, > 5 mg/l, OECD Test Guideline 202 or Equivalent
Acute toxicity to algae/aquatic plants
As the ester active substance.
**EbC50**, Skeletonema costatum (marine diatom), static test, 5 d, Biomass, 0.23 mg/l, OECD Test Guideline 201 or Equivalent

Chronic toxicity to aquatic invertebrates
NOEC, *Daphnia magna* (Water flea), flow-through test, 21 d, weight, 0.015 mg/l

Toxicity to Above Ground Organisms
Material is slightly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg).
oral LD50, *Anas platyrhynchos* (Mallard duck), 663mg/kg bodyweight.
dietary LC50, *Anas platyrhynchos* (Mallard duck), 5 d, > 5620mg/kg diet.
oral LD50, *Apis mellifera* (bees), > 100micrograms/bee
contact LD50, *Apis mellifera* (bees), > 100micrograms/bee

**Calcium dodecylbenzene sulfonate**

Acute toxicity to fish
Based on information for a similar material:
Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).
Based on information for a similar material:
LC50, Rainbow trout (*Salmo gairdneri*), 96 Hour, 3.2 - 5.6 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates
Based on information for a similar material:
EC50, *Daphnia magna* (Water flea), Static, 48 Hour, 2.5 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
Based on information for a similar material:
ErC50, *Pseudokirchneriella subcapita*, Static, 72 Hour, 65.4 mg/l, OECD Test Guideline 201
Based on information for a similar material:
NOEC, *Pseudokirchneriella subcapita*, Static, 72 Hour, 7.9 mg/l, OECD Test Guideline 201

**Ethylhexanol**

Acute toxicity to fish
Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, 32 - 37 mg/l
LC50, Fathead minnow (*Pimephales promelas*), 96 Hour, 28.2 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates
LC50, *Daphnia magna* (Water flea), 48 Hour, 35.2 mg/l, OECD Test Guideline 202
EC50, *Daphnia magna* (Water flea), 48 Hour, 39 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
ErC50, *Pseudokirchneriella subcapitata* (green algae), 72 Hour, Growth rate inhibition, 11.5 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
EC50, Bacteria, 16 Hour, 256 - 320 mg/l

**Balance**

Acute toxicity to fish
No relevant data found.
Persistence and degradability

2,4-D 2-ethylhexyl ester

**Biodegradability:** Biodegradation under aerobic laboratory conditions is below detectable limits (BOD20 or BOD28/ThOD < 2.5%). Biodegradation may occur under aerobic conditions (in the presence of oxygen).

- 10-day Window: Fail
- **Biodegradation:** 77%
- **Exposure time:** 29 d
- **Method:** OECD Test Guideline 301B or Equivalent

**Biological oxygen demand (BOD)**

<table>
<thead>
<tr>
<th>Incubation Time</th>
<th>BOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 d</td>
<td>0.84 %</td>
</tr>
<tr>
<td>10 d</td>
<td>0.92 %</td>
</tr>
<tr>
<td>20 d</td>
<td>1.32 %</td>
</tr>
</tbody>
</table>

**Calcium dodecylbenzene sulfonate**

**Biodegradability:** For similar material(s): Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

- 10-day Window: Pass
- **Biodegradation:** 95%
- **Exposure time:** 28 d
- **Method:** OECD Test Guideline 301E or Equivalent

**Ethylhexanol**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

- 10-day Window: Not applicable
- **Biodegradation:** > 95%
- **Exposure time:** 5 d
- **Method:** OECD Test Guideline 302B or Equivalent

**Theoretical Oxygen Demand:** 2.95 mg/mg

**Chemical Oxygen Demand:** 2.70 mg/mg

**Biological oxygen demand (BOD)**

<table>
<thead>
<tr>
<th>Incubation Time</th>
<th>BOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 d</td>
<td>26 - 70 %</td>
</tr>
<tr>
<td>10 d</td>
<td>75 - 81 %</td>
</tr>
<tr>
<td>20 d</td>
<td>86 - 87 %</td>
</tr>
</tbody>
</table>

**Photodegradation**

- **Test Type:** Half-life (indirect photolysis)
- **Sensitization:** OH radicals
- **Atmospheric half-life:** 9.7 Hour
- **Method:** Estimated.
Balance

Biodegradability: No relevant data found.

Bioaccumulative potential

2,4-D 2-ethylhexyl ester

Bioaccumulation: For similar active ingredient(s), 2,4-Dichlorophenoxyacetic acid. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.83 at 25 °C Measured
Bioconcentration factor (BCF): 10

Calcium dodecylbenzene sulfonate

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 4.77 at 25 °C estimated
Bioconcentration factor (BCF): 71 Fish Estimated.

Ethylhexanol

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 3.1 Measured

Balance

Bioaccumulation: No relevant data found.

Mobility in soil

2,4-D 2-ethylhexyl ester
Calculation of meaningful sorption data was not possible due to very rapid degradation in the soil.
For the degradation product:
2,4-Dichlorophenoxyacetic acid.
Expected to be relatively immobile in soil (Koc > 5000).

Calcium dodecylbenzene sulfonate
No relevant data found.

Ethylhexanol
Potential for mobility in soil is low (Koc between 500 and 2000).
Partition coefficient (Koc): 800 Estimated.

Balance
No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: 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.
14. TRANSPORT INFORMATION

**TDG**

| Proper shipping name                  | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(2,4-D Ester) |
| UN number                             | UN 3082 |
| Class                                 | 9 |
| Packing group                         | III |
| Marine pollutant                      | 2,4-D Ester |

**Classification for SEA transport (IMO-IMDG):**

| Proper shipping name                  | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(2,4-D Ester) |
| UN number                             | UN 3082 |
| Class                                 | 9 |
| Packing group                         | III |
| Marine pollutant                      | 2,4-D Ester |
| Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code | Consult IMO regulations before transporting ocean bulk |

**Classification for AIR transport (IATA/ICAO):**

| Proper shipping name                  | Environmentally hazardous substance, liquid, n.o.s.(2,4-D Ester) |
| UN number                             | UN 3082 |
| Class                                 | 9 |
| Packing group                         | III |

**Further information:**

NOT REGULATED PER TDG EXEMPTION 1.45.1 FOR ROAD OR RAIL

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

**Hazardous Products Act Information: WHMIS Classification**

This product is exempt under WHMIS.

**National Fire Code of Canada**

Not applicable

**Canadian Domestic Substances List (DSL)**

This product contains chemical substance(s) exempt from CEPA DSL Inventory requirements. It is regulated as a pesticide subject to Pest Control Products Act (PCPA) requirements.

**Pest Control Products Act (PCPA) Registration Number:** 32294
16. OTHER INFORMATION

Hazard Rating System
NFPA

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Revision
Identification Number: 99074257 / A215 / Issue Date: 01/27/2020 / Version: 3.0
DAS Code: GF-1406
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>CA BC OEL</td>
<td>Canada. British Columbia OEL</td>
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<tr>
<td>CA ON OEL</td>
<td>Canada. Ontario OELs</td>
</tr>
<tr>
<td>Dow IHG</td>
<td>Dow Industrial Hygiene Guideline</td>
</tr>
<tr>
<td>SKIN</td>
<td>Absorbed via skin</td>
</tr>
<tr>
<td>STEL</td>
<td>short-term exposure limit</td>
</tr>
<tr>
<td>TWA</td>
<td>8-hour time weighted average</td>
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<tr>
<td>TWAEV</td>
<td>time-weighted average exposure value</td>
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</tbody>
</table>

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; 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 Obervable 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; 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
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.

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