

# SAFETY DATA SHEET

## DOW AGROSCIENCES CANADA INC.

Product name: REXADE™ A Herbicide

Issue Date: 12/05/2016

DOW AGROSCIENCES CANADA INC. encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

### 1. IDENTIFICATION

Product name: REXADE™ A 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@dow.com

**EMERGENCY TELEPHONE NUMBER**

24-Hour Emergency Contact: 613-996-6666

Local Emergency Contact: 613-996-6666

### 2. HAZARDS IDENTIFICATION

**Emergency Overview**

**Appearance**

Physical state                      Granules

Color                                      Tan

**Odor**                                      Mild

**Hazard Summary**

**CAUTION!!**

May cause eye irritation.  
May be harmful if inhaled.  
Isolate area.  
Keep upwind of spill.  
Toxic fumes may be released in fire situations.  
Spilled material may cause a slipping hazard.  
Highly toxic to fish and/or other aquatic organisms.  
Possible cancer hazard. May cause cancer based on animal data.

### Potential Health Effects

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

**Skin:** Brief contact may cause slight skin irritation with local redness.  
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

**Inhalation:** Prolonged excessive exposure to dust may cause adverse effects.  
Dust may cause irritation to upper respiratory tract (nose and throat).

**Ingestion:** Very low toxicity if swallowed.  
Harmful effects not anticipated from swallowing small amounts.

**Chronic Exposure:** For the active ingredient(s):  
In animals, effects have been reported on the following organs:  
Kidney.  
Liver.  
Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

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This product is a mixture.

| Component                        | CASRN         | Weight percent |
|----------------------------------|---------------|----------------|
| Halauxifen-methyl                | 943831-98-9   | 5.21%          |
| Pyroxsulam                       | 422556-08-9   | 15.0%          |
| Substituted Quinoline Derivative | Trade Secret  | Trade secret   |
| Kaolin                           | 1332-58-7     | 6.4%           |
| Titanium dioxide                 | 13463-67-7    | 0.1%           |
| Balance                          | Not available | Trade secret   |

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### 4. FIRST AID MEASURES

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#### Description of first aid measures

**General advice:** 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. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**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:** No emergency medical treatment necessary.

**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.

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## 5. FIREFIGHTING MEASURES

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**Suitable extinguishing media:** Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam.

**Unsuitable extinguishing media:** No data available

**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: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, do not permit dust to accumulate.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires. Processing this product may generate dusts. Dust explosion hazard may result from forceful application of fire extinguishing agents. 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.

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## 6. ACCIDENTAL RELEASE MEASURES

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**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. Keep upwind of spill. Spilled material may cause a slipping hazard. Ventilate area of leak or spill. 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: Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing dust or mist. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Good housekeeping and controlling of dusts are necessary for safe handling of product. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Conditions for safe storage:** Store in a dry place. Store in original container. Do not store near food, foodstuffs, drugs or potable water supplies.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Control parameters

Exposure limits are listed below, if they exist.

| Component        | Regulation | Type of listing         | Value/Notation                          |
|------------------|------------|-------------------------|-----------------------------------------|
| Pyroxsulam       | Dow IHG    | TWA                     | 5 mg/m <sup>3</sup>                     |
|                  | Dow IHG    | TWA                     | Skin Sensitizer                         |
| Kaolin           | ACGIH      | TWA Respirable fraction | 2 mg/m <sup>3</sup>                     |
|                  | CA AB OEL  | TWA Respirable          | 2 mg/m <sup>3</sup>                     |
|                  | CA BC OEL  | TWA Respirable          | 2 mg/m <sup>3</sup>                     |
|                  | CA QC OEL  | TWAEV respirable dust   | 5 mg/m <sup>3</sup>                     |
|                  | ACGIH      | TWA                     | 10 mg/m <sup>3</sup> , Titanium dioxide |
| Titanium dioxide | Dow IHG    | TWA                     | 2.4 mg/m <sup>3</sup>                   |
|                  | CA AB OEL  | TWA                     | 10 mg/m <sup>3</sup>                    |
|                  | CA BC OEL  | TWA                     | 10 mg/m <sup>3</sup>                    |
|                  | CA QC OEL  | TWAEV total dust        | 10 mg/m <sup>3</sup>                    |

Consult local authorities for recommended exposure limits.

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 engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

**Individual protection measures**

**Eye/face protection:** Use chemical goggles.

**Skin protection**

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyvinyl chloride ("PVC" or "vinyl"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). 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, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance**

|                                               |                                  |
|-----------------------------------------------|----------------------------------|
| <b>Physical state</b>                         | Granules                         |
| <b>Color</b>                                  | Tan                              |
| <b>Odor</b>                                   | Mild                             |
| <b>Odor Threshold</b>                         | No data available                |
| <b>pH</b>                                     | 4.44 <i>pH Electrode</i>         |
| <b>Melting point/range</b>                    | No data available                |
| <b>Freezing point</b>                         | Not applicable                   |
| <b>Boiling point (760 mmHg)</b>               | Not applicable                   |
| <b>Flash point</b>                            | <b>closed cup</b> Not applicable |
| <b>Evaporation Rate (Butyl Acetate = 1)</b>   | Not applicable                   |
| <b>Flammability (solid, gas)</b>              | No                               |
| <b>Lower explosion limit</b>                  | Not applicable                   |
| <b>Upper explosion limit</b>                  | Not applicable                   |
| <b>Vapor Pressure</b>                         | Not applicable                   |
| <b>Relative Vapor Density (air = 1)</b>       | Not applicable                   |
| <b>Relative Density (water = 1)</b>           | No data available                |
| <b>Water solubility</b>                       | No data available                |
| <b>Partition coefficient: n-octanol/water</b> | No data available                |
| <b>Auto-ignition temperature</b>              | Not applicable                   |
| <b>Decomposition temperature</b>              | No data available                |
| <b>Dynamic Viscosity</b>                      | Not applicable                   |
| <b>Kinematic Viscosity</b>                    | No data available                |
| <b>Explosive properties</b>                   | No                               |

|                             |                                                                             |
|-----------------------------|-----------------------------------------------------------------------------|
| <b>Oxidizing properties</b> | No significant increase (>5C) in temperature.                               |
| <b>Bulk density</b>         | 0.5222 g/ml <i>Loose Volumetric</i><br>0.5561 g/ml <i>Tapped Volumetric</i> |
| <b>Molecular weight</b>     | No data available                                                           |

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

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## 10. STABILITY AND REACTIVITY

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

**Chemical stability:** Thermally stable at typical use temperatures.

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

**Conditions to avoid:** Exposure to elevated temperatures can cause product to decompose.

**Incompatible materials:** Avoid contact with: Strong oxidizers.

**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. Nitrogen oxides. Toxic gases.

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## 11. TOXICOLOGICAL INFORMATION

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

### **Acute toxicity**

#### **Acute oral toxicity**

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product:

LD50, Rat, female, > 5,000 mg/kg OECD Test Guideline 423

#### **Acute dermal toxicity**

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

As product:

LD50, Rat, male and female, > 5,000 mg/kg OECD Test Guideline 402

#### **Acute inhalation toxicity**

Prolonged excessive exposure to dust may cause adverse effects. Dust may cause irritation to upper respiratory tract (nose and throat).

As product: The LC50 has not been determined.

### **Skin corrosion/irritation**

Brief contact may cause slight skin irritation with local redness.

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

May cause moderate eye irritation.

May cause slight corneal injury.

**Sensitization**

Did not demonstrate 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):  
In animals, effects have been reported on the following organs:  
Kidney.  
Liver.

**Carcinogenicity**

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

For similar active ingredient(s). Did not cause cancer in laboratory animals. A risk assessment has been conducted for this product and has shown, that under normal handling, the minor components will not pose a hazard.

**Teratogenicity**

For the active ingredient(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

**Reproductive toxicity**

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

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

**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.

**COMPONENTS INFLUENCING TOXICOLOGY:**

**Halauxifen-methyl**

**Acute inhalation toxicity**

No adverse effects are anticipated from inhalation. For respiratory irritation and narcotic effects: No relevant data found.

The LC50 has not been determined.

**Pyroxsulam**

**Acute inhalation toxicity**

LC50, Rat, 4 Hour, dust/mist, > 5.12 mg/l No deaths occurred at this concentration.

**Substituted Quinoline Derivative**

**Acute inhalation toxicity**

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

LC50, Rat, male and female, 4 Hour, dust/mist, > 6.11 mg/l No deaths occurred at this concentration.

#### Kaolin

##### **Acute inhalation toxicity**

As product: The LC50 has not been determined.

#### Titanium dioxide

##### **Acute inhalation toxicity**

LC50, Rat, male, 4 Hour, dust/mist, > 6.82 mg/l No deaths occurred at this concentration.

#### Balance

##### **Acute inhalation toxicity**

The LC50 has not been determined.

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## 12. ECOLOGICAL INFORMATION

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*Ecotoxicological information appears in this section when such data is available.*

### **Toxicity**

#### **Acute toxicity to fish**

LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, 26.5 mg/l, OECD Test Guideline 203

#### **Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), semi-static test, 48 Hour, > 68.1 mg/l, OECD Test Guideline 202

#### **Acute toxicity to algae/aquatic plants**

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 3 mg/l, OECD Test Guideline 201

ErC50, Lemna gibba (gibbous duckweed), 7 d, 0.020 mg/l, OECD 221.

NOEC, Lemna gibba (gibbous duckweed), 7 d, 0.0049 mg/l, OECD 221.

#### **Toxicity to Above Ground Organisms**

oral LD50, Apis mellifera (bees), 48 Hour, > 208.9µg/bee

contact LD50, Apis mellifera (bees), 48 Hour, > 200µg/bee

#### **Toxicity to soil-dwelling organisms**

LC50, Eisenia andrei (red worm), 14 d, > 1,000 mg/kg

### **Persistence and degradability**

#### Halauxifen-methyl

**Biodegradability:** For similar active ingredient(s). Halauxifen. Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

10-day Window: Not applicable

**Biodegradation:** 7.7 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 310 or Equivalent



**Pyroxsulam**

**Biodegradability:** 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.

10-day Window: Fail

**Biodegradation:** 20 - 30 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301B or Equivalent

**Substituted Quinoline Derivative**

**Biodegradability:** No relevant data found.

**Kaolin**

**Biodegradability:** Biodegradation is not applicable.

**Titanium dioxide**

**Biodegradability:** Biodegradation is not applicable.

**Balance**

**Biodegradability:** No relevant data found.

**Bioaccumulative potential****Halauxifen-methyl**

**Bioaccumulation:** Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

**Partition coefficient: n-octanol/water(log Pow):** 3.76

**Bioconcentration factor (BCF):** 233 *Lepomis macrochirus* (Bluegill sunfish) 42 d

**Pyroxsulam**

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

**Partition coefficient: n-octanol/water(log Pow):** -1.01 Measured

**Substituted Quinoline Derivative**

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

**Partition coefficient: n-octanol/water(log Pow):** 2.12 Estimated.

**Titanium dioxide**

**Bioaccumulation:** Partitioning from water to n-octanol is not applicable.

**Balance**

**Bioaccumulation:** No relevant data found.

**Mobility in soil****Halauxifen-methyl**

Expected to be relatively immobile in soil (Koc > 5000).

**Partition coefficient (Koc):** 5684

**Pyroxsulam**

Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient (Koc):** <= 42 Estimated.

**Substituted Quinoline Derivative**

Potential for mobility in soil is medium (Koc between 150 and 500).

**Partition coefficient (Koc):** 206 Estimated.

**Titanium dioxide**

No data available.

**Balance**

No relevant data found.

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**13. DISPOSAL CONSIDERATIONS**

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**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.

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**14. TRANSPORT INFORMATION**

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**TDG**

|                             |                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------|
| <b>Proper shipping name</b> | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(PYROXSULAM, Halauxifen-methyl) |
| <b>UN number</b>            | UN 3077                                                                           |
| <b>Class</b>                | 9                                                                                 |
| <b>Packing group</b>        | III                                                                               |
| <b>Marine pollutant</b>     | PYROXSULAM, Halauxifen-methyl                                                     |

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

|                                                                                             |                                                                                   |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Proper shipping name</b>                                                                 | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(PYROXSULAM, Halauxifen-methyl) |
| <b>UN number</b>                                                                            | UN 3077                                                                           |
| <b>Class</b>                                                                                | 9                                                                                 |
| <b>Packing group</b>                                                                        | III                                                                               |
| <b>Marine pollutant</b>                                                                     | PYROXSULAM, Halauxifen-methyl                                                     |
| <b>Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</b> | Consult IMO regulations before transporting ocean bulk                            |

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

|                             |                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------|
| <b>Proper shipping name</b> | Environmentally hazardous substance, solid, n.o.s.(PYROXSULAM, Halauxifen-methyl) |
| <b>UN number</b>            | UN 3077                                                                           |
| <b>Class</b>                | 9                                                                                 |
| <b>Packing group</b>        | 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.

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## 15. REGULATORY INFORMATION

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**Hazardous Products Act Information: CPR Compliance**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**Hazardous Products Act Information: WHMIS Classification**

This product is exempt under WHMIS.

**National Fire Code of Canada**

Not applicable

**Canadian Domestic Substances List (DSL) (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: 32520**

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## 16. OTHER INFORMATION

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**Hazard Rating System****NFPA**

| Health | Fire | Reactivity |
|--------|------|------------|
| 1      | 0    | 0          |

**Revision**

Identification Number: 102981885 / A215 / Issue Date: 12/05/2016 / Version: 1.0

DAS Code: GF-3339

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

|           |                                                                                                                                         |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------|
| ACGIH     | USA. American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV)                                     |
| CA AB OEL | Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)                                                                     |
| CA BC OEL | Canada. British Columbia OEL                                                                                                            |
| CA QC OEL | Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants |
| Dow IHG   | Dow Industrial Hygiene Guideline                                                                                                        |
| TWA       | Time weighted average                                                                                                                   |
| TWAEV     | Time-weighted average exposure value                                                                                                    |

**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.

DOW AGROSCIENCES CANADA INC. urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

# SAFETY DATA SHEET

## DOW AGROSCIENCES CANADA INC.

**Product name:** REXADE™ B Herbicide

**Issue Date:** 12/05/2016

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## 1. IDENTIFICATION

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**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@dow.com

### EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** 613-996-6666

**Local Emergency Contact:** 613-996-6666

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## 2. HAZARDS IDENTIFICATION

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### Emergency Overview

#### Appearance

Physical state                      Liquid

Color                                      Yellow

#### Odor

Characteristic

|                       |                                                                                                                                                                                        |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hazard Summary</b> | <b>WARNING!!</b><br>May cause allergic skin reaction.<br>May cause eye irritation.<br>May be harmful if swallowed.<br>Isolate area.<br>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.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

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This product is a mixture.

| Component                        | CASRN         | Weight percent |
|----------------------------------|---------------|----------------|
| 2,4-D 2-ethylhexyl ester         | 1928-43-4     | 87.2%          |
| Calcium dodecylbenzene sulfonate | 26264-06-2    | 3.0%           |
| Ethylhexanol                     | 104-76-7      | 1.0%           |
| Balance                          | Not available | 8.8%           |

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### 4. FIRST AID MEASURES

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#### 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.

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## 5. FIREFIGHTING MEASURES

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**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.

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## 6. ACCIDENTAL RELEASE MEASURES

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**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 Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

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## 7. HANDLING AND STORAGE

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**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.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Control parameters

Exposure limits are listed below, if they exist.

| Component                | Regulation | Type of listing | Value/Notation                  |
|--------------------------|------------|-----------------|---------------------------------|
| 2,4-D 2-ethylhexyl ester | CA ON OEL  | TWAEV           | 10 mg/m <sup>3</sup> , As 2,4-D |
|                          | CA BC OEL  | TWA             | 10 mg/m <sup>3</sup>            |
|                          | CA BC OEL  | STEL            | 20 mg/m <sup>3</sup>            |
| Ethylhexanol             | Dow IHG    | TWA             | 2 ppm                           |
|                          | Dow IHG    | TWA             | SKIN                            |

Consult local authorities for recommended exposure limits.

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.

**Skin protection**

**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.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance**

|                                               |                                                                        |
|-----------------------------------------------|------------------------------------------------------------------------|
| <b>Physical state</b>                         | Liquid                                                                 |
| <b>Color</b>                                  | Yellow                                                                 |
| <b>Odor</b>                                   | Characteristic                                                         |
| <b>Odor Threshold</b>                         | No test data available                                                 |
| <b>pH</b>                                     | 3.91 1% <i>pH Electrode</i> (1% aqueous suspension)                    |
| <b>Melting point/range</b>                    | Not applicable                                                         |
| <b>Freezing point</b>                         | No test data available                                                 |
| <b>Boiling point (760 mmHg)</b>               | No test data available                                                 |
| <b>Flash point</b>                            | <b>closed cup</b> 136 °C <i>Pensky-Martens Closed Cup ASTM D 93</i>    |
| <b>Evaporation Rate (Butyl Acetate = 1)</b>   | No test data available                                                 |
| <b>Flammability (solid, gas)</b>              | No data available                                                      |
| <b>Lower explosion limit</b>                  | No test data available                                                 |
| <b>Upper explosion limit</b>                  | No test data available                                                 |
| <b>Vapor Pressure</b>                         | No test data available                                                 |
| <b>Relative Vapor Density (air = 1)</b>       | Not applicable                                                         |
| <b>Relative Density (water = 1)</b>           | 1.1402 at 20 °C / 4 °C <i>Digital Density Meter (Oscillating Coil)</i> |
| <b>Water solubility</b>                       | emulsifiable                                                           |
| <b>Partition coefficient: n-octanol/water</b> | No data available                                                      |
| <b>Auto-ignition temperature</b>              | 273 °C <i>Literature</i> Ramped Temperature                            |
| <b>Decomposition temperature</b>              | No test data available                                                 |
| <b>Dynamic Viscosity</b>                      | 28.8 mPa.s at 20 °C                                                    |

|                             |                                                              |
|-----------------------------|--------------------------------------------------------------|
| <b>Kinematic Viscosity</b>  | 30.2 cSt at 20 °C                                            |
| <b>Explosive properties</b> | No data available                                            |
| <b>Oxidizing properties</b> | No data available                                            |
| <b>Liquid Density</b>       | 1.14 g/cm <sup>3</sup> at 20 °C <i>Digital density meter</i> |
| <b>Molecular weight</b>     | No data available                                            |

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

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## 10. STABILITY AND REACTIVITY

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**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.

**Incompatible materials:** Avoid contact with: Acids. Bases. Oxidizers.

**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.

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## 11. TOXICOLOGICAL INFORMATION

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*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.

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## 12. ECOLOGICAL INFORMATION

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*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).

Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

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**

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).

LC50, *Cyprinus carpio* (Carp), 96 Hour, 2.8 - 4.2 mg/l, Method Not Specified.

LC50, *Oryzias latipes* (Orange-red killifish), 48 Hour, 3.0 - 5.3 mg/l, Method Not Specified.

#### 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

##### **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)**

| Incubation Time | BOD    |
|-----------------|--------|
| 5 d             | 0.84 % |
| 10 d            | 0.92 % |
| 20 d            | 1.32 % |

**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

10-day Window: Pass

**Biodegradation:** 68 %**Exposure time:** 17 d**Method:** OECD Test Guideline 301B or Equivalent**Theoretical Oxygen Demand:** 2.95 mg/mg**Chemical Oxygen Demand:** 2.70 mg/mg**Biological oxygen demand (BOD)**

| Incubation Time | BOD       |
|-----------------|-----------|
| 5 d             | 26 - 70 % |
| 10 d            | 75 - 81 % |
| 20 d            | 86 - 87 % |

**Photodegradation****Test Type:** Half-life (indirect photolysis)**Sensitizer:** 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 high (BCF > 3000 or Log Pow between 5 and 7).**Partition coefficient: n-octanol/water(log Pow):** 6.78 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 &gt; 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.

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**13. DISPOSAL CONSIDERATIONS**

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**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.

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## 14. TRANSPORT INFORMATION

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### TDG

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

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

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

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

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

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## 15. REGULATORY INFORMATION

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### Hazardous Products Act Information: CPR Compliance

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

### Hazardous Products Act Information: WHMIS Classification

This product is exempt under WHMIS.

**National Fire Code of Canada**

Not applicable

**Canadian Domestic Substances List (DSL) (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**

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**16. OTHER INFORMATION**


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**Hazard Rating System****NFPA**

| Health | Fire | Reactivity |
|--------|------|------------|
| 1      | 1    | 0          |

**Revision**

Identification Number: 101209418 / A215 / Issue Date: 12/05/2016 / Version: 2.0

DAS Code: GF-1406

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

|           |                                      |
|-----------|--------------------------------------|
| CA BC OEL | Canada. British Columbia OEL         |
| CA ON OEL | Canada. Ontario OELs                 |
| Dow IHG   | Dow Industrial Hygiene Guideline     |
| SKIN      | Absorbed via skin                    |
| STEL      | short-term exposure limit            |
| TWA       | Time weighted average                |
| TWAEV     | time-weighted average exposure value |

**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.

DOW AGROSCIENCES CANADA INC. urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.