

**Product Name:** Eclipse\* III A Herbicide**Issue Date:** 2014.04.02

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. Product and Company Identification

**Product Name**

Eclipse\* III A Herbicide

**COMPANY IDENTIFICATION**

Dow AgroSciences Canada Inc.  
A Subsidiary of The Dow Chemical Company  
Suite 2100, 450 1<sup>st</sup> Street SW  
Calgary, AB T2P 5H1  
Canada

**For MSDS updates and Product Information:** 800-667-3852**Prepared By:** Prepared for use in Canada by EH&S, Hazard Communications.  
**Revision** 2014.04.02Customer Information Number: 800-667-3852  
[solutions@dow.com](mailto:solutions@dow.com)**EMERGENCY TELEPHONE NUMBER****24-Hour Emergency Contact:** 613-996-6666  
**Local Emergency Contact:** 613-996-6666

## 2. Hazards Identification

**Emergency Overview****Color:** Red to brown**Physical State:** Liquid**Odor:** Sweet**Hazards of product:**

CAUTION! Combustible liquid and vapor. May cause eye irritation. May cause skin irritation. May cause respiratory tract irritation. Vapor explosion hazard. Vapors may travel a long distance; ignition and/or flash back may occur. Isolate area. Keep upwind of spill. Stay out of low areas. Eliminate ignition sources. Toxic fumes may be released in fire situations.

**Potential Health Effects**

**Eye Contact:** May cause mild eye discomfort. May cause eye irritation. May cause slight temporary corneal injury. Mist may cause eye irritation. Vapor may cause eye irritation experienced as mild discomfort and redness.

**Skin Contact:** Prolonged contact may cause slight skin irritation with local redness.

**Skin Absorption:** Prolonged skin contact is unlikely to result in absorption of harmful amounts.

**Inhalation:** Mist may cause irritation of upper respiratory tract (nose and throat) and lungs. Excessive exposure (400 ppm) to isopropanol may cause eye, nose and throat irritation. Incoordination, confusion, hypotension, hypothermia, circulatory collapse, respiratory arrest and death may follow a longer duration or higher levels. Observations in animals include middle ear lining damage upon exposure to vapors of isopropanol. However, the relevance of this to humans is unknown

**Ingestion:** Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. Observations in animals include: Lethargy.

**Aspiration hazard:** Based on available information, aspiration hazard could not be determined.

**Effects of Repeated Exposure:** For the active ingredient(s): Based on available data, repeated exposures are not expected to cause significant adverse effects except at very high aerosol concentrations. Repeated excessive aerosol exposures may cause respiratory tract irritation and even death. Based on information for component(s): In animals, effects have been reported on the following organs: Liver. Kidney.

**Birth Defects/Developmental Effects:** For similar active ingredient(s): Clopyralid caused birth defects in test animals, but only at greatly exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure. Based on information for component(s): Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

**3. Composition/information on ingredients**

Component	CAS #	Amount W/W
Clopyralid monoethanolamine salt	57754-85-5	40.9 %
Isopropanol	67-63-0	5.0 %
Balance	Not available	54.1 %

Amounts are presented as percentages by weight.

**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. If breathing is difficult, oxygen should be administered by qualified personnel.

**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. 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:** 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 immediate medical attention and special treatment needed**

Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Hemodialysis may be of benefit if substantial amounts have been ingested and the patient is showing signs of intoxication. Consider hemodialysis for patients with persistent hypotension or coma unresponsive to standard therapy (isopropanol levels >400 - 500 mg/dl). (Goldfrank 1998, King et al, 1970). 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. Repeated excessive exposure may aggravate preexisting lung disease.

## 5. Fire Fighting Measures

**Suitable extinguishing media**

To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

**Special hazards arising from the substance or mixture**

**Hazardous Combustion Products:** Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** This material will not burn until the water has evaporated. Residue can burn. Container may rupture from gas generation in a fire situation.

**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. Move container from fire area if this is possible without hazard. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. 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.

See Section 9 for related Physical Properties

## 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. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Vapor

explosion hazard. Keep out of sewers. 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.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Pump with explosion-proof equipment. If available, use foam to smother or suppress. 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.

## 7. Handling and Storage

### Handling

**General Handling:** Keep out of reach of children. Do not swallow. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling. Keep container closed. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. Keep away from heat, sparks and flame. No smoking, open flames or sources of ignition in handling and storage area. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Electrically ground and bond all equipment.

### Storage

Minimize sources of ignition, such as static build-up, heat, spark or flame. 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

### Exposure Limits

Component	List	Type	Value
Isopropanol	CAD BC OEL	TWA	200 ppm
	CAD BC OEL	STEL	400 ppm
	CAD ON OEL	TWAEV	200 ppm
	CAD ON OEL	STEV	400 ppm
	ACGIH	TWA	200 ppm BEI
	ACGIH	STEL	400 ppm BEI
	OEL (QUE)	TWA	983 mg/m <sup>3</sup> 400 ppm
	OEL (QUE)	STEL	1,230 mg/m <sup>3</sup> 500 ppm
	CAD AB OEL	TWA	492 mg/m <sup>3</sup> 200 ppm
	CAD AB OEL	STEL	984 mg/m <sup>3</sup> 400 ppm
Ethylene oxide, propylene oxide and di-sec-butylphenol polymer	Dow IHG	TWA	2 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.

**Personal Protection**

**Eye/Face Protection:** Use safety glasses (with side shields). If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

**Skin Protection:** Wear clean, body-covering clothing.

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

**Respiratory Protection:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

**Ingestion:** Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

**Engineering Controls**

**Ventilation:** 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.

## 9. Physical and Chemical Properties

**Appearance****Physical State**

Liquid

**Color**

Red to brown

**Odor**

Sweet

**pH**

7.5 - 8.0

**Melting Point**

Not applicable

**Freezing Point**

No test data available

**Boiling Point (760 mmHg)**

100 °C

**Flash Point - Closed Cup**47.2 °C *Closed Cup***Evaporation Rate (Butyl**

No test data available

**Acetate = 1)****Flammable Limits In Air****Lower:** No test data available**Upper:** No test data available

23.5 mmHg @ 20 °C

**Vapor Pressure**

1.06 @ 20 °C

**Vapor Density (air = 1)**

1.161

**Specific Gravity (H<sub>2</sub>O = 1)**  
**Solubility in water (by weight)**

Miscible with water

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

No data available for this product. See Section 12 for individual component data.

**Autoignition Temperature**

No test data available

**Decomposition**

No test data available

**Temperature**

7 cPs

**Dynamic Viscosity**

No test data available

**Kinematic Viscosity**1.161 g/cm<sup>3</sup> @ 20 °C *Calculated*

## 10. Stability and Reactivity

### Reactivity

No dangerous reaction known under conditions of normal use.

### Chemical stability

Unstable at elevated temperatures.

### Possibility of hazardous reactions

Polymerization will not occur.

**Conditions to Avoid:** Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid. Avoid direct sunlight.

**Incompatible Materials:** Avoid contact with: Acids. Halogenated organics. Oxidizers. Avoid contact with metals such as: Aluminum. Zinc. Brass. Copper.

### 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: Chlorinated pyridine. Hydrogen chloride. Nitrogen oxides.

## 11. Toxicological Information

### Acute Toxicity

#### Ingestion

As product: LD50, rat, male and female > 5,000 mg/kg

#### Dermal

As product: LD50, rabbit > 5,000 mg/kg

#### Inhalation

As product: LC50, 4 h, Aerosol, rat, male and female > 3.0 mg/l

Maximum attainable concentration. No deaths occurred at this concentration.

#### Eye damage/eye irritation

May cause mild eye discomfort. May cause eye irritation. May cause slight temporary corneal injury. Mist may cause eye irritation. Vapor may cause eye irritation experienced as mild discomfort and redness.

#### Skin corrosion/irritation

Prolonged contact may cause slight skin irritation with local redness.

#### Sensitization

##### Skin

Did not cause allergic skin reactions when tested in guinea pigs.

#### Respiratory

No relevant information found.

#### Repeated Dose Toxicity

For the active ingredient(s): Based on available data, repeated exposures are not expected to cause significant adverse effects except at very high aerosol concentrations. Repeated excessive aerosol exposures may cause respiratory tract irritation and even death. Based on information for component(s): In animals, effects have been reported on the following organs: Liver. Kidney.

#### Chronic Toxicity and Carcinogenicity

Similar formulations did not cause cancer in laboratory animals.

#### Developmental Toxicity

For similar active ingredient(s): Clopyralid caused birth defects in test animals, but only at greatly exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure. Based on information for component(s): Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

**Reproductive Toxicity**

In animal studies, active ingredient did not interfere with reproduction.

**Genetic Toxicology**

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

## 12. Ecological Information

**Toxicity****Data for Component: Clopyralid monoethanolamine salt**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested). 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).

**Fish Acute & Prolonged Toxicity**

For similar active ingredient(s): Clopyralid. LC50, *Oncorhynchus mykiss* (rainbow trout), static test, 96 h: > 99.9 mg/l

**Aquatic Invertebrate Acute Toxicity**

For similar active ingredient(s): Clopyralid. EC50, *Daphnia magna* (Water flea), static test, 48 h, immobilization: > 99.0 mg/l

**Toxicity to Above Ground Organisms**

For similar active ingredient(s): Clopyralid. oral LD50, *Anas platyrhynchos* (Mallard duck): 1465 - 2000 mg/kg bodyweight.

For similar active ingredient(s): Clopyralid. dietary LC50, *Colinus virginianus* (Bobwhite quail): > 5000 mg/kg diet.

For similar active ingredient(s): Clopyralid. contact LD50, *Apis mellifera* (bees): > 100 micrograms/bee

For similar active ingredient(s): Clopyralid. oral LD50, *Apis mellifera* (bees): > 98.1 micrograms/bee

**Data for Component: Isopropanol**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**

LC50, *Pimephales promelas* (fathead minnow), flow-through test, 96 h: 9,640 mg/l

**Aquatic Invertebrate Acute Toxicity**

LC50, *Daphnia magna* (Water flea), static test, 24 h, immobilization: > 1,000 mg/l

**Aquatic Plant Toxicity**

NOEC, alga *Scenedesmus* sp., static test, Growth inhibition (cell density reduction), 7 d: 1,800 mg/l

ErC50, alga *Scenedesmus* sp., static test, Growth rate inhibition, 72 h: > 1,000 mg/l

**Toxicity to Micro-organisms**

EC50; activated sludge: > 1,000 mg/l

**Aquatic Invertebrates Chronic Toxicity Value**

*Daphnia magna* (Water flea), semi-static test, 21 d, NOEC: 30 mg/l

**Persistence and Degradability****Data for Component: Clopyralid monoethanolamine salt**

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

**Data for Component: Isopropanol**

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

**OECD Biodegradation Tests:**

Biodegradation	Exposure Time	Method	10 Day Window
95 %	21 d	OECD 301E Test	pass

53 %	5 d	Other guidelines	pass
<b>Indirect Photodegradation with OH Radicals</b>			
<b>Rate Constant</b>	<b>Atmospheric Half-life</b>		<b>Method</b>
7.26E-12 cm <sup>3</sup> /s	1.472 d		Estimated.
<b>Biological oxygen demand (BOD):</b>			
<b>BOD 5</b>	<b>BOD 10</b>	<b>BOD 20</b>	<b>BOD 28</b>
20 - 72 %		78 - 86 %	
<b>Chemical Oxygen Demand:</b> 2.09 mg/mg			
<b>Theoretical Oxygen Demand:</b> 2.40 mg/mg			

## Bioaccumulative potential

### Data for Component: Clopyralid monoethanolamine salt

**Bioaccumulation:** For similar active ingredient(s): Clopyralid. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

### Data for Component: Isopropanol

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

**Partition coefficient, n-octanol/water (log Pow):** 0.05 Measured

## Mobility in soil

### Data for Component: Clopyralid monoethanolamine salt

**Mobility in soil:** For similar active ingredient(s):, Clopyralid., Potential for mobility in soil is very high (Koc between 0 and 50).

### Data for Component: Isopropanol

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

**Partition coefficient, soil organic carbon/water (Koc):** 1.1 Estimated.

**Henry's Law Constant (H):** 3.38E-06 - 8.07E-06 atm\*m<sup>3</sup>/mole; 25 °C Estimated.

## 13. Disposal Considerations

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 Small container

NOT REGULATED

### TDG Large container

**Proper Shipping Name:** FLAMMABLE LIQUID, N.O.S.

**Technical Name:** CONTAINS ISOPROPANOL

**Hazard Class:** 3 **ID Number:** UN1993 **Packing Group:** PG III

### IMDG

**Proper Shipping Name:** FLAMMABLE LIQUID, N.O.S.

**Technical Name:** CONTAINS ISOPROPANOL

**Hazard Class:** 3 **ID Number:** UN1993 **Packing Group:** PG III

**EMS Number:** F-E,S-E  
**Marine pollutant:** No

**ICAO/IATA**

**Proper Shipping Name:** FLAMMABLE LIQUID, N.O.S.  
**Technical Name:** CONTAINS ISOPROPANOL  
**Hazard Class:** 3 **ID Number:** UN1993 **Packing Group:** PG III  
**Cargo Packing Instruction:** 366  
**Passenger Packing Instruction:** 355

**15. Regulatory Information****CEPA - Domestic Substances List (DSL)**

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

**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.

**Pest Control Products Act Registration number:** 29032

**National Fire Code of Canada**

Class II

**16. Other Information****Hazard Rating System**

NFPA	Health	Fire	Reactivity
	2	2	1

**Recommended Uses and Restrictions****Identified uses**

Product use: End use herbicide product

**Revision**

Identification Number: 50397 / 1023 / Issue Date 2014.04.02 / Version: 8.2

DAS Code: XRM-3972

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

**Legend**

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
VOL/VOL	Volume/Volume

*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.*

# Material Safety Data Sheet

## DOW AGROSCIENCES CANADA INC.

## Product name: Eclipse III B Herbicide

**Issue Date:** 12/16/2015  
**Print Date:** 12/16/2015

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. PRODUCT AND COMPANY IDENTIFICATION

**Product name:** Eclipse III B Herbicide

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

### **Identified uses:** End use herbicide product

## COMPANY IDENTIFICATION

DOW AGROSCIENCES CANADA INC.  
2100 450 1<sup>ST</sup> STREET SW  
CALGARY AB T2P 5H1  
CANADA

For MSDS Updates and Product Information: 800-667-3852

**Prepared by:** Prepared for use in Canada by EH&S, Hazard Communications.

Revision Date: 12/16/2015

Print Date: 12/16/2015

**Customer Information Number:**

800-667-3852

[solutions@dow.com](mailto:solutions@dow.com)

## EMERGENCY TELEPHONE NUMBER

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

## 2. HAZARDS IDENTIFICATION

## Emergency C

### Physical state

Color: Yellow

<b>Hazard Summary</b>	<p><b>WARNING!!</b> May cause allergic skin reaction. May cause eye irritation. Isolate area.</p>
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**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.  
Has demonstrated the potential for contact allergy in mice.

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

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

**Chronic Exposure:** For similar active ingredient(s).

Glyphosate.

Has been toxic to the fetus in laboratory animals at doses toxic to the mother.  
In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.  
Weight of evidence evaluation of epidemiology studies supports no association between glyphosate exposure and cancer.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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**Chemical nature:** Plant growth regulator

This product is a mixture.

Component	CASRN	Weight percent
Glyphosate DMA Salt	34494-04-7	50.2%
Balance	Not available	49.8%

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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:** 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 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.

**Unsuitable extinguishing media:** No data available

**Special hazards arising from the substance or mixture**

**Hazardous combustion products:** Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Phosphorus oxides. Nitrogen oxides. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** This material will not burn until the water has evaporated. Residue can burn.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. 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.

**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 contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**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. Do not store in: Galvanized containers. Steel.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Control parameters

Exposure limits are listed below, if they exist.

Consult local authorities for recommended exposure limits.

Exposure limits have not been established for those substances listed in the composition, if any have been disclosed.

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. Natural rubber ("latex").

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

**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>	Amine.
<b>Odor Threshold</b>	No data available
<b>pH</b>	4.59 <i>pH Electrode</i>
<b>Melting point/range</b>	Not applicable
<b>Freezing point</b>	No data available
<b>Boiling point (760 mmHg)</b>	No data available
<b>Flash point</b>	<b>closed cup</b> > 100 °C <i>Setaflash Closed Cup ASTM D3828</i>
<b>Evaporation Rate (Butyl Acetate = 1)</b>	No data available
<b>Flammability (solid, gas)</b>	No data available
<b>Lower explosion limit</b>	No data available
<b>Upper explosion limit</b>	No data available
<b>Vapor Pressure</b>	No data available
<b>Relative Vapor Density (air = 1)</b>	No data available
<b>Relative Density (water = 1)</b>	No data available
<b>Water solubility</b>	Soluble
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Auto-ignition temperature</b>	No data available
<b>Decomposition temperature</b>	No test data available
<b>Dynamic Viscosity</b>	32.5 mPa.s at 40 °C 62.3 mPa.s at 20 °C
<b>Kinematic Viscosity</b>	No data available

<b>Explosive properties</b>	No
<b>Oxidizing properties</b>	No significant increase (>5C) in temperature.
<b>Liquid Density</b>	1.2114 g/cm3 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:** Thermally stable at typical use temperatures.

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

**Conditions to avoid:** Active ingredient decomposes at elevated temperatures.

**Incompatible materials:** Avoid contact with: Acids. Halogens. Oxidizers. Peroxides. Flammable hydrogen may be generated from contact with metals such as: Steel.

**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. Hydrocarbons. Nitrogen oxides. Phosphorus oxides.

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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

#### 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

#### Acute inhalation toxicity

No adverse effects are anticipated from single exposure to mist. Based on the available data, narcotic effects were not observed.

As product:

LC50, Rat, male and female, 4 Hour, Aerosol, > 5.63 mg/l No deaths occurred at this concentration.

**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**

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 similar material(s):

Glyphosate.

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

**Carcinogenicity**

For similar active ingredient(s). Glyphosate. Did not cause cancer in laboratory animals. Weight of evidence evaluation of epidemiology studies supports no association between glyphosate exposure and cancer.

**Teratogenicity**

For similar active ingredient(s). Glyphosate. 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 similar active ingredient(s). Glyphosate. In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

**Mutagenicity**

This material was not mutagenic in an Ames bacterial assay. Animal genetic toxicity studies were negative.

**Genetic Toxicity in vivo**

Mouse Bone Marrow Micronucleus Test Mouse male Oral gavage negativeResult: 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**

**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, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, 11 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), static test, 48 Hour, 17 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, Growth rate inhibition, 2.1 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to Above Ground Organisms**

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

oral LD50, Coturnix japonica (Japanese quail), > 2250mg/kg bodyweight.

oral LD50, Apis mellifera (bees), 48 Hour, > 250µg/bee

contact LD50, Apis mellifera (bees), 48 Hour, > 250µg/bee

**Toxicity to soil-dwelling organisms**

LC50, Eisenia fetida (earthworms), 14 d, survival, > 996.6 mg/kg

**Persistence and degradability**

**Glyphosate DMA Salt**

**Biodegradability:** For similar active ingredient(s). Glyphosate. Biodegradation may occur under aerobic conditions (in the presence of oxygen).

**Balance**

**Biodegradability:** No relevant data found.

**Bioaccumulative potential**

**Glyphosate DMA Salt**

**Bioaccumulation:** For similar active ingredient(s). Glyphosate. Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Potential for mobility in soil is slight (Koc between 2000 and 5000). For similar active ingredient(s). Glyphosate. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Balance**

**Bioaccumulation:** No relevant data found.

**Mobility in soil**

**Glyphosate DMA Salt**

For similar active ingredient(s).  
Glyphosate.  
Expected to be relatively immobile in soil (Koc > 5000).

**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.(Glyphosate)
<b>UN number</b>	UN 3082
<b>Class</b>	9
<b>Packing group</b>	III
<b>Marine pollutant</b>	Glyphosate

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

<b>Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Glyphosate)
<b>UN number</b>	UN 3082
<b>Class</b>	9
<b>Packing group</b>	III
<b>Marine pollutant</b>	Glyphosate
<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.(Glyphosate)
<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 Registration Number: 29033

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## 16. OTHER INFORMATION

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

Health	Fire	Reactivity
1	1	0

**Revision**

Identification Number: 101223205 / A215 / Issue Date: 12/16/2015 / Version: 2.0

DAS Code: GF-1280

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

**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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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.