

May 2013

# **MATERIAL SAFETY DATA SHEETS**

**FOR ASSIGNMENT:**

**PURSUIT HERBICIDE**

**PLUS**

**ROUNDUP WEATHERMAX WITH  
TRANSORB 2 TECHNOLOGY  
LIQUID HERBICIDE**

# Safety Data Sheet

## PURSUIT HERBICIDE

Revision date : 2013/05/24  
Version: 5.0

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(30128249/SDS\_CPA\_CA/EN)

### 1. Product and Company Identification

#### Company

BASF Canada Inc.  
100 Milverton Drive  
Mississauga, ON L5R 4H1, CANADA

#### 24 Hour Emergency Response Information

CANUTEC (reverse charges): (613) 996-6666  
BASF HOTLINE: (800) 454-COPE (2673)

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Molecular formula:	C <sub>15</sub> H <sub>19</sub> N <sub>3</sub> O <sub>3</sub> · N H(4)
Chemical family:	imidazole derivative
PCP21537/26287/28885	
Synonyms:	Imazethapyr ammonium

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### 2. Hazards Identification

#### Emergency overview

CAUTION:  
MAY BE HARMFUL IF SWALLOWED.  
May be harmful if absorbed through skin.  
MAY BE HARMFUL IF INHALED.  
KEEP OUT OF REACH OF CHILDREN.  
MAY CAUSE EYE IRRITATION.  
MAY CAUSE SKIN IRRITATION.  
May cause eye damage.

State of matter: liquid  
Colour: green to dark brown  
Odour: musty

#### Potential health effects

##### **Irritation / corrosion:**

May cause slight but temporary irritation to the eyes. May cause slight irritation to the skin.

##### **Sensitization:**

Skin sensitizing effects were not observed in animal studies.

#### Potential environmental effects

##### **Aquatic toxicity:**

There is a high probability that the product is not acutely harmful to fish. There is a high probability that the product is not acutely harmful to aquatic invertebrates. Very toxic (acute effect) to aquatic plants.

##### **Terrestrial toxicity:**

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With high probability not acutely harmful to terrestrial organisms.

**Degradation / environmental fate:**

Not readily biodegradable (by OECD criteria).

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### 3. Composition / Information on Ingredients

Not WHMIS controlled.

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### 4. First-Aid Measures

**General advice:**

First aid providers should wear personal protective equipment to prevent exposure. Remove contaminated clothing. Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or physician for treatment advice. Have the product container or label with you when calling a poison control center or doctor or going for treatment.

**If inhaled:**

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary.

**If on skin:**

After contact with skin, wash immediately with plenty of water and soap. If irritation develops, seek medical attention.

**If in eyes:**

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

**If swallowed:**

Rinse mouth immediately and then drink plenty of water, seek medical attention. Do not induce vomiting unless told to by a poison control center or doctor. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions.

**Note to physician**

Antidote: No known specific antidote.  
Treatment: Treat symptomatically.

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### 5. Fire-Fighting Measures

Flash point:	93 °C	(DIN 51758)
Autoignition:		not applicable Based on the water content the product does not ignite.
Lower explosion limit:		As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Upper explosion limit:		As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Flammability:	not flammable	
Self-ignition temperature:		not self-igniting

**Suitable extinguishing media:**

foam, dry powder, carbon dioxide, water spray

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### **Hazards during fire-fighting:**

carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide, Hydrocarbons,  
If product is heated above decomposition temperature, toxic vapours will be released. The substances/groups of substances mentioned can be released if the product is involved in a fire.

### **Protective equipment for fire-fighting:**

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

### **Further information:**

Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

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## 6. Accidental release measures

### **Personal precautions:**

Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

### **Environmental precautions:**

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

### **Cleanup:**

Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

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## 7. Handling and Storage

### **Handling**

#### **General advice:**

Ensure adequate ventilation. Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect contents from the effects of light. Protect against heat. Protect from air. Handle and open container with care. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

#### **Protection against fire and explosion:**

No special precautions necessary. The substance/product is non-combustible.

### **Storage**

#### **General advice:**

Keep away from heat. Protect against moisture. Protect from direct sunlight. Store protected against freezing.

#### **Storage incompatibility:**

General advice: Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

#### **Temperature tolerance**

Protect from temperatures below: 0 °C

Changes in the properties of the product may occur if substance/product is stored below indicated temperature for extended periods of time.

Protect from temperatures above: 40 °C

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Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

### 8. Exposure Controls and Personal Protection

**Users of a pesticidal product should refer to the product label for personal protective equipment requirements.**

#### **Advice on system design:**

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

#### **Personal protective equipment**

##### **Respiratory protection:**

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) TC23C Chemical/Mechanical type filter system to remove a combination of particles, gas and vapours. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

##### **Hand protection:**

Chemical resistant protective gloves

##### **Eye protection:**

Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

##### **Body protection:**

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

##### **General safety and hygiene measures:**

Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

### 9. Physical and Chemical Properties

Form:	liquid	
Odour:	musty	
Odour threshold:	No data available.	
Colour:	green to dark brown	
pH value:	6.5 - 7	
Freezing point:	approx. < 0 °C	Information applies to the solvent.
Boiling point:	approx. 100 °C	( 1 ATM) Information applies to the solvent.
Vapour pressure:	approx. 23.3 kPa	( 20 °C) Information applies to the solvent.
Density:	1.1 - 1.12 g/cm <sup>3</sup>	( 21 °C)
Viscosity, dynamic:	approx. > 1 mPa.s	( 20 °C)
Solubility in water:		miscible
Molar mass:	289.3 g/mol	

### 10. Stability and Reactivity

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### Conditions to avoid:

Avoid all sources of ignition: heat, sparks, open flame. Avoid prolonged storage. Avoid contamination. Avoid prolonged exposure to extreme heat. Avoid extreme temperatures.

### Substances to avoid:

oxidizing agents

### Hazardous reactions:

The product is chemically stable.

Hazardous polymerization will not occur. No hazardous reactions if stored and handled as prescribed/indicated.

### Decomposition products:

Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated., Prolonged thermal loading can result in products of degradation being given off.

### Thermal decomposition:

No decomposition if stored and handled as prescribed/indicated.

### Corrosion to metals:

zinc iron mild steel brass copper

### Oxidizing properties:

not fire-propagating

Not an oxidizer.

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## 11. Toxicological information

### Acute toxicity

#### Oral:

Type of value: LD50  
Species: rat (male/female)  
Value: > 5,000 mg/kg

#### Inhalation:

Type of value: LC50  
Species: rat (male/female)  
Value: > 2.67 mg/l  
Highest concentration available for testing. No mortality was observed.

#### Dermal:

Type of value: LD50  
Species: rabbit (male/female)  
Value: > 5,000 mg/kg

### Irritation / corrosion

#### Skin:

Species: rabbit  
Result: non-irritant

#### Eye:

Species: rabbit  
Result: non-irritant

#### Sensitization:

Buehler test  
Species: guinea pig  
Result: Skin sensitizing effects were not observed in animal studies.

### Genetic toxicity

*Information on: imazethapyr*

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*No mutagenic effect was found in various tests with microorganisms and mammals.*  
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### **Carcinogenicity**

*Information on: imazethapyr*  
*In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed.*  
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### **Reproductive toxicity**

*Information on: imazethapyr*  
*The results of animal studies gave no indication of a fertility impairing effect.*  
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### **Development:**

*Information on: imazethapyr*  
*No indications of a developmental toxic / teratogenic effect were seen in animal studies.*  
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## **12. Ecological Information**

### **Fish**

Acute:  
Flow through.  
Oncorhynchus mykiss/LC50 (96 h): > 112 mg/l

### **Aquatic invertebrates**

Acute:  
Flow through.  
Daphnia magna/EC50 (48 h): > 110 mg/l

### **Aquatic plants**

Toxicity to aquatic plants:  
static  
Algae/EC50 (96 h): 21.5 mg/l

### **Degradability / Persistence** **Biological / Abiological Degradation**

Evaluation: Not readily biodegradable (by OECD criteria).

*Information on: imazethapyr*  
*Test method: DIN ISO 11266, soil*  
*Method of analysis: CO2 formation relative to the theoretical value*  
*Degree of elimination: approx. 1 - 2 % (28 d)*

### **Bioaccumulation**

*Information on: imazethapyr*  
*Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.*  
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### 13. Disposal considerations

**Waste disposal of substance:**

See product label for disposal and recycling instructions.

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### 14. Transport Information

**Land transport**

TDG

Not classified as a dangerous good under transport regulations

**Sea transport**

IMDG

Hazard class: 9  
Packing group: III  
ID number: UN 3082  
Hazard label: 9, EHSM  
Marine pollutant: YES  
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(contains IMAZETHAPYR 22%)

**Air transport**

IATA/ICAO

Hazard class: 9  
Packing group: III  
ID number: UN 3082  
Hazard label: 9, EHSM  
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(contains IMAZETHAPYR 22%)

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### 15. Regulatory Information

**Federal Regulations**

**Registration status:**

Chemical DSL, CA released; restriction on quantity / not listed

Crop Protection DSL, CA released / exempt

WHMIS does not apply to this product.

**THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CPR AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CPR.**

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### 16. Other Information

Recommended use: herbicide



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We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

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**SDS Prepared by:**

BASF NA Product Regulations

msds@basf.com

BASF HOTLINE (800) 454 – COPE (2673)

SDS Prepared on: 2013/05/24

END OF DATA SHEET

# Monsanto Canada

## Safety Data Sheet

### Commercial Product

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name**

**Roundup WeatherMax® with Transorb® 2 Technology Liquid Herbicide**

**PCP Reg. No.**

27487

**Product use**

Herbicide

**Chemical name**

Not applicable.

**Synonyms**

None.

**Company**

Monsanto Canada, 900 - One Research Road, Winnipeg, MB, R3T 6E3

**Telephone:** 204-985-1000 or 800-667-4944 **Fax:** 204-488-9599

**E-mail:** safety.datasheet@monsanto.com

**Emergency numbers**

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT Call CANUTEC - Day or Night: 613-996-6666 (collect calls accepted) or MONSANTO: 314-694-4000 (collect calls accepted).

FOR MEDICAL EMERGENCY - Day or Night: +1 (314) 694-4000 (collect calls accepted).

## 2. HAZARDS IDENTIFICATION

**Emergency overview**

**Appearance and odour (colour/form/odour):** Blue / Liquid, free from foreign materials / Odourless

CAUTION!  
POISON  
HARMFUL IF SWALLOWED  
HARMFUL IF INHALED  
CAUSES EYE IRRITATION  
CAUSES SKIN IRRITATION

**Potential health effects**

**Likely routes of exposure**

Skin contact, eye contact, inhalation

**Eye contact, short term**

May cause temporary eye irritation.

**Skin contact, short term**

Irritating to skin.

**Inhalation, short term**

Harmful by inhalation.

**Single ingestion**

Harmful if swallowed.

Refer to section 11 for toxicological and section 12 for environmental information.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Active ingredient**

Potassium salt of N-(phosphonomethyl)glycine; {Potassium salt of glyphosate }

**Composition**

COMPONENT	CAS No.	% by weight (approximate)
Potassium salt of glyphosate	70901-12-1	48.8
Surfactant(s), water and minor formulating ingredients		51.2

The specific chemical identity is being withheld because it is trade secret information of Monsanto Company.

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**4. FIRST AID MEASURES**

Use personal protection recommended in section 8.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

**Eye contact**

Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre 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.

**Inhalation**

If inhaled, move person to fresh air. If person is not breathing, call emergency number or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.

**Ingestion**

Call a poison control centre or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

**Advice to doctors**

This product is not an inhibitor of cholinesterase.

**Antidote**

Treatment with atropine and oximes is not indicated.

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**5. FIRE-FIGHTING MEASURES**

**Flash point**

Does not flash.

**Extinguishing media**

Recommended: Water, foam, dry chemical, carbon dioxide (CO<sub>2</sub>)

**Unusual fire and explosion hazards**

Minimise use of water to prevent environmental contamination.  
Environmental precautions: see section 6.

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**Hazardous products of combustion**

Carbon monoxide (CO), phosphorus oxides (PxOy), nitrogen oxides (NOx)

**Fire fighting equipment**

Self-contained breathing apparatus.

Equipment should be thoroughly decontaminated after use.

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**6. ACCIDENTAL RELEASE MEASURES****Environmental precautions**

SMALL QUANTITIES:

Low environmental hazard.

LARGE QUANTITIES:

Minimise spread.

Keep out of drains, sewers, ditches and water ways.

**Methods for cleaning up**

SMALL QUANTITIES:

Absorb in earth, sand or absorbent material.

Sweep, scoop or vacuum to remove.

LARGE QUANTITIES:

Dig up heavily contaminated soil.

Refer to section 7 for types of containers.

Collect in containers for disposal.

Wash spill area with detergent and water.

Minimise use of water to prevent environmental contamination.

Refer to section 13 for disposal of spilled material.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

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**7. HANDLING AND STORAGE**

Good industrial practice in housekeeping and personal hygiene should be followed.

**Handling**

Do NOT taste or swallow.

Avoid contact with eyes, skin and clothing.

Avoid breathing vapour or mist.

When using do not eat, drink or smoke.

Wash hands thoroughly after handling or contact.

Thoroughly clean equipment after use.

Do not contaminate drains, sewers and water ways when disposing of equipment rinse water.

Refer to section 13 of the safety data sheet for disposal of rinse water.

Emptied containers retain vapour and product residue.

**FOLLOW LABELLED WARNINGS EVEN AFTER CONTAINER IS EMPTIED.**

**Storage**

Minimum storage temperature: -15 °C

Maximum storage temperature: 50 °C

Compatible materials for storage: stainless steel, fibreglass, plastic, aluminium

Incompatible materials for storage: galvanised steel, unlined mild steel, see section 10.

Keep out of reach of children.

Keep away from food, drink and animal feed.

Keep only in the original container.

Keep container tightly closed in a cool, well-ventilated place.

Partial crystallization may occur on prolonged storage below the minimum storage temperature.  
If frozen, place in warm room and shake frequently to put back into solution.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Airborne exposure limits

Components	Exposure Guidelines
Potassium salt of glyphosate	No specific occupational exposure limit has been established.
Surfactant(s), water and minor formulating ingredients	No specific occupational exposure limit has been established.

### Engineering controls

No special requirement when used as recommended.

### Eye protection

If there is significant potential for contact:

Wear chemical goggles.

Applicators and other handlers must wear eye protection.

### Skin protection

Wear chemical resistant gloves.

Applicators and other handlers must wear:

Wear coveralls over long-sleeved shirt and long pants.

If there is significant potential for contact:

Wear face shield.

### Respiratory protection

If airborne exposure is excessive:

Wear respirator.

Full facepiece/hood/helmet respirator replaces need for chemical goggles.

When recommended, consult manufacturer of personal protective equipment for the appropriate type of equipment for a given application.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

Colour/colour range:	Blue
Odour:	Odourless
Form:	Liquid, free from foreign materials
Physical form changes (melting, boiling, etc.):	
Melting point:	Not applicable.
Boiling point:	No data.
Flash point:	Does not flash.
Explosive properties:	Upper explosion limit: Not applicable.; Lower explosion limit: Not applicable.
Auto ignition temperature:	Not applicable.
Specific gravity:	1.3573 @ 20 °C / 15.6 °C
Vapour pressure:	No significant volatility; aqueous solution.
Vapour density:	Not applicable.
Evaporation rate:	No data.

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Dynamic viscosity:	No data.
Kinematic viscosity:	No data.
Density:	1.3573 g/cm <sup>3</sup> @ 20 °C
Solubility:	Water: Soluble
pH:	4.5 - 4.9 @ 67.7 g/l
Partition coefficient:	log Pow: -3.2 @ 25 °C (glyphosate)

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## 10. STABILITY AND REACTIVITY

### Stability

Stable under normal conditions of handling and storage.

### Oxidizing properties

No data.

### Materials to avoid/Reactivity

Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

### Hazardous decomposition

Thermal decomposition: Hazardous products of combustion: see section 5.

### Self-accelerating decomposition temperature (SADT)

No data.

### Hazardous polymerization

No data.

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## 11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals.

Data obtained on similar products and on components are summarized below.

### Similar formulation

#### Acute oral toxicity

**Rat, LD50:** > 5,000 mg/kg body weight

Practically non-toxic.

FIFRA category IV.

#### Acute dermal toxicity

**Rat, LD50:** > 5,000 mg/kg body weight

Practically non-toxic.

FIFRA category IV.

#### Skin irritation

**Rabbit, 3 animals, OECD 404 test:**

Days to heal: 14

Primary Irritation Index (PII): 2.2/8.0

Moderate irritation.

FIFRA category III.

#### Eye irritation

**Rabbit, 3 animals, OECD 405 test:**

Days to heal: 10

Moderate irritation.

FIFRA category III.

**Acute inhalation toxicity**

**Rat, LC50, 4 hours, aerosol:** > 1.20 mg/L

Slightly toxic.

FIFRA category III.

No mortality. For purposes of the inhalation test, product was artificially aerosolized. Since this material will not become aerosolized to a hazardous concentration during transport, it is classified as non-hazardous under the transportation regulations in accordance with 2.6.2.2.4.7(b) and (c) of the UN Recommendations on the Transport of Dangerous Goods.

**Skin sensitization**

**Guinea pig, 3-induction Buehler test:**

Positive incidence: 0 %

**N-(phosphonomethyl)glycine; { glyphosate}**

**Mutagenicity**

**In vitro and in vivo mutagenicity test(s):**

Not mutagenic.

**Repeated dose toxicity**

**Rabbit, dermal, 21 days:**

NOAEL toxicity: > 5,000 mg/kg body weight/day

Target organs/systems: none

Other effects: none

**Rat, oral, 3 months:**

NOAEL toxicity: > 20,000 mg/kg diet

Target organs/systems: none

Other effects: none

**Chronic effects/carcinogenicity**

**Rat, oral, 24 months:**

NOAEL toxicity: ~ 8,000 mg/kg diet

Target organs/systems: eyes

Other effects: decrease of body weight gain, histopathologic effects

NOEL tumour: > 20,000 ppm

Tumours: none

**Toxicity to reproduction/fertility**

**Rat, oral, 2 generations:**

NOAEL toxicity: 10,000 ppm

NOAEL reproduction: > 30,000 mg/kg diet

Target organs/systems in parents: none

Other effects in parents: decrease of body weight gain

Target organs/systems in pups: none

Other effects in pups: decrease of body weight gain

Effects on offspring only observed with maternal toxicity.

**Developmental toxicity/teratogenicity**

**Rat, oral, 6 - 19 days of gestation:**

NOAEL toxicity: 1,000 mg/kg body weight

NOAEL development: 1,000 mg/kg body weight

Other effects in mother animal: decrease of body weight gain, decrease of survival

Developmental effects: weight loss, post-implantation loss, delayed ossification

Effects on offspring only observed with maternal toxicity.

**Rabbit, oral, 6 - 27 days of gestation:**

NOAEL toxicity: 175 mg/kg body weight

NOAEL development: 175 mg/kg body weight

Target organs/systems in mother animal: none

Other effects in mother animal: decrease of survival

Developmental effects: none

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## 12. ECOLOGICAL INFORMATION

This section is intended for use by ecotoxicologists and other environmental specialists.

Data obtained on similar products and on components are summarized below.

### Similar formulation

#### Aquatic toxicity, fish

##### **Rainbow trout (*Oncorhynchus mykiss*):**

Acute toxicity, 96 hours, semi-static, LC50: 3.13 mg/L  
Moderately toxic.

#### Aquatic toxicity, algae/aquatic plants

##### **Green algae (*Selenastrum capricornutum*):**

Acute toxicity, 72 hours, static, EbC50 (biomass): 0.124 mg/L  
Highly toxic.

#### Arthropod toxicity

##### **Honey bee (*Apis mellifera*):**

Contact, 48 hours, LD50: > 250 µg/bee  
Practically non-toxic.

##### **Honey bee (*Apis mellifera*):**

Oral, 48 hours, LD50: > 238.8 µg/bee  
Practically non-toxic.

#### Soil organism toxicity, invertebrates

##### **Earthworm (*Eisenia foetida*):**

Acute toxicity, 14 days, LC50: > 10,000 mg/kg dry soil  
Practically non-toxic.

#### Soil organism toxicity, microorganisms

##### **Nitrogen and carbon transformation test:**

40 L/ha, 28 days: Less than 25% effect on nitrogen or carbon transformation processes in soil.

### Similar formulation

#### Aquatic toxicity, invertebrates

##### **Water flea (*Daphnia magna*):**

Acute toxicity, 48 hours, static, EC50: 8.0 mg/L  
Moderately toxic.

### N-(phosphonomethyl)glycine; { glyphosate }

#### Avian toxicity

##### **Bobwhite quail (*Colinus virginianus*):**

Dietary toxicity, 5 days, LC50: > 4,640 mg/kg diet  
No more than slightly toxic.

##### **Mallard duck (*Anas platyrhynchos*):**

Dietary toxicity, 5 days, LC50: > 4,640 mg/kg diet  
No more than slightly toxic.

##### **Bobwhite quail (*Colinus virginianus*):**

Acute oral toxicity, single dose, LD50: > 3,851 mg/kg body weight  
Practically non-toxic.

#### Bioaccumulation

##### **Bluegill sunfish (*Lepomis macrochirus*):**

Whole fish: BCF: < 1  
No significant bioaccumulation is expected.



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### **Dissipation**

#### **Soil, field:**

Half life: 2 - 174 days  
Koc: 884 - 60,000 L/kg  
Adsorbs strongly to soil.

#### **Water, aerobic:**

Half life: < 7 days

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## **13. DISPOSAL CONSIDERATIONS**

### **Product**

Keep out of drains, sewers, ditches and water ways.  
Recycle if appropriate facilities/equipment available.  
Burn in proper incinerator.  
Follow all local/regional/national/international regulations.

### **Container**

See the individual container label for disposal information.  
Emptied containers retain vapour and product residue.  
Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.  
Empty packaging completely.  
Triple or pressure rinse empty containers.  
Do NOT contaminate water when disposing of rinse waters.  
Ensure packaging cannot be reused.  
Do NOT re-use containers.  
Store for collection by approved waste disposal service.  
Recycle if appropriate facilities/equipment available.  
Follow all local/regional/national/international regulations.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

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## **14. TRANSPORT INFORMATION**

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

Not hazardous under the applicable DOT, ICAO/IATA, IMO, TDG and Mexican regulations.

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## **15. REGULATORY INFORMATION**

PCPA registered.

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## **16. OTHER INFORMATION**

The information given here is not necessarily exhaustive but is representative of relevant, reliable data.  
Follow all local/regional/national/international regulations.  
Please consult supplier if further information is needed.  
In this document the British spelling was applied.  
|| Significant changes versus previous edition.

Full denomination of most frequently used acronyms. BCF (Bioconcentration Factor), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), EC50 (50% effect concentration), ED50 (50% effect dose), I.M. (intramuscular), I.P. (intraperitoneal), I.V. (intravenous), Koc (Soil adsorption coefficient), LC50 (50% lethality concentration), LD50 (50% lethality dose), LDLo (Lower limit of lethal dosage), LEL (Lower Explosion Limit), LOAEC (Lowest Observed Adverse Effect Concentration), LOAEL (Lowest Observed Adverse Effect Level), LOEC (Lowest Observed Effect Concentration), LOEL (Lowest Observed Effect Level), MEL (Maximum Exposure limit), MTD (Maximum Tolerated Dose),

NOAEC (No Observed Adverse Effect Concentration), NOAEL (No Observed Adverse Effect Level), NOEC (No Observed Effect Concentration), NOEL (No Observed Effect Level), OEL (Occupational Exposure Limit), PEL (Permissible Exposure Limit), PII (Primary Irritation Index), Pow (Partition coefficient n-octanol/water), S.C. (subcutaneous), STEL (Short-Term Exposure Limit), TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE Pest Management Regulatory (PMRA)- APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products are regulated by product labeling and provincial legislation, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the PMRA-approved label.

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