

**Product Name:**

**Guardian® Plus II Herbicide**

Guardian® Plus II Herbicide is a combination package containing two products. Attached are the component product MSDS which make up Guardian® Plus II Herbicide.

Guardian® Plus WDG Blend      PCP # 31494  
MSDS Date: 02/12/2016  
Ref: 130000051742

Polaris\*                              PCP # 29479  
MSDS Date: 01/04/2016  
Ref: 130000029146

Since Guardian Plus WDG Blend and Polaris do not interact chemically when combined, the mixture can therefore be assumed to have the same properties and hazards as the individual components. Please review the attached MSDS, for a full and complete understanding of the hazards associated with each product before use.

**Manufacturer/Distributor:**

E.I. du Pont Canada Company  
1919 Minnesota Court  
Mississauga, Ontario, L5N 0C9

**Telephone Numbers:**

Product Information: 1-800-667-3925  
Medical Emergency: 1-800-441-3637 (24 Hours)  
Preparation Date: January 18, 2017

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

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : GUARDIAN PLUS WDG Blend  
Tradename/Synonym : DPX-UVK76

SDS Number : 130000051742

Product Use : Herbicide  
Manufacturer : E.I. du Pont Canada Company  
P.O. Box 2200, Streetsville  
Mississauga, ON  
L5M 2H3  
Canada

Product Information : 1-800-387-2122  
Medical Emergency : 1-800-441-3637 (24 hours)

**SECTION 2. HAZARDS IDENTIFICATION**

## Potential Health Effects

## Eyes

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

## Ingestion

Chlorimuron ethyl : Gross overexposure may cause: Abnormal decrease in number of red blood cells (anaemia) which could produce tiredness, rapid heartbeat, dizziness, pale skin, leg cramps, shortness of breath.

## Repeated exposure

Flumioxazin : May impair fertility. May cause harm to the unborn child.

## Carcinogenicity

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

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

Component	CAS-No.	Concentration
Flumioxazin	103361-09-7	40.59 %
Chlorimuron ethyl	90982-32-4	5.14 %
Other Ingredients		54.27 %

Present as an impurity in the clay component of this product:

Titanium Dioxide		<1 %
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**SECTION 4. FIRST AID MEASURES**

- Skin contact : Take off all contaminated clothing immediately. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- Eye contact : Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
- Inhalation : Move to fresh air. Artificial respiration and/or oxygen may be necessary. Call a poison control center or doctor for treatment advice.
- Ingestion : Call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Do not give anything by mouth to an unconscious person.



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General advice : Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**SECTION 5. FIREFIGHTING MEASURES**

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

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

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

- Safeguards (Personnel) : Evacuate personnel to safe areas. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Wear suitable protective equipment.
- Spill Cleanup : Sweep up and shovel into suitable containers for disposal.
- Accidental Release Measures : Prevent material from entering sewers, waterways, or low areas. Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

**SECTION 7. HANDLING AND STORAGE**

- Handling (Personnel) : Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/PPE immediately if material gets inside. Wash thoroughly and put on clean clothing. Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.



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- Handling (Physical Aspects) : Keep away from heat and sources of ignition.
- Storage : Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in original container. Store in a cool, dry place. Keep out of the reach of children.

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

- Engineering controls : Ensure adequate ventilation.
- Personal protective equipment  
Protective measures : Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them. Use this product in accordance with its label.
- Exposure Guidelines  
Exposure Limit Values

None established.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

- Form : granules

**SECTION 10. STABILITY AND REACTIVITY**

- Stability : Stable at normal temperatures and storage conditions.
- Conditions to avoid : None reasonably foreseeable.
- Incompatibility : None reasonably foreseeable.
- Hazardous reactions : Polymerization will not occur.


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**SECTION 11. TOXICOLOGICAL INFORMATION**
**Flumioxazin**

- Dermal LD50 : > 2,000 mg/kg , Rat  
 Oral LD50 : > 5,000 mg/kg , Rat  
 Skin irritation : No skin irritation, Rabbit  
 Eye irritation : No eye irritation, Rabbit  
 Minimal effects that do not meet the threshold for classification.  
 Skin sensitization : Does not cause skin sensitisation., Guinea pig  
 Repeated dose toxicity : Ingestion  
 Rat

No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification., altered hematology, Organ weight changes

Ingestion  
Dog

No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification., altered hematology, Organ weight changes

- Carcinogenicity : Animal testing did not show any carcinogenic effects.  
 Mutagenicity : Animal testing did not show any mutagenic effects.  
 Did not cause genetic damage in cultured bacterial cells.  
 Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others.  
 Reproductive toxicity : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.  
 Teratogenicity : Animal testing showed effects on embryo-foetal development at levels below those causing maternal toxicity.

**Chlorimuron ethyl**

- Dermal LD50 : > 5,000 mg/kg , Rabbit  
 The result is based on a weight of evidence approach.



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Oral LD50	:	4,102 mg/kg , Rat
Inhalation 4 h LC50	:	> 5 mg/l , Rat
Skin irritation	:	No skin irritation, Guinea pig
Eye irritation	:	No eye irritation, Rabbit
Skin sensitization	:	Does not cause skin sensitisation., Guinea pig
Repeated dose toxicity	:	The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.  Dermal Rabbit  No toxicologically significant effects were found.  Oral Dog  No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification., Abnormal decrease in number of red blood cells  Oral Rat  No adverse effect has been observed in chronic toxicity tests.
Carcinogenicity	:	Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects.
Reproductive toxicity	:	No toxicity to reproduction
Teratogenicity	:	Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Titanium Dioxide



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Carcinogenicity : Based upon all available study results, DuPont scientists conclude that titanium dioxide will not cause lung cancer or chronic respiratory diseases in humans at concentrations experienced in the workplace.

### SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity  
Flumioxazin

96 h LC50	:	Cyprinus carpio (Carp) > 1.3 mg/l
72 h EC50	:	Desmodesmus subspicatus (green algae) 0.0006 mg/l
72 h NOEC	:	Desmodesmus subspicatus (green algae) 0.00023 mg/l
48 h EC50	:	Daphnia magna (Water flea) 17 mg/l

Chlorimuron ethyl

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) > 1,000 mg/l
96 h LC50	:	Lepomis macrochirus (Bluegill sunfish) > 100 mg/l
72 h EC50	:	Pseudokirchneriella subcapitata (green algae) 0.001 mg/l
48 h EC50	:	Daphnia magna (Water flea) > 1,000 mg/l

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

### SECTION 13. DISPOSAL CONSIDERATIONS

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

Container disposal: : Container Refilling and Disposal:





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Refer to the product label for instructions.  
Do not transport if this container is damaged or leaking.

**SECTION 14. TRANSPORT INFORMATION**

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

Not regulated as a hazardous material by TDG.

**SECTION 15. REGULATORY INFORMATION**

PCP Registration # : 31494

**SECTION 16. OTHER INFORMATION**

MSDS preparation date : 02/12/2016

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<sup>®</sup> Registered trademark of E.I. du Pont de Nemours and Company

Contact person : E.I. DuPont Canada Company, Mississauga, Ontario, L5M 2H3



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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.



## NUFARM AGRICULTURE INC.

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**SUPPLIED BY:**

Nufarm Agriculture Inc.  
5507 1st Street, SE  
Calgary, AB T2H 1H9  
Phone Number: (403)-253-8471  
Fax Number: (403)-253-8478

**MANUFACTURED BY:**

Nufarm Agriculture Inc.  
5507 1st Street, SE  
Calgary, AB T2H 1H9  
Phone Number: (403)-253-8471  
Fax Number: (403)-253-8478

**PRODUCT:****Polaris Liquid Herbicide****PCP NUMBER:**

29479

**DATE PREPARED:**

January 4, 2016

**PREPARER:**

Nufarm Agriculture Inc.; Regulatory Affairs &amp; Research Department

**CHEMICAL FAMILY/USE:**

Herbicide

**FORMULA:** $C_6H_{17}N_2O_5P$ **CHEMICAL SYNONYMS:**

Glyphosate, isopropylamine salt; Glyphosate, IPA salt; N-(phosphonomethyl) glycine, isopropylamine salt

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	%	CAS NO.
Glyphosate, N-(phosphonomethyl) glycine, in the form of its isopropylamine salt	40 – 42% w/w salt (30 – 32 % w/w acid)	38641-94-0 (as the salt) (1071-83-6 as the acid)

### 3. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** CAUTION-IRRITANT. Keep out of reach of children. This product causes moderate eye irritation. HARMFUL IF SWALLOWED. Avoid contact with eyes or prolonged contact with skin.

**EFFECTS OF ACUTE EXPOSURE:**

**INGESTION:** This product is no more than slightly toxic based on toxicity studies. No significant adverse health effects are expected to develop if only small amounts (less than a mouthful ) are swallowed. Ingestion of similar formulations has been reported to produce gastrointestinal discomfort with irritation of the mouth, nausea, vomiting and diarrhea.

**SKIN CONTACT:** This product is no more than slightly toxic and no more than slightly irritating based on toxicity studies. Prolonged contact may cause dermal irritation.

**INHALATION:** This product is no more than slightly toxic if inhaled based on toxicity studies.

**EYE CONTACT:** This product may cause eye irritation.

**MEDICAL CONDITIONS AGGRAVATED:** None Known.

**TOXICOLOGICAL EFFECTS:** See toxicological data in Section 11.

**PRINCIPLE ROUTES OF EXPOSURE:** Skin contact and inhalation.

**TOXICOLOGICALLY SYNERGISTIC MATERIALS:** None known.

**OTHER:** None known.



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### 4. FIRST AID MEASURES

**If swallowed:** Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water or milk if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

**If in eyes:** 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.

**If on skin or clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

**If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

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

### 5. FIRE FIGHTING MEASURES

**FLASH POINT:** .....N/A

**CONDITIONS OF FLAMMABILITY:** ..... Product not flammable

**FLAMMABLE LIMITS IN AIR - Upper (%):**.....N/E

**FLAMMABLE LIMITS IN AIR - Lower (%):** .....N/E

**AUTOIGNITION TEMPERATURE:** .....N/E

**SENSITIVITY TO MECHANICAL IMPACT (Y/N):** NA. No sensitivity expected based on long handling history.

**SENSITIVITY TO STATIC DISCHARGE:** .....NA. No sensitivity expected based on long handling history.

**EXTINGUISHING MEDIA:** Water fog, alcohol foam, carbon dioxide, dry chemical.

**SPECIAL FIRE FIGHTING PROCEDURES:** Fire fighters and others exposed to products of combustion should wear self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use. Minimize and contain water runoff.

### 6. ACCIDENTAL RELEASE MEASURES

**ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:** Use safety equipment and procedures appropriate to the size of the spill. Keep unnecessary people away. Avoid runoff to natural waters and sewers. Surround and absorb spills with inert material such as perlite, sawdust, clay granules, vermiculite, sand or dirt. (Soak up small amounts of spill with absorbent clays.) Contain all affected material in a closed, labeled container for proper disposal. Isolate from other waste materials. Clean contaminated area such as hard surfaces with detergent and water, collecting cleaning solution for proper disposal. Large spills to soil or similar surfaces may necessitate removal of top soil.

### 7. HANDLING AND STORAGE

#### **PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:**

**KEEP OUT OF REACH OF CHILDREN.** May cause eye irritation. Harmful if swallowed. Avoid contact with eyes or prolonged contact with skin. For good hygiene practice, wear a long-sleeved shirt, long pants and chemical resistant gloves during mixing, loading, cleanup or repair activities. Spray solutions of this product should be mixed, stored and applied only in stainless steel, aluminum, fibreglass, plastic and plastic-lined steel containers. **DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS.** This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas, which may form a highly



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combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

### Storage:

Avoid contamination of seed, feed, and foodstuffs. Soak up small amounts of spill with absorbent clays. Product is stable under normal conditions of storage and handling for at least 5 years. Store in a cool, well-ventilated place away from seed, feed, foodstuffs, reducing agents and acids.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### EXPOSURE LIMITS:

Hazardous Ingredients	TWA*	ACGIH TLV®	STEL	Units
Glyphosate IPA salt	N/E	N/E	N/E	NAp

\*8-hour TWA unless otherwise noted

**ENGINEERING CONTROLS:** Undiluted product should be used in a well ventilated area. General ventilation with a good source of make-up air recommended as minimum for indoor situations.

**RESPIRATORY PROTECTION EQUIPMENT:** For Handling of the Undiluted Product: Undiluted product is not likely to present an airborne exposure concern during normal handling. If there is an accidental discharge of the material during manufacture or handling that produces a heavy vapor or mist, workers should use NIOSH/MSHA approved equipment. Use an approved pesticide respirator if ventilation is not adequate or exposure to sprays, mists or vapours is likely. In work situations where an air purifying respirator is appropriate to be used, use of a full face respirator equipped with purifying elements for protection against organic vapor and dust/mist approved for pesticides is recommended. Use cartridges or canister with NIOSH/MSHA approval. Full facepiece replaces the need for chemical goggles. Observe respirator use limitations specified by the manufacturers and NIOSH/MSHA.

For Application of Product Diluted in accordance with label instructions: Respirators are not required for applications of use – dilutions of this product.

**PROTECTIVE GLOVES:** All types of impervious gloves for handling chemicals are acceptable, provided that they can be cleaned.

**EYE AND FACE PROTECTION:** Wear chemical splash goggles during mixing/pouring operations or other activities in which eye contact with undiluted product is likely to occur.

**OTHER PROTECTIVE EQUIPMENT:** Use other equipment appropriate to specific situation.

**VENTILATION:** Use in well ventilated area. No special requirements apply to normal outdoor use.

**SKIN PROTECTION:** Wear appropriate protective clothing to prevent skin contact. Long sleeved shirt, long pants, socks and shoes suggested as minimum work clothing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**NOTE:** Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

**BOILING POINT:**..... NA. Expected to be similar to water: >100°C.

**VAPOR PRESSURE:**..... Glyphosate negligible. Product expected to be similar to water.

**VAPOR DENSITY (air = 1):**..... NA.

**FREEZING POINT:**..... NA. Expected to be similar to water: 0°C.

**MELTING POINT:**..... NA. Glyphosate 200°C with decomposition.

**PHYSICAL STATE:**..... Viscous liquid

**ODOUR:**..... Odorless



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**COLOUR:** ..... Clear with yellow tint.  
**VISCOSITY:** ..... 29.5 cps @20C  
**ODOR THRESHOLD (ppm):** ..... NA  
**EVAPORATION RATE (butyl acetate = 1):** NA  
**SPECIFIC GRAVITY (water = 1):** ..... 1.16 @ 20°C  
**DENSITY @ 20°C:** ..... 1.16 g/ml  
**pH:** ..... 4.8  
**SOLUBILITY IN WATER (20°C):** ..... Soluble.  
**COEFFICIENT OF WATER/OIL DISTRIBUTION:** NA. Product water soluble.

### 10. STABILITY AND REACTIVITY

**STABILITY:** Product is stable under normal conditions of storage and handling. Store in a cool, well-ventilated place away from foodstuffs, reducing agents and acids.  
**HAZARDOUS POLYMERIZATION:** Will not occur. This product can react with caustic (basic) materials to liberate heat. This is not a polymerization but rather a chemical neutralization in an acid base reaction.  
**HAZARDOUS THERMAL DECOMPOSITION/COMBUSTION PRODUCTS:** Carbon monoxide (CO), phosphorous oxides (P<sub>x</sub>O<sub>y</sub>), nitrogen oxides (NO<sub>x</sub>).  
**INCOMPATIBILITY (MATERIALS TO AVOID):** Avoid contact with strong acids and bases, galvanized steel, unlined mild steel. See Section 7.  
**CONDITIONS TO AVOID:** None known.

### 11. TOXICOLOGICAL INFORMATION

Data are from laboratory studies conducted on this or similar products:

**ACUTE ORAL LD<sub>50</sub> (mg/kg):** ..... > 5,000 (Rat)  
**ACUTE DERMAL LD<sub>50</sub> (mg/kg):** ..... > 5,000 (Rat)  
**ACUTE INHALATION LC<sub>50</sub> (mg/l):** ..... > 2.05 mg/l (Rat 4-hr exp.)

#### OTHER:

**Eye Irritation:** Rabbits; moderately irritating  
**Skin Irritation:** Rabbits 4-hr exp.; slightly irritating  
**Dermal Sensitization:** Guinea Pig; Non-sensitizer

**Components:** Data from laboratory studies and from the scientific literature on components of this product:

#### ISOPROPYLAMINE SALT OF GLYPHOSATE:

Data from studies with formulation comprised of 62% isopropylamine salt of glyphosate (MON 0139) indicate the following:

In repeat dosing studies (6-month), dogs fed MON 0139 exhibited slight weight changes. Following repeated skin exposure (30 weeks) to MON 0139, skin irritation was the primary effect in rabbits.

Additional toxicity information is available on glyphosate, the active herbicidal ingredient of MON 0139. Following repeated exposures (90-days) to glyphosate in their feed, decreased weight gains were noted at the highest test level in mice, while no treatment-related effects occurred in rats. Following repeated skin exposure (3 weeks) to glyphosate, slight skin irritation was the primary effect observed in rabbits. No skin allergy was observed in guinea pigs following repeated skin exposure. There was no evidence of effects on the nervous system, including delayed effects in chickens (repeat oral doses) or cholinesterase inhibition in rats (single oral doses). Reduced body weight gain and effects on liver tissues were observed at the high-dose level in one long-term (2 year) feeding study with rats, while no treatment-related effects occurred in a second study. No adverse effects were observed in feeding studies with dogs. Glyphosate did not produce tumors in any of these studies. Based on the results from the chronic studies, USEPA has classified glyphosate in category E (evidence of non-carcinogenicity for humans). No birth defects were noted in rats and rabbits given glyphosate orally



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during pregnancy, even at amounts which produced adverse effects on the mothers. Glyphosate was fed continuously to rats at very high dose levels for 2 successive generations. Toxicity was reported in offspring from the high dose, a level which also produced adverse effects on the mothers. In a 3 generation study conducted at lower dose levels, no effects were seen on the ability of male or female rats to reproduce. Glyphosate has produced no genetic changes in a variety of standard tests using animals and animal or bacterial cells.

### SURFACTANT:

The surfactant component of Polaris Liquid Herbicide is reported to cause irritation to the eyes and skin and may contribute to the irritation potential reported for this herbicide. Ingestion may produce gastrointestinal irritation, nausea, vomiting and diarrhea.

## 12. ECOLOGICAL INFORMATION

**ECOTOXICOLOGICAL INFORMATION:** Data are from studies conducted on this or similar products unless noted.

This product has been shown to be slightly to moderately toxic in aquatic studies:

<b>96 HOUR LC<sub>50</sub> (mg/L):</b>	86 (Rainbow Trout)
<b>96 HOUR LC<sub>50</sub> (mg/L):</b>	120 (Bluegill Sunfish)
<b>48 HOUR LC<sub>50</sub> (mg/L):</b>	780 (Daphnia magna)

This product has been shown to be practically non-toxic to avian species following subacute dietary exposure.

<b>8-Day DIETARY LC<sub>50</sub> (ppm):</b>	> 4500 (Bobwhite Quail)
<b>8-Day DIETARY LC<sub>50</sub> (ppm):</b>	> 4500 (Mallard Duck)

**CHEMICAL FATE INFORMATION:** Glyphosate is rapidly and strongly adsorbed to soil. It has a soil half-life of approximately 47 days, but the adsorptive characteristic negates herbicidal activity almost immediately.

## 13. DISPOSAL CONSIDERATIONS

**DISPOSAL METHOD:** For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Disposal should be made in accordance with federal, provincial and local regulations. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean up of spills.

Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed. **DO NOT CUT OR WELD ON OR NEAR THIS CONTAINER.**

Do not reuse this container for any purpose. If applicable, return container in accordance with return program. If a recyclable container, dispose of at a container collection site.

Contact local distributor, dealer or municipality for the location of the nearest collection site.

Before taking the container to the collection site, triple or pressure rinse the empty container adding rinsings to spray tank, and make container unsuitable for further use. If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

## 14. TRANSPORT INFORMATION

**CANADIAN TDG DESCRIPTION (Road & Rail):** None. Contact manufacturer for updates to transport information.

## 15. REGULATORY INFORMATION



## NUFARM AGRICULTURE INC.

**WHMIS HAZARD CLASS:** D2B Toxic Material

**WHMIS TRADE SECRET:** Exempt. (This product is regulated under the Pest Control Products Act - WHMIS exempt.)

**CANADIAN INVENTORY:** This product is currently exempt from CEPA.

**HAZARD RATING SYSTEMS: HMIS:** Not Available

**National Fire Protection Association (NFPA) Hazard Rating:**

**Rating for this product: Health: 1      Flammability: 1      Reactivity: 0**  
Hazards Scale: 0 = Minimal      1 = Slight      2 = Moderate      3 = Serious      4 = Severe

### 16. OTHER INFORMATION

**REVISIONS:**

The following has been revised since the last issue of this MSDS: Section 1 revision.

**ADDITIONAL INFORMATION:**

Abbreviations used throughout the MSDS are: NA = Not available

N/Ap = Not applicable

N/E = None Established.

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

Company references and data on substantially similar products utilized in preparation of the MSDS.

**\*\*\*END OF MSDS\*\*\***