

<b>Monsanto Canada</b> Material Safety Data Sheet Commercial Product
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### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name**

Vision®

**PCP Reg. No.**

19899

**Product use**

Herbicide

**Chemical name**

Not applicable.

**Synonyms**

None.

**Company**

Monsanto Canada, 67 Scurfield Boulevard, Winnipeg, MB, R3Y 1G4

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

**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).

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### 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Active ingredient**

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

**Composition**

COMPONENT	CAS No.	% by weight (approximate)
Isopropylamine salt of glyphosate	38641-94-0	41
Other ingredients		59

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

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### 3. HAZARDS IDENTIFICATION

**Emergency overview**

**Appearance and odour (colour/form/odour):** Amber - Brown / Liquid, (viscous) / Slight

|| CAUTION!  
|| MAY CAUSE EYE IRRITATION  
|| MAY BE HARMFUL IF SWALLOWED

**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**

Not expected to produce significant adverse effects when recommended use instructions are followed.

**Inhalation, short term**

Not expected to produce significant adverse effects when recommended use instructions are followed.

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

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#### **4. FIRST AID MEASURES**

##### **Eye contact**

Immediately flush with plenty of water.  
If there are persistent symptoms, obtain medical advice.

##### **Skin contact**

Take off contaminated clothing, wristwatch, jewellery.  
Wash affected skin with plenty of water.  
Wash clothes and clean shoes before re-use.  
If there are persistent symptoms, obtain medical advice.

##### **Inhalation**

Remove to fresh air.

##### **Ingestion**

Immediately offer water to drink.  
Do NOT induce vomiting unless directed by medical personnel.  
If symptoms occur, get medical attention.

##### **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**

None.

##### **Extinguishing media**

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

##### **Unusual fire and explosion hazards**

None.  
Minimise use of water to prevent environmental contamination.  
Environmental precautions: see section 6.

##### **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**

##### **Personal precautions**

Use personal protection recommended in section 8.

##### **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:**

Flush spill area with water.

**LARGE QUANTITIES:**

Absorb in earth, sand or absorbent material.

Dig up heavily contaminated soil.

Collect in containers for disposal.

Refer to section 7 for types of containers.

Flush residues with small quantities of water.

Minimise use of water to prevent environmental contamination.

Refer to section 13 for disposal of spilled material.

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## 7. HANDLING AND STORAGE

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

**Handling**

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 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, aluminium, fibreglass, plastic, glass lining

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.

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.

Minimum shelf life: 5 years.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Airborne exposure limits**

<b>Components</b>	<b>Exposure Guidelines</b>
Isopropylamine salt of glyphosate	No specific occupational exposure limit has been established.
Other ingredients	No specific occupational exposure limit has been established.

**Engineering controls**

Have eye wash facilities immediately available at locations where eye contact can occur.

### Eye protection

If there is potential for contact:  
Wear chemical goggles.

### Skin protection

If repeated or prolonged contact:  
Wear chemical resistant gloves.

### Respiratory protection

No special requirement when used as recommended.

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

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## 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:	Amber - Brown
Form:	Liquid, (viscous)
Odour:	Slight
Flash point:	None.
Specific gravity:	1.1743 20 °C / 15.6 °C
Solubility:	Water: Soluble
pH:	4.9
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.

### Hazardous decomposition

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

### Materials to avoid/Reactivity

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

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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 (limit test):** > 5,000 mg/kg body weight  
Other effects: breathing difficulty, decreased activity, soft stools  
Practically non-toxic.  
FIFRA category IV.  
No mortality.

#### Acute dermal toxicity

**Rat, LD50 (limit test):** > 5,000 mg/kg body weight

Target organs/systems: none

Other effects: none

Practically non-toxic.

FIFRA category IV.

No mortality.

**Skin irritation**

**Rabbit, 6 animals, OECD 404 test:**

Days to heal: 1

Primary Irritation Index (PII): 0.4/8.0

Other effects: none

Essentially non irritating.

FIFRA category IV.

**Eye irritation**

**Rabbit, 6 animals, OECD 405 test:**

Days to heal: 10

Moderate irritation.

FIFRA category II.

**Acute inhalation toxicity**

**Rat, LC50, 4 hours, aerosol:** 2.6 mg/L

Target organs/systems: none

Other effects: breathing difficulty, decreased activity, local effects

Practically non-toxic.

FIFRA category IV.

**Skin sensitization**

**Guinea pig, 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**

**Mouse, oral, 24 months:**

NOEL tumour: > 30,000 mg/kg diet

NOAEL toxicity: ~ 5,000 mg/kg diet

Tumours: none

Target organs/systems: liver

Other effects: decrease of body weight gain, histopathologic effects

**Rat, oral, 24 months:**

NOEL tumour: > 20,000 mg/kg diet

NOAEL toxicity: ~ 8,000 mg/kg diet

Tumours: none

Target organs/systems: eyes

Other effects: decrease of body weight gain, histopathologic effects

**Toxicity to reproduction/fertility**

**Rat, oral, 2 generations:**

NOAEL toxicity: 10,000 mg/kg diet  
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**

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

Acute toxicity, 96 hours, flowthrough, LC50: 5.8 mg/L  
Moderately toxic.

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

Acute toxicity, 96 hours, flowthrough, LC50: 8.2 mg/L  
Moderately toxic.

#### **Aquatic toxicity, invertebrates**

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

Acute toxicity, 48 hours, static, EC50: 11 mg/L  
Slightly toxic.

#### **Aquatic toxicity, algae/aquatic plants**

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

Acute toxicity, 96 hours, static, EC50: 2.6 mg/L  
Moderately toxic.

##### **Duckweed (*Lemna minor*):**

Acute toxicity, 7 days, static, EC50: > 6 mg/L

#### **Avian toxicity**

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

Dietary toxicity, 5 days, LC50: > 5,620 mg/kg diet  
Practically non-toxic.

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

Dietary toxicity, 5 days, LC50: > 5,620 mg/kg diet  
Practically non-toxic.

#### **Arthropod toxicity**

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

Oral/contact, 48 hours, LD50: > 326 µg/bee

Practically non-toxic.

**Soil organism toxicity, invertebrates**

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

Acute toxicity, 14 days, LC50: > 5,000 mg/kg dry soil

Practically non-toxic.

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

**Bioaccumulation**

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

Whole fish: BCF: < 1

No significant bioaccumulation is expected.

**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**

Excess product may be disposed of according to label instructions.

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 labelled safeguards until container is cleaned, reconditioned or destroyed.

Empty packaging completely.

Triple or pressure rinse empty containers.

Rinsate may be disposed of by agricultural use according to label instructions.

Recycle if appropriate facilities/equipment available.

Do NOT contaminate water when disposing of rinse waters.

Ensure packaging cannot be reused.

Follow all local/regional/national/international regulations.

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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.

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)

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