

Monsanto Canada
Safety Data Sheet
Commercial Product

1. PRODUCT AND COMPANY IDENTIFICATION

Product name

Vision® Silviculture Herbicide

PCP Reg. No.

19899

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: TS-SAFETYDATASHEET@DOMINO.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): Amber - Brown / Liquid, (viscous) / Slight

CAUTION!

MAY CAUSE EYE IRRITATION

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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Active ingredient

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

Composition

COMPONENT	CAS No.	% by weight (approximate)
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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.

4. FIRST AID MEASURES

Use personal protection recommended in section 8.

Eye contact

Immediately flush with plenty of water.
Continue for at least 15 minutes.
Obtain medical attention from an eye specialist.

Skin contact

Immediately wash affected skin with plenty of water.
Take off contaminated clothing, wristwatch, jewellery.
Wash clothes and clean shoes before re-use.

Ingestion

Call poison control center 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 the poison center or doctor. 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.

5. FIRE-FIGHTING MEASURES

Flash point

None.

Extinguishing media

Recommended: Water, foam, dry chemical, carbon dioxide (CO₂)

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 (P_xO_y), nitrogen oxides (NO_x)

Fire fighting equipment

Self-contained breathing apparatus.
Equipment should be thoroughly decontaminated after use.

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.

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

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 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, 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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne exposure limits

Components	Exposure Guidelines
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.

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
Odour:	Slight
Form:	Liquid, (viscous)
Physical form changes (melting, boiling, etc.):	
Melting point:	Not available.
Flash point:	None.
Explosive properties:	No data.
Auto ignition temperature:	No data.
Specific gravity:	1.1743 20 °C / 15.6 °C
Vapour pressure:	Not applicable.
Vapour density:	Not applicable.
Evaporation rate:	No data.
Dynamic viscosity:	Not available.
Kinematic viscosity:	Not available.
Density:	Not available.
Solubility:	Water: Soluble
pH:	4.9
Partition coefficient:	log Pow: -3.2 @ 25 °C (glyphosate)

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.

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.

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

Mouse, oral, 24 months:

NOAEL toxicity: ~ 5,000 mg/kg diet
Target organs/systems: liver
Other effects: decrease of body weight gain, histopathologic effects
NOEL tumour: > 30,000 mg/kg diet
Tumours: none

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 mg/kg diet
Tumours: none

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

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 (frond number): 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: > 338 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.

Soil organism toxicity, microorganisms

Nitrogen transformation test:

24.45 kg/ha, 28 days: No effect on nitrogen transformation. No effect on soil microorganisms.

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

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.

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

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.

15. REGULATORY INFORMATION

PCPA registered.

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)

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