

Monsanto Canada
Safety Data Sheet
Domestic Product

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Product identifier

**Roundup® Ready-to-Use Grass & Weed Control with Fast Act™ Foam Solution
Non-Selective Herbicide**

1.1.1. **Chemical name**
Not applicable.

1.1.2. **Synonyms**
None.

1.1.3. **PCP Reg. No.**
24299

1.2. **Product use**
Herbicide

1.3. **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

1.4. **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

2.1. **Classification**
Classification according to the Hazardous Products Regulations, 2015 Workplace Hazardous Materials
Information System (WHMIS 2015)
Not classified as hazardous.

2.2. **Label elements**
Hazard pictogram/pictograms
Not Applicable
Signal word
Not applicable.
Hazard statement/statements
Hxxx Not applicable.
Precautionary statement/statements
Pxxx Not applicable.

2.3. Other hazards
Not applicable.

2.4. Appearance and odour (colour/form/odour)
Clear-Hazy /Liquid / Slight, Soapy

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance: Not applicable.

3.2. Mixture: Yes.

Composition/information on ingredients

Components	CAS No.	Concentration
Isopropylamine salt of glyphosate	38641-94-0	0.9600 %
Water and minor formulating ingredients		99.0400 %

The specific chemical identity and/or concentration range is being withheld because it is trade secret information of Monsanto Company.

Active ingredient

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

4. FIRST AID MEASURES

Use personal protection recommended in section 8.

4.1. Description of first aid measures

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

4.1.1. 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.

4.1.2. 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.

4.1.3. 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.

4.1.4. Ingestion

Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water 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.

4.2. Most important symptoms and effects, both acute and delayed

4.2.1. Potential health effects

Likely routes of exposure: Skin contact, eye contact

Eye contact, short term: Not expected to produce significant adverse effects when recommended use instructions are followed.

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.

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

4.3. Indication of any immediate medical attention and special treatment needed

4.3.1. Advice to doctors

This product is not an inhibitor of cholinesterase.

4.3.2. Antidote

Treatment with atropine and oximes is not indicated.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

5.1.1. Recommended: Water, Foam, Dry chemical, Carbon dioxide (CO₂)

5.2. Special hazards

5.2.1. Unusual fire and explosion hazards

None. Environmental precautions: see section 6.

5.2.2. Hazardous products of combustion

Carbon monoxide (CO), Phosphorus oxides (P_xO_y), Nitrogen oxides (NO_x)

5.3. Advice for firefighters

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

5.4. Flash point

Does not flash.

6. ACCIDENTAL RELEASE MEASURES

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

6.1. Personal precautions

Use personal protection recommended in section 8.

6.2. Environmental precautions

SMALL QUANTITIES: Low environmental hazard. **LARGE QUANTITIES:** Minimise spread. Keep out of drains, sewers, ditches and water ways.

6.3. 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.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Good industrial practice in housekeeping and personal hygiene should be followed. When using do not eat, drink or smoke. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash hands thoroughly after handling or contact. Thoroughly clean equipment after use. Wash contaminated clothing before re-use. Do not contaminate drains, sewers and water ways when disposing of equipment rinse water.

Emptied containers retain vapour and product residue. FOLLOW LABELLED WARNINGS EVEN AFTER CONTAINER IS EMPTIED.

7.2. Conditions for safe storage, including any incompatibilities

Compatible materials for storage: stainless steel, glass lining, fibreglass, Aluminium, plastic

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

Minimum storage temperature: 0 °C

Maximum storage temperature: 45 °C

Keep out of reach of children. Keep away from food, drink and animal feed. Keep only in the original container. Keep aqueous solutions away from direct sunlight. Protect from freezing. Partial crystallization may occur on prolonged storage below the minimum storage temperature. Minimum shelf life: 5 years.

7.3. Specific end use(s)

Not applicable.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Airborne exposure limits

Components	Exposure Guidelines
Isopropylamine salt of glyphosate	No specific occupational exposure limit has been established.
Water and minor formulating ingredients	No specific occupational exposure limit has been established.

8.2. Exposure controls

Engineering controls

No special requirement when used as recommended.

Eye protection:

No special requirement when used as recommended.

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.

9.1 Information on basic physical and chemical properties

Colour/colour range:	Clear - Hazy
Form:	Liquid
Odour:	Slight, Soapy
Odour threshold:	No data.
Physical form changes (melting, boiling, etc.):	
Freezing point:	0 °C
Boiling point:	No data.
Flash point:	Does not flash.
Explosive properties:	No data.
Auto ignition temperature:	No data.
Self-accelerating decomposition temperature (SADT):	No data.
Oxidizing properties:	No data.
Specific gravity:	1.01 @ 20 °C / 20 °C
Vapour pressure:	No significant volatility; aqueous solution.
Vapour density:	Not applicable.
Dynamic viscosity:	31 mPa·s @ 20 °C
Kinematic viscosity:	30 cSt @ 20 °C
Density:	1.01 g/cm ³ @ 20 °C
Solubility:	Water: Completely miscible.
pH:	6.8 - 7.3
Partition coefficient:	log Pow: < -3.2 @ 25 °C (Glyphosate)

9.2 Other information

Evaporation rate:	No data.
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10. STABILITY AND REACTIVITY

10.1. Reactivity

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

10.2. Chemical stability

Stable under normal conditions of handling and storage.

10.3. Possibility of hazardous reactions

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

10.4. Conditions to avoid

None

10.5. Incompatible materials

Incompatible materials for storage: galvanised steel, unlined mild steel, see section 10.
 Compatible materials for storage: see section 7.2.

10.6. Hazardous decomposition products

Hazardous products of combustion: see section 5.

11. TOXICOLOGICAL INFORMATION

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

11.1. Information on toxicological effects

Acute oral toxicity: Based on available data classification criteria are not met.

Acute dermal toxicity: Based on available data classification criteria are not met.

Acute inhalation toxicity: Based on available data classification criteria are not met.

Skin corrosion/irritation: Based on available data classification criteria are not met.

Eye corrosion/irritation: Based on available data classification criteria are not met.

Skin sensitization: Based on available data classification criteria are not met.

Respiratory sensitization: Based on available data classification criteria are not met.

Mutagenicity: Based on available data classification criteria are not met.

Carcinogenicity: Based on available data classification criteria are not met.

Reproductive/Developmental Toxicity: Based on available data classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure: Based on available data classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure: Based on available data classification criteria are not met.

Aspiration hazard: Based on available data classification criteria are not met.

Most important symptoms and effects, both acute and delayed

Potential health effects

Likely routes of exposure: Skin contact, eye contact

Eye contact, short term: Not expected to produce significant adverse effects when recommended use instructions are followed.

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.

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

If available, data obtained on similar products and/or on components are summarized below.

Similar formulation

Acute oral toxicity

Rat, LD50 (limit test): > 5,000 mg/kg body weight
Practically non-toxic. No mortality.

Acute dermal toxicity

Rat, LD50 (limit test): > 5,000 mg/kg body weight
Practically non-toxic. No mortality.

Skin irritation

Rabbit, 6 animals, OECD 404 test:

Redness, mean EU score: 0.00

Swelling, mean EU score: 0.00

No skin irritation.

Eye irritation

Rabbit, 6 animals, OECD 405 test:

Conjunctival redness, mean EU score: 0.11
Conjunctival swelling, mean EU score: 0.06
Corneal opacity, mean EU score: 0.00
Iris lesions, mean EU score: 0.00
Days to heal: 3
Essentially non irritating.

Acute inhalation toxicity

Rat, LC50, 4 hours, aerosol: > 10 mg/L

Practically non-toxic. Maximum attainable concentration.

Skin sensitization

Guinea pig, 3-induction Buehler test:

Positive incidence: 0 %
Negative.

N-(phosphonomethyl)glycine: {glyphosate acid}

Genotoxicity

Not genotoxic.

Carcinogenicity

Not carcinogenic in rats or mice.

Reproductive/Developmental Toxicity

Developmental effects in rats and rabbits only in the presence of significant maternal toxicity.
Reproductive effects in rats only in the presence of significant maternal toxicity.

12. ECOLOGICAL INFORMATION

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

If available, data obtained on similar products and/or on components are summarized below.

12.1 Toxicity

No data.

12.2 Persistence and degradability

No data.

12.3 Bioaccumulative potential

Refer to section 9 for partition coefficient data.

12.4 Mobility in soil

No data.

12.5 Results of PBT and vPvB assessment

No data.

12.6 Other adverse effects

No data.

12.7 Additional information

If available, data obtained on similar products and/or on components are summarized below.

Similar glyphosate formulation

Aquatic toxicity, fish

Golden orfe (*Leuciscus idus*):

Acute toxicity, 96 hours, static, LC50: 491 mg/L

Rainbow trout (*Oncorhynchus mykiss*):

Acute toxicity, 96 hours, static, LC50: 322 mg/L

Aquatic toxicity, invertebrates

Water flea (*Daphnia magna*):

Acute toxicity, 48 hours, static, EC50: 1,634 mg/L

Aquatic toxicity, algae/aquatic plants

Green algae (*Selenastrum capricornutum*):

Acute toxicity, 72 hours, static, EbC50 (biomass): 15 mg/L

Green algae (*Selenastrum capricornutum*):

Acute toxicity, 72 hours, static, NOEC: 4 mg/L

N-(phosphonomethyl)glycine: {glyphosate acid}

Avian toxicity

Bobwhite quail (*Colinus virginianus*):

Acute oral toxicity, single dose, LD50: > 3,851 mg/kg body weight

Arthropod toxicity

Honey bee (*Apis mellifera*):

Oral, 48 hours, LD50: 100 µg/bee

Honey bee (*Apis mellifera*):

Contact, 48 hours, LD50: > 100 µg/bee

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

13.1. Waste treatment methods

13.1.1. 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.

13.1.2. 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. Store for collection by approved waste disposal service. Ensure packaging cannot be reused. Do NOT re-use containers. 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.

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.

Transport of Dangerous Goods Regulations (TDG)

- 14.1 **UN No.:** Not applicable.
- 14.2 **Proper Shipping Name (Technical Name if required):** Not applicable.
- 14.3 **Transport hazard class:** Not applicable.
- 14.4 **Packing Group:** Not applicable.
- 14.5 **Environmental hazards:** DATA MUST BE ENTERED IN SPECIAL PROVISIONS FIELD
- 14.6 **Special precautions for the user:** Not applicable.

IMO

- 14.1 **UN No.:** Not applicable.
- 14.2 **Proper Shipping Name (Technical Name if required):** Not applicable.
- 14.3 **Transport hazard class:** Not applicable.
- 14.4 **Packing Group:** Not applicable.
- 14.5 **Environmental hazards:** DATA MUST BE ENTERED IN SPECIAL PROVISIONS FIELD
- 14.6 **Special precautions for the user:** Not applicable.
- 14.7 **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable.

IATA/ICAO

- 14.1 **UN No.:** Not applicable.
- 14.2 **Proper Shipping Name (Technical Name if required):** Not applicable.
- 14.3 **Transport hazard class:** Not applicable.
- 14.4 **Packing Group:** Not applicable.
- 14.5 **Environmental hazards:** DATA MUST BE ENTERED IN SPECIAL PROVISIONS FIELD
- 14.6 **Special precautions for the user:** Not applicable.

15. REGULATORY INFORMATION

15.1. Pest Management Regulatory Agency, Pest Control Products Act [PMRA PCPA]

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), STOT SE (Specific

Target Organ Toxicity, Single Exposure), STOT RE (Specific Target Organ Toxicity, Repeated Exposure), 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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