

<p><b>Monsanto Company, Lawn &amp; Garden Products</b> Safety Data Sheet Commercial Product</p>
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## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name**

**Roundup® Concentrate Poison Ivy Plus Tough Brush Killer**

**EPA Reg. No.**

71995-37

**Chemical name**

Not applicable.

**Synonyms**

None.

**Company**

Monsanto Company, Lawn & Garden Products, P.O. Box 418, Marysville, OH, 43041

**Telephone:** 1-800-246-7219

**E-mail:** TS-SAFETYDATASHEET@DOMINO.MONSANTO.COM

**Emergency numbers**

FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT Call CHEMTREC - Day or Night: 1-800-424-9300 toll free in the continental U.S., Puerto Rico, Canada, or Virgin Islands. For calls originating elsewhere: 703-527-3887 (collect calls accepted).

FOR MEDICAL EMERGENCY - Day or Night: 1-800-246-7219

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## 2. HAZARDS IDENTIFICATION

**Emergency overview**

**Appearance and odour (colour/form/odour):** Yellow / Liquid / Mild

CAUTION!

CAUSES MODERATE EYE 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**

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.

**OSHA Status**

This product is hazardous according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Active ingredient**

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

Triethylamine salt of 3,5,6-trichloro-2-pyridinyloxyacetic acid; {Triethylamine salt of triclopyr}

### Composition

COMPONENT	CAS No.	% by weight (approximate)
Isopropylamine salt of glyphosate	38641-94-0	18
Triethylamine salt of triclopyr	57213-69-1	2
Other ingredients		80

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.

### Eye contact

- Immediately flush with plenty of water.
- Continue for at least 15 minutes.
- If easy to do, remove contact lenses.
- If there are persistent symptoms, obtain medical advice.

### Skin contact

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

### Inhalation

- Remove to fresh air.

### 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, dry chemical, foam, carbon dioxide (CO<sub>2</sub>)

### Unusual fire and explosion hazards

- None.
- Environmental precautions: see section 6.

### Hazardous products of combustion

- Carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), phosphorus oxides (P<sub>x</sub>O<sub>y</sub>), hydrogen chloride (HCl)

### 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.

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

Avoid contact with eyes.

When using do not eat, drink or smoke.

Wash hands thoroughly after handling or contact.

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

Emptied packages retain product residue and dust.

Observe all labelled safeguards until container is cleaned, reconditioned or destroyed.

### Storage

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.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Airborne exposure limits

Components	Exposure Guidelines
Isopropylamine salt of glyphosate	No specific occupational exposure limit has been established.
Triethylamine salt of triclopyr	TLV (ACGIH): No specific occupational exposure limit has been established. Manufacturer suggested exposure limit: 2 mg/m <sup>3</sup> : skin, Skin notation means that skin absorption of this material may add to the overall exposure., The exposure limit indicated is for triclopyr.
Other ingredients	No specific occupational exposure limit has been established.

### Engineering controls

Provide adequate ventilation to keep airborne concentration below exposure limits.

### Eye protection

If there is significant potential for contact:  
Wear chemical goggles.

### Skin protection

No special requirement when used as recommended.

### 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.

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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:	Yellow
Odour:	Mild
Form:	Liquid
Physical form changes (melting, boiling, etc.):	
Melting point:	Not applicable.
Boiling point:	No data.
Flash point:	Does not flash.
Explosive properties:	No data.
Auto ignition temperature:	No data.
Specific gravity:	1.076
Vapour pressure:	No significant volatility; aqueous solution.
Vapour density:	Not applicable.
Evaporation rate:	No data.
Dynamic viscosity:	No data.
Kinematic viscosity:	No data.
Density:	1.0768 g/cm <sup>3</sup>
Solubility:	Water: Soluble
pH:	4.9 10 g/l
Partition coefficient:	log Pow: < 0.000 (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.

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## 11. TOXICOLOGICAL INFORMATION

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

### Acute oral toxicity

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

Practically non-toxic.

FIFRA category IV.

No mortality.

### Acute dermal toxicity

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

Practically non-toxic.

FIFRA category IV.

No mortality.

### Acute inhalation toxicity

**Rat, LC50 (limit test), 4 hours, aerosol:** > 2.95 mg/L

Practically non-toxic.

FIFRA category IV.

No mortality.

### Skin irritation

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

Days to heal: 3

Primary Irritation Index (PII): 0.7/8.0

Slight irritation.

FIFRA category IV.

### Eye irritation

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

Days to heal: 3

Moderate irritation.

FIFRA category III.

### 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

**Triethylamine salt of triclopyr**

Monsanto has not conducted toxicity studies on this product. Following information has been found in the literature.

**Developmental toxicity/teratogenicity**

**Rat, oral, 6 - 15 days of gestation:**

NOEL toxicity: 100 mg/kg body weight/day

NOEL development: 100 mg/kg body weight/day

Other effects in mother animal: decrease of survival

Developmental effects: weight loss, skeletal variations, delayed ossification

Effects on offspring only observed with maternal toxicity.

**Rabbit, oral, 6 - 18 days of gestation:**

NOEL toxicity: 30 mg/kg body weight/day

NOEL development: 30 mg/kg body weight/day

Target organs/systems in mother animal: liver, kidneys

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

Developmental effects: pre-implantation loss, post-implantation loss

Effects on offspring only observed with maternal toxicity.

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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, static, LC50: 42.65 mg/L  
Slightly toxic.

#### Aquatic toxicity, algae/aquatic plants

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

Acute toxicity, 72 hours, static, EbC50 (biomass): 3.77 mg/L  
Moderately toxic.

### Similar glyphosate formulation

#### Aquatic toxicity, invertebrates

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

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

#### Avian toxicity

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

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

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

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

#### Arthropod toxicity

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

Oral/contact, 48 hours, LD50: > 100 µg/bee  
Practically non-toxic.

#### Soil organism toxicity, invertebrates

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

Acute toxicity, 14 days, LC50: > 1,250 mg/kg soil  
Practically non-toxic.

### Triethylamine salt of triclopyr

#### Aquatic toxicity, fish

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

Acute toxicity, 96 hours, flowthrough, LC50: 613 mg/L  
Practically non-toxic.

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

Acute toxicity, 96 hours, flowthrough, LC50: 893 mg/L  
Practically non-toxic.

#### Aquatic toxicity, invertebrates

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

Acute toxicity, 48 hours, static, EC50: 1,496 mg/L  
Practically non-toxic.

#### Aquatic toxicity, algae/aquatic plants

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

Acute toxicity, 96 hours, static, EC50: 7.6 mg/L  
Moderately toxic.

#### Avian toxicity

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

Dietary toxicity, 5 days, LC50: 11,622 mg/kg diet  
Practically non-toxic.

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

Dietary toxicity, 5 days, LC50: > 10,000 mg/kg diet  
Practically non-toxic.

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

Acute oral toxicity, single dose, LD50: 2,055 mg/kg body weight  
Practically non-toxic.

**Arthropod toxicity**

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

Contact, 48 hours, LD50: > 100 µg/bee  
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**

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 packages retain product residue and dust.  
Observe all labelled 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

**TSCA Inventory**



Exempt

**OSHA Hazardous Components**

Triethylamine salt of triclopyr  
Surfactant

**SARA Title III Rules**

Section 311/312 Hazard Categories  
Immediate  
Section 302 Extremely Hazardous Substances  
Not applicable.  
Section 313 Toxic Chemical(s)  
Triclopyr, triethylammonium salt

**CERCLA Reportable quantity**

Not applicable.

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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.

	Health	Flammability	Instability	Additional Markings
NFPA	1	1	1	

0 = Minimal hazard, 1 = Slight hazard, 2 = Moderate hazard, 3 = Severe hazard, 4 = Extreme hazard

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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