

MONSANTO MATERIAL SAFETY DATA SHEET

Registrant: MONSANTO AUSTRALIA LTD 12/600 St Kilda Road Melbourne, 3004 Australia TELEPHONE NO: 61 3 9522 7122 Fax: 61 3 9522 6122	Distributed by: YATES NEW ZEALAND LTD 373 Neilson Street Onehunga Auckland TELEPHONE NO: 09 636 2800	Emergency Contacts: CHEMCALL (NZ): 0800 243 622 NZ Poisons Information Centre : 0800 764 766
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1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name	Concentrate Roundup ® Weedkiller
Product Use	Concentrate Roundup ® Weedkiller will control a wide range of weeds and grasses in garden beds, rockeries, driveways, along fence lines and garden edges, around buildings and prior to planting new lawns and garden areas
Company Name	Monsanto Australia Limited
Address	12/600 St Kilda Road, Melbourne, 3004, Australia
Product Type	Herbicide

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical	Liquid
Active ingredient	Isopropylamine salt of N-(phosphonomethyl)glycine; {Isopropylamine salt of glyphosate}
Composition	

COMPONENT	CAS No.	Concentration, g/L (approximate)
Isopropylamine salt of glyphosate	38641-94-0	360
Other ingredients	+	Balance

+ Trade secret composition. Contains Surfactant

3. HAZARDS IDENTIFICATION

Toxicology 6.1D (rat): harmful if inhaled

Ecotoxic 9.1D (algal): Ecotoxic in the aquatic environment
9.1D (fish): Slightly harmful in the aquatic environment or are otherwise designated for biocidal action

Non –selective herbicide – very toxic to plant species

Appearance and odour (colour/form/odour): Amber / Liquid / Slight

WARNING!

May cause eye irritation

May cause skin irritation

HARMFUL IF SWALLOWED

HARMFUL IF INHALED

Avoid contact of the concentrated formulation with eyes, skin and clothing

Avoid breathing spray

Use with adequate ventilation

Potential health effects

Likely routes of exposure

Skin contact, eye contact, or inhalation

Eye contact

This product may cause eye irritation

Skin contact

This product may cause skin irritation

Inhalation, short term

Harmful by inhalation

Single ingestion

Harmful if swallowed.

Causes gastrointestinal tract irritation

Refer to section 11 for Toxicological and section 12 for Ecological information.

4. FIRST AID MEASURES

Eye contact

If in eyes, hold eye open and rinse gently for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, and then continue rinsing.

Skin contact

Immediately wash affected skin with plenty of water.

Take off contaminated clothing, wristwatch, and jewellery.

Wash clothes before re-use.

Inhalation

Remove to fresh air.

If not breathing, give artificial respiration.

Get medical attention.

Ingestion

Immediately offer water to drink.

Get medical attention.

Never 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

Unusual fire and explosion hazards

Minimise use of water to prevent environmental contamination.

Environmental precautions: see section 6.

Hazardous products of combustion

Carbon monoxide (CO), nitrogen oxides (NO_x), phosphorus oxides (P_xO_y)

Fire fighting equipment

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

Other Information

Hazchem Code: 2X

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protection recommended in section 8.

Spills Control

Minimise spread.
Clear area of unprotected personnel
Contain spillage with sand bags or other means.
Keep out of drains, sewers, ditches and water ways.

Methods for cleaning up

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

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

Handling

Avoid contact with eyes, skin and clothing.
Avoid breathing vapour or mist.
Wash hands thoroughly after handling or contact.
Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
Wash contaminated clothing before re-use.
Thoroughly clean equipment after use.
Do not contaminate drains, sewers and water ways when disposing of equipment rinse water.
Emptied containers retain vapour and product residue.
Observe all labelled safeguards until container is cleaned, reconditioned or destroyed.
APPROVED HANDLER: This product must be used under the control of an approved handler and Records as described in NZS 8409 Management of Agrichemicals must be kept if using Concentrate Roundup® Weedkiller directly onto or into water. **NOTE: Monsanto does not support use of this product directly onto or into water.**

BEWARE: Spray drift hazard. Apply this product carefully. Spray drift may cause serious damage to desirable plants.

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.
Shelf life: Refer to Product label

Storage must be in accordance with NZS 8409 Management of Agrichemicals. Stores containing more than 1,000 Litre of Concentrate Roundup® Weedkiller require secondary containment and are subject to signage, and require emergency response plans.

When stored with substances of the same hazard classification the aggregate quantity must be considered. For full details refer to NZS 8409 Management of Agrichemicals and HSNO Regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards

The EEL for Glyphosate is 0.37 mg/L.

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.
- Applicators and other handlers must wear eye protection.

Skin protection

No special requirement when using dilute spray solution as recommended.

If repeated or prolonged contact or when handling the concentrated product:

- Wear chemical resistant gloves.

Respiratory protection

- If airborne exposure is excessive:
- Wear respirator.
- Full facepiece/hood/helmet respirator replaces need for chemical goggles.
- Respiratory protection programs must comply with all local/regional/national regulations.

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.

Appearance	Clear amber
Form:	Liquid
Odour:	Slight
Flash point:	None.
Specific gravity:	1.160 @ 20 °C
Solubility in water	Soluble
pH:	4.4 – 5.0 (80 g/l)
Partition coefficient (log Pow):	- 3.2 @ 25 C (Glyphosate)

10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions of handling and storage

Materials to avoid/Reactivity

The formulations reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode if ignited.

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: > 5,000 mg/kg body weight

Practically non-toxic.

FIFRA category IV.

No mortality.

Acute dermal toxicity

Rat, LD50: > 5,000 mg/kg body weight

Practically non-toxic.

FIFRA category IV.

No mortality.

Skin irritation

Rabbit, 6 animals, OECD 404 test:

Redness, mean EU score: 1.39

Swelling, mean EU score: 0.33

Days to heal: 7

Primary Irritation Index (PII): 1.8/8.0

Slight irritation.

FIFRA category IV.

Skin sensitization

Guinea pig, 3-induction Buehler test:

Positive incidence: 0 %

Similar formulation

Eye irritation

Rabbit, 6 animals, OECD 405 test:

Conjunctival redness, mean EU score: 1.61

Conjunctival swelling, mean EU score: 0.88

Corneal opacity, individual EU scores: 0.00

Iris lesions, mean EU score: 0.00

Days to heal: 7

Slight irritation.

FIFRA category III.

Similar formulation

Acute inhalation toxicity

Rat, LC50, 4 hours, aerosol: 2.3 mg/L

Practically non-toxic.

FIFRA category IV.

Not hazardous for transportation. 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.

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

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.

More concentrated formulation

Aquatic toxicity, fish

Bluegill sunfish (*Lepomis macrochirus*):

Acute toxicity, 96 hours, static, LC50: 5.2 mg/L
Moderately toxic.

Common carp (*Cyprinus carpio*):

Acute toxicity, 96 hours, static, LC50: 4.0 mg/L
Moderately toxic.

Aquatic toxicity, invertebrates

Water flea (*Daphnia magna*):

Acute toxicity, 48 hours, static, EC50: 8.0 mg/L
Moderately toxic.

Similar formulation

Arthropod toxicity

Honey bee (*Apis mellifera*):

Oral, 48 hours, LD50: > 242 µg/bee
Practically non-toxic.

Honey bee (*Apis mellifera*):

Contact, 48 hours, LD50: > 260 µg/bee
Practically non-toxic.

Similar formulation- Mon 78239

Aquatic toxicity, algae/aquatic plants

Green algae (*Selenastrum capricornutum*):

Acute toxicity, 72 hours, static, ErC50: 1.4 mg/L
Highly toxic.

Soil organism toxicity, invertebrates

Earthworm (*Eisenia foetida*):

Acute toxicity, 14 days, LC50: > 10,000 mg/kg dry soil
Practically non-toxic.

Soil organism toxicity, microorganisms

Nitrogen and carbon transformation test:

29.5 kg/ha, 28 days: Less than 25% effect on nitrogen or carbon transformation processes in soil.

N-(phosphonomethyl)glycine; {glyphosate}

Avian toxicity

Bobwhite quail (*Colinus virginianus*):

Dietary toxicity, 5 days, LC50: > 4,640 mg/kg diet
No more than slightly toxic.

Mallard duck (*Anas platyrhynchos*):

Dietary toxicity, 5 days, LC50: > 4,640 mg/kg diet
No more than slightly toxic.

Bobwhite quail (*Colinus virginianus*):

Acute oral toxicity, single dose, LD50: > 3,851 mg/kg body weight
Practically non-toxic.

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

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.

Do NOT contaminate water when disposing of rinse waters.

Ensure packaging cannot be reused.

Do NOT re-use containers.

Burn in a proper incinerator if circumstances (wind direction) and local regulation permit

Recycle if appropriate facilities/equipment available.

Follow all local/regional/national/international regulations.

14. TRANSPORT INFORMATION

U.N. Number	Not Classified as a Dangerous Good based on HSNO (New Zealand) information
HSNO Approval Number	HSR003203
HSNO Classification	9.1B (algal) Very Ecotoxic in the aquatic environment
DG Class	None allocated
Hazchem Code	2X
Packaging Method	Not applicable
Packaging Group	Not applicable
EPG Number	Not applicable
IMO Marine Pollutant	No
Segregation	Check New Zealand Land Transport Rule/Dangerous Goods Rule 45001 for additional information

15. REGULATORY INFORMATION

Registered pesticide

ACVM (New Zealand) Registration Number P007360

Packaging and Labelling:

ECOTOXIC 9.1B

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.

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)

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE 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 labelling provides that information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products are regulated through the product labelling and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labelling. It is a violation to use a pesticide product in any manner not prescribed on the approved label.

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