## SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**1.1 Product identifier**

| | |
|---|---|
| **Trade name** | Roundup Biactive® Herbicide |
| **Product code (UVP)** | 62290054 |

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

| | |
|---|---|
| **Use** | Herbicide |
| **Restrictions on use** | See product label for restrictions. |

**1.3 Details of the supplier of the safety data sheet**

| | |
|---|---|
| **Supplier** | Bayer Cropscience Pty Ltd<br>ABN 87 000 226 022<br>Level 1, 8 Redfern Road<br>3123 Hawthorn East<br>Victoria<br>Australia |
| **Telephone** | (03) 9248 6888 |
| **Telefax** | (03) 9248 6800 |
| **Responsible Department** | 1800 804 479 Technical Information Service |
| **Website** | www.es.bayer.com.au |

**1.4 Emergency telephone no.**

| | |
|---|---|
| **Emergency telephone no.** | 1800 033 111 IXOM Operations Pty Ltd |

## SECTION 2. HAZARDS IDENTIFICATION

**2.1 Classification of the substance or mixture**

**Classification in accordance with Australian GHS Regulation**

Eye irritation: Category 2B
H320 Causes eye irritation.

**2.2 Label elements**

**Labelling according to specific Australian legislation**

Hazard label for supply/use required.

**Hazardous components which must be listed on the label:**

Isopropylamine salt of glyphosate

**Signal word**: Warning

**Hazard statements**

H320 Causes eye irritation.

**Precautionary statements**

| | |
|---|---|
| P264 | Wash hands thoroughly after handling. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P337 + P313 | If eye irritation persists: Get medical advice/ attention. |

**2.3 Other hazards**

No additional hazards known beside those mentioned.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical nature**

Isopropylamine salt of glyphosate 486 g/l
Soluble concentrate (SL)

| Chemical name | CAS-No. | Concentration [%] |
|---|---|---|
| Isopropylamine salt of glyphosate | 38641-94-0 | 41.43 |
| D-Glucopyranose, oligomeric, decyl octyl glycosides | 68515-73-1 | > 5.00 - < 10.00 |
| 1,2-Ethanediamine, polymer with 2-methyloxirane and oxirane | 26316-40-5 | > 5.00 - < 10.00 |
| Other ingredients (non-hazardous) to 100% | | |

## SECTION 4. FIRST AID MEASURES

**If poisoning occurs, immediately contact a doctor or Poisons Information Centre (telephone 13 11 26), and follow the advice given. Show this Safety Data Sheet to the doctor.**

**4.1 Description of first aid measures**

**General advice** Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.

**Inhalation** Move to fresh air. Keep patient warm and at rest. Call a physician or poison control center immediately.

**Skin contact** Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Call a physician or poison control center immediately.

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.

| | |
|---|---|
| **Ingestion** | Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended. |

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

| | |
|---|---|
| **Symptoms** | To date no symptoms are known. |

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

| | |
|---|---|
| **Risks** | This product is not a cholinesterase inhibitor. |
| **Treatment** | Treatment with atropine and oximes is not indicated. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote. |

## SECTION 5. FIRE FIGHTING MEASURES

**5.1 Extinguishing media**

| | |
|---|---|
| **Suitable** | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. |
| **Unsuitable** | High volume water jet |
| **5.2 Special hazards arising from the substance or mixture** | In the event of fire the following may be released:, Carbon monoxide (CO), Carbon dioxide (CO2), Nitrogen oxides (NOx), Oxides of phosphorus |

**5.3 Advice for firefighters**

| | |
|---|---|
| **Special protective equipment for firefighters** | In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus. |
| **Further information** | Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. |

**Hazchem Code**Not applicable

## SECTION 6. ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures**

| | |
|---|---|
| **Precautions** | Use personal protective equipment. Keep unauthorized people away. Avoid contact with spilled product or contaminated surfaces. |
| **6.2 Environmental precautions** | Do not allow to get into surface water, drains and ground water. |

### 6.3 Methods and materials for containment and cleaning up

| | |
|---|---|
| **Methods for cleaning up** | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations. |
| **Additional advice** | Use personal protective equipment. If the product is accidentally spilled, do not allow to enter soil, waterways or waste water canal. Do not allow product to contact non-target plants. |
| **6.4 Reference to other sections** | Information regarding safe handling, see section 7.<br>Information regarding personal protective equipment, see section 8.<br>Information regarding waste disposal, see section 13. |

## SECTION 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

| | |
|---|---|
| **Advice on safe handling** | Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. |
| **Hygiene measures** | Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.<br>Remove Personal Protective Equipment (PPE) immediately after handling this product. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing. Keep working clothes separately. Garments that cannot be cleaned must be destroyed (burnt). |

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Requirements for storage areas and containers** | Store in original container. Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in a place accessible by authorized persons only. Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode. Protect from freezing. Partial crystallization may occur on prolonged storage below the minimum storage temperature. Freezing will affect the physical condition but will not damage the material. Thaw and mix before using. |
| **Advice on common storage** | Keep away from food, drink and animal feedingstuffs. |

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control parameters

No known occupational limit values.

### 8.2 Exposure controls

| | |
|---|---|
| **Respiratory protection** | Respiratory protection is not required under anticipated circumstances of exposure. |

Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

**Hand protection**

Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

| | |
|---|---|
| Material | Nitrile rubber |
| Rate of permeability | > 480 min |
| Glove thickness | > 0.4 mm |
| Directive | Protective gloves complying with EN 374. |

**Eye protection**

Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

**Skin and body protection**

Wear standard coveralls and Category 3 Type 6 suit.
If there is a risk of significant exposure, consider a higher protective type suit.
Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.
If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.

**General protective measures**

If product is handled while not enclosed, and if contact may occur:
Complete suit protecting against chemicals
In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the above mentioned recommendations would apply.

**Engineering Controls**

**Advice on safe handling**

Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Form** | Liquid, free from foreign matter |
| **Colour** | green to dark green |
| **Odour** | No data available |
| **Odour Threshold** | No data available |
| **pH** | 4.4 - 4.8 (8 %) (23 °C) (deionized water) |
| **Melting point/range** | No data available |

| | |
|---|---|
| **Boiling point/boiling range** | 105 °C |
| **Flash point** | does not flash |
| **Flammability** | No data available |
| **Auto-ignition temperature** | No data available |
| **Thermal decomposition** | No data available |
| **Minimum ignition energy** | No data available |
| **Self-accelarating decomposition temperature (SADT)** | No data available |
| **Upper explosion limit** | No data available |
| **Lower explosion limit** | No data available |
| **Vapour pressure** | No significant volatility., aqueous solution |
| **Evaporation rate** | No data available |
| **Relative vapour density** | No data available |
| **Relative density** | 1.173 (20 °C)<br>Water at 4 °C |
| **Density** | ca. 1.17 g/cm³ (20 °C) |
| **Water solubility** | soluble |
| **Partition coefficient: n-octanol/water** | Glyphosate: log Pow: -3.2 |
| **Viscosity, dynamic** | No data available |
| **Viscosity, kinematic** | No data available |
| **Oxidizing properties** | No data available |
| **Explosivity** | Not explosive |
| **9.2 Other information** | Further safety related physical-chemical data are not known. |

## SECTION 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **10.1 Reactivity** | Stable under normal conditions. |
| **10.2 Chemical stability** | Stable under recommended storage conditions. |
| **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** Extremes of temperature and direct sunlight.

**10.5 Incompatible materials** Galvanised steel, Unlined mild steel

**10.6 Hazardous decomposition products** No decomposition products expected under normal conditions of use.

## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute oral toxicity** LD50 (Rat) > 2,000 mg/kg
Test conducted with a similar formulation.

**Acute inhalation toxicity**
Based on available data, the classification criteria are not met.
During intended and foreseen applications, no respirable aerosol is formed.

**Acute dermal toxicity** LD50 (Rat) > 2,000 mg/kg
Test conducted with a similar formulation.

**Skin corrosion/irritation** Slight irritant effect - does not require labelling. (Rabbit)
Test conducted with a similar formulation.

**Serious eye damage/eye irritation** Slight irritant effect - does not require labelling. (Rabbit)
Test conducted with a similar formulation.

**Respiratory or skin sensitisation** Skin: Non-sensitizing. (Guinea pig)
OECD Test Guideline 406, Buehler test
Test conducted with a similar formulation.

**Assessment mutagenicity**

Glyphosate was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

**Assessment carcinogenicity**

Glyphosate was not carcinogenic in lifetime feeding studies in rats and mice.

**Assessment toxicity to reproduction**

Glyphosate did not cause reproductive toxicity in a two-generation study in rats.

**Assessment developmental toxicity**

Glyphosate did not cause developmental toxicity in rats and rabbits.

**Assessment STOT Specific target organ toxicity – single exposure**

Glyphosate: Based on available data, the classification criteria are not met.

**Assessment STOT Specific target organ toxicity – repeated exposure**

Glyphosate did not cause specific target organ toxicity in experimental animal studies.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Information on likely routes of exposure**

Harmful if inhaled.

May cause skin irritation.
Causes eye irritation.
Harmful if swallowed.

**Early onset symptoms related to exposure**
Refer to Section 4

**Delayed health effects from exposure**
Refer to Section 11

**Exposure levels and health effects**
Refer to Section 4

**Interactive effects**
Not known

**When specific chemical data is not available**
Not applicable

**Mixture of chemicals**
Refer to Section 2.1

**Further information**

No further toxicological information is available.

## SECTION 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

| | |
|---|---|
| **Toxicity to fish** | LC50 (Oncorhynchus mykiss (rainbow trout)) > 1,039 mg/l<br>static test; Exposure time: 96 h<br>Test conducted with a similar formulation.<br><br>LC50 (Lepomis macrochirus (Bluegill sunfish)) 47 mg/l<br>static test; Exposure time: 96 h<br>The value mentioned relates to the active ingredient glyphosate. |
| **Chronic toxicity to fish** | Oncorhynchus mykiss (rainbow trout)<br>flow-through test<br>NOEC: >= 9.63 mg/l<br>The value mentioned relates to the active ingredient glyphosate. |
| **Toxicity to aquatic invertebrates** | EC50 (Daphnia magna (Water flea)) 243 mg/l<br>Exposure time: 48 h<br>Test conducted with a similar formulation.<br>LC50 (Crassostrea gigas (Portuguese oyster)) 40 mg/l static test; Exposure time: 48 h<br>The value mentioned relates to the active ingredient glyphosate. |
| **Chronic toxicity to aquatic invertebrates** | EC50 (Daphnia magna (Water flea)): 12.5 mg/l<br>Exposure time: 21 d<br>The value mentioned relates to the active ingredient glyphosate. |
| **Toxicity to aquatic plants** | ErC50 (Raphidocelis subcapitata (freshwater green alga)) 118 mg/l<br>static test; Exposure time: 72 h<br>Test conducted with a similar formulation. |

| | |
|---|---|
| | ErC50 (Skeletonema costatum) 13.5 mg/l<br>Growth rate; Exposure time: 72 h<br>The value mentioned relates to the active ingredient glyphosate. |
| **Toxicity to other organisms** | (Eisenia fetida (earthworms)) 1,250 mg/kg<br>Exposure time: 48 h |
| | LC50 (Apis mellifera (bees))<br>Exposure time: 48 h |
| | LD50 (Apis mellifera (bees)) > 25 µg/bee<br>Exposure time: 48 h |
| | NOEC (Apis mellifera (bees)) 25 µg/bee<br>Exposure time: 48 h |

**12.2 Persistence and degradability**

| | |
|---|---|
| **Biodegradability** | Glyphosate:<br>Not rapidly biodegradable |
| **Koc** | Glyphosate: Koc: 6920 |

**12.3 Bioaccumulative potential**

| | |
|---|---|
| **Bioaccumulation** | Glyphosate:<br>Does not bioaccumulate. |

**12.4 Mobility in soil**

| | |
|---|---|
| **Mobility in soil** | Glyphosate: Immobile in soil |

**12.5 Other adverse effects**

| | |
|---|---|
| **Additional ecological information** | No further ecological information is available. |

## SECTION 13. DISPOSAL CONSIDERATIONS

Triple-rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant Local, State or Territory government regulations. Do not burn empty containers or product.
Do not reuse container for any other purpose.

## SECTION 14. TRANSPORT INFORMATION

According to national and international transport regulations not classified as dangerous goods.

## SECTION 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Code Act 1994

Australian Pesticides and Veterinary Medicines Authority approval number: 48518

**SUSMP classification (Poison Schedule)**

Schedule 5 (Standard for the Uniform Scheduling of Medicines and Poisons)

## SECTION 16. OTHER INFORMATION

**Trademark information** Roundup Biactive® is a Registered Trademark of the Bayer Group.

**Abbreviations and acronyms**

| | |
|---|---|
| ADN | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| ATE | Acute toxicity estimate |
| AU OEL | Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment) |
| CAS-Nr. | Chemical Abstracts Service number |
| CEILING | Ceiling Limit Value |
| Conc. | Concentration |
| EC-No. | European community number |
| ECx | Effective concentration to x % |
| EINECS | European inventory of existing commercial substances |
| ELINCS | European list of notified chemical substances |
| EN | European Standard |
| EU | European Union |
| IATA | International Air Transport Association |
| IBC | International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) |
| ICx | Inhibition concentration to x % |
| IMDG | International Maritime Dangerous Goods |
| LCx | Lethal concentration to x % |
| LDx | Lethal dose to x % |
| LOEC/LOEL | Lowest observed effect concentration/level |
| MARPOL | MARPOL: International Convention for the prevention of marine pollution from ships |
| N.O.S. | Not otherwise specified |
| NOEC/NOEL | No observed effect concentration/level |
| OECD | Organization for Economic Co-operation and Development |
| OES BCS | OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard" |
| PEAK | PEAK: Exposure Standard - Peak means a maximum or peak airborne concentration of a particular substance determined over the shortest analytically practicable period of time which does not exceed 15 minutes. |
| RID | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SK-SEN | Skin sensitiser |
| SKIN_DES | SKIN_DES: Skin notation: Absorption through the skin may be a significant source of exposure. |
| STEL | STEL: Exposure standard - short term exposure limit (STEL): A 15 minute TWA exposure which should not be exceeded at any time during a working day even if the eight-hour TWA average is within the TWA exposure standard. Exposures at the STEL should not be longer than 15 minutes and should not be repeated more than four times per day. There should be at least 60 minutes between successive exposures at the |

| | |
|---|---|
| | STEL. |
| TWA | TWA: Exposure standard - time-weighted average (TWA): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week. |
| TWA | Time weighted average |
| UN | United Nations |
| WHO | World health organisation |

This SDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this SDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

**Reason for Revision:** Reviewed and updated for general editorial purposes.

| |
|---|
| Changes since the last version are highlighted in the margin. This version replaces all previous versions. |