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| <p style="text-align: center;">MONSANTO Europe S.A./N.V. Safety Data Sheet Commercial Product</p> |
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1. PRODUCT AND COMPANY IDENTIFICATION

- 1.1. Product identifier**
Roundup® Biactive
- 1.1.1. Chemical name**
Not applicable for a mixture.
- 1.1.2. Synonyms**
None.
- 1.1.3. CLP Annex VI Index No.**
Not applicable.
- 1.1.4. C&L ID No.**
Not available.
- 1.1.5. EC No.**
Not applicable for a mixture.
- 1.1.6. REACH Reg. No.**
Not applicable for a mixture.
- 1.1.7. CAS No.**
Not applicable for a mixture.
- 1.2. Product use**
Herbicide
- 1.3. Company/(Sales office)**
MONSANTO Europe S.A./N.V.
Haven 627, Scheldelaan 460, B-2040
Antwerp, Belgium
Telephone: +32 (0)3 568 51 11
Fax: +32 (0)3 568 50 90
E-mail:
safety.datasheet@monsanto.com
- 1.4. Emergency numbers**
Telephone: Belgium +32 (0)3 568 51 23

2. HAZARDS IDENTIFICATION

- 2.1. Classification**
- 2.1.1. Classification according to Regulation (EC) No. 1272/2008 [CLP]**
Not classified as dangerous.
- 2.1.2. National classification - U.K.**
Not classified as dangerous.

EU label (manufacturer self-classification) - Classification/Labeling following the EU Dangerous Preparations' Directive 1999/45/EC.

Not classified as dangerous.
S29 Do NOT empty into drains.
S49 Keep only in the original container.

National classification/labeling - U.K.

Not classified as dangerous.
S2 Keep out of reach of children.
S13 Keep away from food, drink and animal feedingstuffs.
S24 Avoid contact with skin.
S28 After contact with skin, wash immediately with plenty of water.
S29 Do NOT empty into drains.

SP1 Do not contaminate water with the product or its container.
KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

2.2.1. Precautionary statement/statements

P234 Keep only in original container

2.2.2. Supplemental hazard information

EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

2.2.3. Precautionary statement/statements U.K.

P234 Keep only in original container

2.3. Other hazards

0% of the mixture consists of ingredient/ingredients of unknown acute toxicity.

0% of the mixture consists of ingredient/ingredients of unknown hazards to the aquatic environment.

2.3.1. Potential environmental effects

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

Not a persistent, bioaccumulative or toxic (PBT) nor a very persistent, very bioaccumulative (vPvB) mixture.

2.4. Appearance and odour (colour/form/odour):

Yellowish-Brown /Liquid / amines

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

| Components | CAS No. | EC No. | EU Index No. / REACH Reg. No. / C&L ID No. | % by weight (approximate) | Classification |
|-----------------------------------|------------|-----------|--|------------------------------|---|
| Isopropylamine salt of glyphosate | 38641-94-0 | 933-426-9 | 015-184-00-8 / - / 02-2119693876-15- 0000 | 41,5 | Aquatic Chronic - Category 2; H411; { c} N; R51/53; { b} |
| Surfactant(s) | | | - / - / - | 16 | Aquatic Chronic - Category 4; H413R53; { a} |
| Water | 7732-18-5 | 231-791-2 | - / - / - | 42,5 | Not classified as dangerous.; |

The specific chemical identity is being withheld because it is trade secret information of Monsanto Company.

Full text of classification code: See section 16.

4. FIRST AID MEASURES

Use personal protection recommended in section 8.

4.1. Description of first aid measures

4.1.1. Eye contact

Immediately flush with plenty of water. If easy to do, remove contact lenses.

4.1.2. Skin contact

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

4.1.3. Inhalation

Remove to fresh air.

4.1.4. Ingestion

Immediately offer water to drink. Never give anything by mouth to an unconscious person. Do NOT induce vomiting unless directed by medical personnel. If symptoms occur, get medical attention.

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.

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

Minimise use of water to prevent environmental contamination.

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. Fire fighting equipment

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. Notify authorities.

6.3. Methods for cleaning up

Place leaking containers in oversize leakproof drums for transport. 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

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

7.1. Precautions for safe handling

- When using do not eat, drink or smoke.
- Wash hands thoroughly after handling or contact.
- 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.
- 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.

7.2. Conditions for safe storage

- Minimum storage temperature: -15 °C
- Maximum storage temperature: 50 °C
- Compatible materials for storage: stainless steel, fibreglass, plastic, glass lining
- 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.
- This formulation can be stored for 2 to 3 weeks at temperatures colder than -20°C without impact. If the temperature remains below -20°C for longer the water phase of the formulation may freeze.
- Should this occur allow the product to warm and it will return to its original homogeneous state. We recommend that customers follow the typical use instructions which state that the container should be agitated (shaken) prior to pouring.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Airborne exposure limits

| Components | Exposure Guidelines |
|-----------------------------------|---|
| Isopropylamine salt of glyphosate | No specific occupational exposure limit has been established. |
| Surfactant(s) | No specific occupational exposure limit has been established. |
| Water | No specific occupational exposure limit has been established. |

8.2. Engineering controls

- No special requirement when used as recommended.

8.3. Recommendations for personal protective equipment

8.3.1. Eye protection:

- No special requirement when used as recommended.

8.3.2. Skin protection:

- If repeated or prolonged contact:
 - Wear chemical resistant gloves.
 - Chemical resistant gloves include those made of waterproof materials such as nitrile, butyl, neoprene, polyvinyl chloride (PVC), natural rubber and/or barrier laminate.

8.3.3. 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: | Yellowish - Brown |
| Odour: | amines |
| Form: | Liquid |
| Physical form changes (melting, boiling, etc.): | |
| Melting point: | Not applicable. |
| Boiling point: | 105,3 °C |
| Flash point: | Does not flash. |
| Explosive properties: | No explosive properties |
| Auto ignition temperature: | 440 °C |
| Self-accelerating decomposition temperature (SADT): | No data. |
| Oxidizing properties: | none |
| Specific gravity: | 1,166 @ 20 °C / 4 °C |
| Vapour pressure: | No significant volatility; aqueous solution. |
| Vapour density: | Not applicable. |
| Evaporation rate: | No data. |
| Dynamic viscosity: | 65 mPa·s @ 21 °C |
| Kinematic viscosity: | 55,7 mm ² /s @ 21 °C |
| Density: | 1,166 g/cm ³ @ 20 °C |
| Solubility: | Water: Completely miscible. |
| pH: | 4,8 @ 10 g/l |
| Partition coefficient: | log Pow: < -3,2 @ 25 °C (glyphosate) |

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. 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. Incompatible materials

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

10.5. Hazardous decomposition

Thermal decomposition: Hazardous products of combustion: see section 5.

11. TOXICOLOGICAL INFORMATION

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

Likely routes of exposure: Skin contact, eye contact

Data obtained on product and components are summarized below.

Acute oral toxicity

Rat, LD50: > 5.000 mg/kg body weight

No mortality.

Acute dermal toxicity

Rat, LD50: > 5.000 mg/kg body weight

No mortality.

Skin irritation

Rabbit, 6 animals, OECD 404 test:

Redness, mean EU score: 0,11

Swelling, mean EU score: 0,00

Days to heal: 3

Eye irritation

Rabbit, 6 animals, OECD 405 test:

Conjunctival redness, mean EU score: 1,11

Conjunctival swelling, mean EU score: 0,00

Corneal opacity, mean EU score: 0,00

Iris lesions, mean EU score: 0,00

Days to heal: 7

Skin sensitization

Guinea pig, 9-induction Buehler test:

Positive incidence: 0 %

N-(phosphonomethyl)glycine; { glyphosate}

Mutagenicity

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

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 ppm

Tumours: none

Toxicity to reproduction/fertility

Rat, oral, 2 generations:

NOAEL toxicity: 10.000 ppm

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 product and components are summarized below.

Aquatic toxicity, fish

Rainbow trout (*Oncorhynchus mykiss*):

Acute toxicity, 96 hours, flowthrough, LC50: > 989 mg/L

Common carp (*Cyprinus carpio*):

Acute toxicity, 96 hours, flowthrough, LC50: > 895 mg/L

Aquatic toxicity, invertebrates

Water flea (*Daphnia magna*):

Acute toxicity, 48 hours, flowthrough, EC50: 676 mg/L

Aquatic toxicity, algae/aquatic plants

Green algae (*Selenastrum capricornutum*):

Acute toxicity, 72 hours, static, ErC50 (growth rate): 284 mg/L

Duckweed (*Lemna gibba*):

Acute toxicity, 7 days, semi-static, ErC50 (growth rate): > 150 mg/L

Duckweed (*Lemna gibba*):

Acute toxicity, 7 days, semi-static, NOEC: 19,1 mg/L

Avian toxicity

Mallard duck (*Anas platyrhynchos*):

Dietary toxicity, 5 days, LC50: > 5.620 mg/kg diet

Bobwhite quail (*Colinus virginianus*):

Dietary toxicity, 5 days, LC50: > 5.620 mg/kg diet

Arthropod toxicity

Honey bee (*Apis mellifera*):

Oral, 48 hours, LD50: > 254 µg/bee

Honey bee (*Apis mellifera*):

Contact, 48 hours, LD50: > 330 µg/bee

Soil organism toxicity, invertebrates

Earthworm (*Eisenia foetida*):

Acute toxicity, 14 days, LC50: > 1.250 mg/kg dry soil

Soil organism toxicity, microorganisms

Nitrogen and carbon transformation test:

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

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

13.1. Waste treatment methods

13.1.1. Product

Follow all local/regional/national/international regulations on waste disposal. Follow current edition of the General Waste, Landfill, and Burning of Hazardous Waste Directives; the EU List of Waste; and the Shipment of Waste Regulation. According to the manufacturer self-classification, following the EU Dangerous Preparations' Directive 1999/45/EC, the product can

be disposed as a non-hazardous industrial waste. According to the manufacturer self-classification, following Regulation (EC) No. 1272/2008 [CLP], the product can be disposed as a non-hazardous industrial waste. Disposal in an industrial waste incinerator with energy recovery is recommended. Keep out of drains, sewers, ditches and water ways.

13.1.2. Container

Follow all local/regional/national/international regulations on waste disposal, packaging waste collection/disposal. Follow current edition of the General Waste, Landfill, and Burning of Hazardous Waste Directives; the EU List of Waste; and the Shipment of Waste Regulation. Do NOT re-use containers. Pour rinse water into spray tank. Properly rinsed container can be disposed as a non hazardous industrial waste. Store for collection by approved waste disposal service. Recycle if appropriate facilities/equipment available. Recycle the non-hazardous container only when a proper control on the end use of the recycled plastic is possible. Suitable for industrial grade recycling only. Do NOT recycle plastic that could end in any human or food contact application. This package meets the requirements for energy recovery. Disposal in a incinerator with energy recovery is recommended. Triple or pressure rinse empty containers.

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 regulated for transport under ADR/RID, IMO, or IATA/ICAO Regulations

15. REGULATORY INFORMATION

15.1. Other Regulatory Information

SP1 Do not contaminate water with the product or its container.

15.2. Chemical Safety Assessment

A Chemical Safety Assessment per Regulation (EC) No. 1907/2006 is not required and has not been performed.

A Risk Assessment has been performed under Directive 91/414/EC.

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.

This Safety Data Sheet has been prepared following the Regulation (EC) No. 1907/2006 (Annex II) as last amended by Regulation (EC) No. 453/2010

Data provided in this Safety Data Sheet are for the product as supplied unless otherwise indicated.

Classification of components

| Components | Classification |
|-----------------------------------|--|
| Isopropylamine salt of glyphosate | Aquatic Chronic - Category 2 H411 Toxic to aquatic life with long lasting effects. N - Dangerous for the environment R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| Surfactant(s) | Aquatic Chronic - Category 4 H413 May cause long lasting harmful effects to aquatic life. R53 May cause long-term adverse effects in the aquatic environment. |
| Water | Not classified as dangerous. |

Endnotes:

- { a} EU label (manufacturer self-classification)
- { b} EU label (Annex I)
- { c} EU CLP classification (Annex VI)
- { d} EU CLP (manufacturer self-classification)

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)

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, MONSANTO Company or any of its subsidiaries makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for the purposes prior to use. In no event will MONSANTO Company or any of its subsidiaries be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR TO THE PRODUCT TO WHICH INFORMATION REFERS.

Safety Data Sheet (SDS) Annex

Chemical Safety Report:

Read and follow label instructions.

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