

SAFETY DATA SHEET



ROUNDUP® WEED & GRASS KILLER4 CONCENTRATE

Version 2.0 / USA
102000056714

1/11
Revision Date: 12/10/2021
Print Date: 05/24/2022

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name ROUNDUP® WEED & GRASS KILLER4 CONCENTRATE
Product code (UVP) 87344886
SDS Number 102000056714
EPA Registration No. 71995-64

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

Use Herbicide
Restrictions on use See product label for restrictions.
Information on supplier
Supplier Monsanto Company Lawn & Garden Products
A Division of Bayer CropScience LP
800 North Lindbergh Blvd.
St. Louis, MO 63167
USA
Responsible Department Email: SDSINFO.BCS-NA@bayer.com
Emergency telephone no.
Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577
Product Information Telephone Number 1-866-99BAYER (1-866-992-2937)

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Acute toxicity(Inhalation): Category 4

Specific target organ toxicity - repeated exposure, Reproductive toxicity: Category 2

Labelling in accordance with regulation HCS 29CFR §1910.1200



Signal word: Warning

Hazard statements

SAFETY DATA SHEET



ROUNDUP® WEED & GRASS KILLER4 CONCENTRATE

2/11

Version 2.0 / USA
102000056714

Revision Date: 12/10/2021
Print Date: 05/24/2022

Harmful if inhaled.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Use only outdoors or in a well-ventilated area.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe gas/ mist/ vapours/ spray.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor/physician if you feel unwell.
IF exposed or concerned: Get medical advice/ attention.
Store locked up.
Dispose of contents/container in accordance with local regulation.

Hazards Not Otherwise Classified (HNOC)

No physical hazards not otherwise classified.
No health hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Hazardous Component Name | CAS-No. | Concentration % by weight |
|-------------------------------|------------|---------------------------|
| Triclopyr, triethylamine salt | 57213-69-1 | 2.50 |
| fluazifop-P-butyl (ISO) | 79241-46-6 | 2.00 |
| Diquat dibromide | 85-00-7 | 1.50 |

SECTION 4: FIRST AID MEASURES

Description of first aid measures

| | |
|-----------------------|---|
| General advice | When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment. |
| Inhalation | Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately. |
| Skin contact | Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately. |
| 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 physician or poison control center immediately. |

SAFETY DATA SHEET



ROUNDUP® WEED & GRASS KILLER4 CONCENTRATE

Version 2.0 / USA
102000056714

3/11
Revision Date: 12/10/2021
Print Date: 05/24/2022

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.

Most important symptoms and effects, both acute and delayed

Symptoms To date no symptoms are known.

Indication of any immediate medical attention and special treatment needed

Treatment Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable High volume water jet

Special hazards arising from the substance or mixture Dangerous gases are evolved in the event of a fire.

Advice for firefighters

Special protective equipment for firefighters In the event of fire and/or explosion do not breathe fumes. Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow water to come into direct contact with the product.

Flash point >100 °C / 212 °F
does not flash

Auto-ignition temperature No data available

Lower explosion limit No data available

Upper explosion limit No data available

Explosivity No data available

SAFETY DATA SHEET



ROUNDUP® WEED & GRASS KILLER4 CONCENTRATE

4/11

Version 2.0 / USA
102000056714

Revision Date: 12/10/2021
Print Date: 05/24/2022

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

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. 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.

Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use only in area provided with appropriate exhaust ventilation. Handle and open container in a manner as to prevent spillage.

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.
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.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers 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 original container and out of the reach of children, preferably in a locked storage area. Protect from freezing. Keep away from direct sunlight.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

| Components | CAS-No. | Control parameters | Update | Basis |
|------------------|---------|-----------------------|--------|-------|
| Diquat dibromide | 85-00-7 | 0.5 mg/m ³ | 2005 | NIOSH |

SAFETY DATA SHEET



ROUNDUP® WEED & GRASS KILLER4 CONCENTRATE

Version 2.0 / USA
102000056714

5/11
Revision Date: 12/10/2021
Print Date: 05/24/2022

| | | (REL) | | |
|--|---------|------------------------------------|---------|-----------|
| Diquat dibromide (Total dust.) | 85-00-7 | 0.5 mg/m ³ (TWA PEL) | 09 2006 | US CA OEL |
| Diquat dibromide | 85-00-7 | 0.5 mg/m ³ (TWA) | 06 2008 | TN OEL |
| Diquat dibromide (Inhalable fraction.) | 85-00-7 | 0.5 mg/m ³ (TWA) | 03 2014 | ACGIH |
| Diquat dibromide (Respirable fraction.) | 85-00-7 | 0.1 mg/m ³ (TWA) | 03 2014 | ACGIH |

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Hand protection

Chemical-resistant gloves (barrier laminate, butyl rubber, nitrile rubber or Viton)

Eye protection

Safety glasses with side-shields

Skin and body protection

Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water.
Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | |
|---------------------|-------------------------------------|
| Form | Liquid |
| Colour | brown |
| Odor | paint-like |
| pH | 6.6 - 6.9 (100 %) (23 °C) |
| Melting point/range | No data available |
| Boiling Point | No data available |
| Flash point | > 100 °C / 212 °F does not flash |

SAFETY DATA SHEET



ROUNDUP® WEED & GRASS KILLER4 CONCENTRATE

6/11

Version 2.0 / USA
102000056714

Revision Date: 12/10/2021
Print Date: 05/24/2022

| | |
|---|--|
| Flammability | No data available |
| Auto-ignition temperature | No data available |
| Minimum ignition energy | No data available |
| Self-accelerating decomposition temperature (SADT) | No data available |
| Upper explosion limit | No data available |
| Lower explosion limit | No data available |
| Vapor Pressure | No data available |
| Evaporation rate | No data available |
| Relative vapour density | No data available |
| Relative density | No data available |
| Density | 1.04 g/cm ³ (20 °C) |
| Water solubility | No data available |
| Partition coefficient: n-octanol/water | Diquat dibromide: log Pow: -4.6 Triclopyr: log Pow: -0.45 |
| Viscosity, dynamic | No data available |
| Viscosity, kinematic | No data available |
| Explosivity | No data available |

SECTION 10: STABILITY AND REACTIVITY

| | |
|---|--|
| Reactivity | Stable under normal conditions. |
| Chemical stability | Stable under recommended storage conditions. |
| Possibility of hazardous reactions | No hazardous reactions when stored and handled according to prescribed instructions. |
| Conditions to avoid | Extremes of temperature and direct sunlight. |
| Incompatible materials | No incompatible materials known. |
| Hazardous decomposition products | No decomposition products expected under normal conditions of use. |

SAFETY DATA SHEET



ROUNDUP® WEED & GRASS KILLER4 CONCENTRATE

Version 2.0 / USA
102000056714

7/11
Revision Date: 12/10/2021
Print Date: 05/24/2022

SECTION 11: TOXICOLOGICAL INFORMATION

| | |
|--------------------------|---|
| Exposure routes | Skin contact, Eye contact, Inhalation |
| Immediate Effects | |
| Eye | May cause eye irritation. |
| Skin | May cause skin irritation. |
| Ingestion | Not expected to produce significant adverse effects when recommended use instructions are followed. |
| Inhalation | Harmful if inhaled. |

Information on toxicological effects

Acute oral toxicity LD50 (Rat) > 5,000 mg/kg
Test conducted with a similar formulation.

Acute inhalation toxicity LC50 (Rat) > 2.04 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.
highest concentration tested
Test conducted with a similar formulation.

Acute dermal toxicity
Dermal toxicity was assessed based on the result of the oral toxicity study.
Dermal toxicity study has been waived by competent regulatory authority.

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

Serious eye damage/eye irritation Minimally irritating. (Rabbit)
Test conducted with a similar formulation.

Respiratory or skin sensitisation Skin: Non-sensitizing. (Guinea pig)
Test conducted with a similar formulation.

Assessment STOT Specific target organ toxicity – single exposure

Diquat dibromide: May cause respiratory irritation.
Triclopyr: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

Diquat dibromide caused specific target organ toxicity in experimental animal studies in the following organ(s): Eyes, Kidney. Diquat dibromide caused Cataract in animal studies.
Triclopyr caused specific target organ toxicity in experimental animal studies in the following organ(s): Kidney, Liver, Gastrointestinal tract.

Assessment mutagenicity

Diquat dibromide was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Triclopyr was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Diquat dibromide was not carcinogenic in lifetime feeding studies in rats and mice.
Triclopyr was not carcinogenic in lifetime feeding studies in rats and mice.

SAFETY DATA SHEET



ROUNDUP® WEED & GRASS KILLER4 CONCENTRATE

Version 2.0 / USA
102000056714

8/11
Revision Date: 12/10/2021
Print Date: 05/24/2022

ACGIH

Diquat dibromide 85-00-7 Group A4

NTP

None.

IARC

None.

OSHA

None.

Assessment toxicity to reproduction

Diquat dibromide did not cause reproductive toxicity in a two-generation study in rats.
Triclopyr did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Diquat dibromide caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Diquat dibromide are related to maternal toxicity.
Triclopyr caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Triclopyr are related to maternal toxicity.

Aspiration hazard

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

SECTION 12: ECOLOGICAL INFORMATION

| | |
|--|---|
| Toxicity to fish | LC50 (Oncorhynchus mykiss (rainbow trout)) 117 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient triclopyr. |
| Toxicity to aquatic invertebrates | EC50 (Daphnia magna (Water flea)) 6.02 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient fluazifop-P-butyl. EC50 (Daphnia magna (Water flea)) 132.9 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient triclopyr. |
| Toxicity to aquatic plants | EC50 (Raphidocelis subcapitata (freshwater green alga)) > 1.8 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient fluazifop-P-butyl. EC50 (Raphidocelis subcapitata (freshwater green alga)) 32.5 mg/l static test; Exposure time: 5 d The value mentioned relates to the active ingredient triclopyr. |
| Biodegradability | Diquat dibromide: |

SAFETY DATA SHEET



ROUNDUP® WEED & GRASS KILLER4 CONCENTRATE

Version 2.0 / USA
102000056714

9/11
Revision Date: 12/10/2021
Print Date: 05/24/2022

| | |
|---|---|
| | Not rapidly biodegradable Triclopyr: Not rapidly biodegradable |
| Koc | Diquat dibromide: Koc: 2184750 Triclopyr: Koc: 0 - 50 |
| Bioaccumulation | Diquat dibromide: Bioconcentration factor (BCF) 1 Does not bioaccumulate. Triclopyr: Bioconcentration factor (BCF) 1 Does not bioaccumulate. |
| Mobility in soil | Diquat dibromide: Immobile in soil Triclopyr: Highly mobile in soils |
| Results of PBT and vPvB assessment | |
| PBT and vPvB assessment | Diquat dibromide: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB). Triclopyr: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB). |
| Environmental precautions | Apply this product as specified on the label. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Retain and dispose of contaminated wash water. |

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

| | |
|-------------------------------|---|
| Product | Dispose in accordance with all local, state/provincial and federal regulations. |
| Contaminated packaging | Consult state and local regulations regarding the proper disposal of container. Follow advice on product label and/or leaflet. |
| RCRA Information | Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply. |

SECTION 14: TRANSPORT INFORMATION

According to national and international transport regulations this material is not classified as dangerous goods / hazardous material.

SAFETY DATA SHEET



ROUNDUP® WEED & GRASS KILLER4 CONCENTRATE

10/11

Version 2.0 / USA
102000056714

Revision Date: 12/10/2021
Print Date: 05/24/2022

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 71995-64

US Federal Regulations

TSCA list

| | |
|-------------------------|------------|
| Water | 7732-18-5 |
| Castor oil, ethoxylated | 61791-12-6 |
| Polyethylene glycol | 25322-68-3 |

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

No export notification needs to be made.

SARA Title III - Section 302 - Notification and Information

Not applicable.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Yes

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

| | | |
|-------------------------------|------------|--------------------|
| Polyethylene glycol | 25322-68-3 | MN |
| Triclopyr, triethylamine salt | 57213-69-1 | NJ |
| Diquat dibromide | 85-00-7 | CA, CT, IL, NJ, RI |

Environmental

CERCLA

Yes

| | |
|------------------|---------|
| Diquat dibromide | 85-00-7 |
|------------------|---------|

Clean Water Section 307(a)(1)

None.

Safe Drinking Water Act Maximum Contaminant Levels

Yes

| | |
|------------------|---------|
| Diquat dibromide | 85-00-7 |
|------------------|---------|

EPA/FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

SAFETY DATA SHEET



ROUNDUP® WEED & GRASS KILLER4 CONCENTRATE

11/11

Version 2.0 / USA
102000056714

Revision Date: 12/10/2021
Print Date: 05/24/2022

Signal word: Caution!
Hazard statements: May cause eye irritation.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

| | |
|---------|---|
| 49CFR | Code of Federal Regulations, Title 49 |
| ACGIH | US. ACGIH Threshold Limit Values |
| ATE | Acute toxicity estimate |
| CAS-Nr. | Chemical Abstracts Service number |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| EINECS | European inventory of existing commercial substances |
| ELINCS | European list of notified chemical substances |
| IARC | International Agency for Research on Cancer |
| IATA | International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| N.O.S. | Not otherwise specified |
| NTP | US. National Toxicology Program (NTP) Report on Carcinogens |
| OECD | Organization for Economic Co-operation and Development |
| TDG | Transportation of Dangerous Goods |
| TWA | Time weighted average |
| UN | United Nations |
| WHO | World health organisation |

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 0 Instability - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1 Flammability - 0 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: The following sections have been revised: Section 15: Regulatory information.

Revision Date: 12/10/2021

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

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.