



NOTICE OF WEED CONTROL APPLICATION

Date of Application: July 20-24, 2026

Location: Willows Park-All turf areas. The application sites will be clearly marked with flags. Please avoid these marked areas until flags have been removed.

Reason for Application: Targeted treatment of the khaki weed along edges of the turf.

Product Manufacturer Name: Round Up Quick Pro Herbicide.

-EPA registration no. 524-535

-Active ingredients: glyphosate-ammonium, diquat dibromide

-Precautionary statement: Harmful if swallowed or inhaled. May cause moderate eye irritation.

Product Manufacturer Name: Tenacity

-EPA registration no. 100-1267

-Active ingredients: mesotrione

-Precautionary statement: Harmful if absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Product Manufacturer Name – Speedzone

EPA # 2217-1053

Active ingredient : 2,4 -D Ethylhexyl ester – Mecoprop -p DMA salt –

Dicamba, DMA salt

Carfentrazone – ethyl

Caution – Causes moderate eye irritation. Harmful if swallowed. Avoid contact with

eyes, or clothing. Wash thoroughly with soap and water after handling and before

eating, drinking, chewing gum, using tobacco, or using the toilet.

Prolonged or

frequently repeated skin contact may cause allergic reactions in some individuals.

***See attached label and SDS sheet**

***Dates are subject to change due to weather**

CLICK HERE TO JUMP TO USE DIRECTIONS



Speed Zone®

BROADLEAF HERBICIDE FOR TURF

ACTIVE INGREDIENTS:

Carfentrazone-ethyl	0.62%
2,4-D, 2-ethylhexyl ester	28.57%
Mecoprop-p acid	5.88%
Dicamba acid	1.71%

INERT INGREDIENTS:	63.22%
TOTAL	100.00%

THIS PRODUCT CONTAINS:

0.05 lb. Ethyl α ,2-dichloro-5-[4(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl]-4-fluorobenzenepropanoate per gallon or 0.62%.
1.53 lbs. 2,4-dichlorophenoxyacetic acid equivalent per gallon or 18.95%.
0.48 lb. (+)-R-2-(2-methyl-4-chlorophenoxy)propionic acid equivalent per gallon or 5.88%.
0.14 lb. 3,6-dichloro-o-anisic acid equivalent per gallon or 1.71%.
Contains petroleum distillates, xylene or xylene range aromatic solvent.
Isomer Specific by AOAC Methods.

KEEP OUT OF REACH OF CHILDREN

CAUTION

Si Usted no entiende la etiqueta, busque a alguien para que se la explique a Usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See below for First Aid and additional Precautionary Statement.



**READ THE ENTIRE LABEL FIRST.
OBSERVE ALL PRECAUTIONS AND
FOLLOW DIRECTIONS CAREFULLY.**

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION: Causes moderate eye irritation. Harmful if absorbed through the skin. Avoid contact with skin, eyes, or clothing. Harmful if swallowed. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

PERSONAL PROTECTIVE EQUIPMENT:

Some materials that are chemical resistant to this product are listed below. If you want more options, follow the instructions for category E on a EPA chemical resistance category selection chart.

NON-WPS USES:

Applicators and other handlers who handle this pesticide for any use NOT covered by the Worker Protection Standard (40 CFR Part 170) – in general, only agricultural-plant uses are covered by the WPS – must wear the following:

- When mixing, loading or applying this product, wear long-sleeved shirt, long pants, socks, shoes, and chemical-resistant gloves.

Personal Hygiene Statement For Non-WPS Uses: After using this product, rinse gloves before removing, remove clothing and launder separately before reuse, and promptly and thoroughly wash hands and exposed skin with soap and water. Remove saturated clothing as soon as possible and shower.

Engineering Control Statements For Non-WPS Uses:

Containers over 1 gallon and less than 5 gallons: Persons engaged in open pouring of this product must also wear coveralls or a chemical resistant apron.

Containers of 5 gallons or more: Do not open-pour from this container. A mechanical system (such as probe and pump or spigot) must be used for transferring the contents of this container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal.

WPS USES:

Applicators and other handlers who handle this pesticide for any uses covered by the Worker Protection Standard (40 CFR Part 170) – in general agricultural-plant uses are covered – must wear the following:

- long-sleeved shirt and long pants.
- chemical resistant gloves such as barrier laminate, nitrile rubber, neoprene rubber or Viton gloves.
- shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. After each day of use, clothing or PPE must not be reused until it has been cleaned.

Engineering Control Statements For WPS Uses:

Containers over 1 gallon and less than 5 gallons: Mixers and loaders who do not use a mechanical system (probe and pump) to transfer the contents of this container must wear coveralls or a chemical-resistant apron in addition to the other required PPE.

Containers of 5 or more gallons: Do not open-pour product from this container. A mechanical system (such as a probe and pump or spigot) must be used for transferring the contents of this container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal. If the mechanical system is used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)], the handler PPE requirements may be reduced or modified as specified in the WPS.

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

FIRST AID

If swallowed:	• Call a poison control center or doctor immediately for treatment advice. • Do not induce vomiting unless told to by a poison control center or doctor. • Do not give any liquid to the person. • Do not give anything by mouth to an unconscious person.
If in eyes:	• 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. • Call a poison control center or doctor for treatment advice.
If on skin:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled:	• Move person 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 poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-877-800-5556 for emergency medical treatment information.	
NOTE TO PHYSICIAN: Contains petroleum distillates – vomiting may cause aspiration pneumonia.	

ENVIRONMENTAL HAZARDS:

Carfentrazone is very toxic to algae and moderately toxic to fish. This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and nontarget plants. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater. When cleaning equipment, do not pour the washwater on the ground; spray or drain over a large area away from wells and other water sources.

Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D and MCPP-p have been associated with mixing, loading and disposal sites. Caution should be exercised when handling 2,4-D and MCPP-p pesticides at such sites to prevent contamination of groundwater supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170.

This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 48 hours.

For early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, wear:

- coveralls over long-sleeved shirt and long pants.
- chemical resistant gloves such as barrier laminate, nitrile rubber, neoprene rubber or Viton gloves.
- shoes plus socks.

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Reentry Statement: Do not allow people (other than applicator) or pets on treatment area during application. Do not enter treatment areas until spray has dried.

PRODUCT DESCRIPTION:

SpeedZone® Broadleaf Herbicide for Turf (SpeedZone) contains four active ingredients including carfentrazone-ethyl that broaden the spectrum of weed control. Carfentrazone-ethyl is in the aryl triazolone family and inhibits protoporphyrinogen oxidase (Protox), a pivotal enzyme in chlorophyll production.

SpeedZone offers these advantages:

- Excellent postemergent activity with proven performance for broadleaf weed control in turfgrass.
- Superior cool weather performance.
- High selectivity (turfgrass safety) in established cool-season turfgrass and warm-season turfgrass.
- Good toxicological, environmental, and ecological properties compared to the standards.

- Carfentrazone-ethyl combinations provide rapid and effective weed control for common and troublesome weed species in turfgrass, e.g. spurge, pennywort (dollarweed), dandelion, and white clover.
- Fast acting with evidence of injury within hours. The speed of action (rate of phytotoxicity) and the early injury symptoms are unique features of carfentrazone-ethyl combinations. Generally, the injury symptoms can be noticed within hours of the application and plant death can occur within 7-14 days.

SPRAY PREPARATION AND TANK MIXTURES:

SpeedZone is an emulsifiable concentrate intended for dilution with water. In certain applications, liquid fertilizer may replace part of the water as a diluent.

Water as diluent:

Add one-half the required amount of water to the spray tank, then add SpeedZone slowly with agitation, and complete filling the tank with water. To prevent separation of the emulsion, mix thoroughly and continue agitation while spraying.

This product forms an emulsion and can separate upon extended or prolonged standing. Re-agitate to assure uniformity of the spray mixture.

Do not use tank additives that alter the pH of the spray solution below pH 5 or above pH 8. Buffer the spray solution to alter the pH range as appropriate.

Liquid fertilizers as diluents:

Use suitable sources and rates of fertilizer based upon local recommendations. Refer to the mixing directions on the labels of the liquid fertilizers (eg. UAN or urea solutions). Always perform a jar compatibility test before large scale mixing.

GROUND EQUIPMENT:

Power sprayers fitted with a boom or spray wand/gun may be used for broadcast applications and spot treatments. For best spray distribution and coverage, select a spray volume and delivery system that will ensure accurate and uniform coverage. Boom sprayers equipped with appropriate flat fan nozzles, tips, and screens are suitable for broadcast applications. Do not use flood nozzles, Raindrop®, or nozzle tips larger than 8008. Spray droplets larger than 400 microns may reduce coverage and subsequent loss in weed control.

Spray volumes of 3-175 gallons per acre with spray pressures adjusted to 20-40 psi are appropriate. Use higher spray volumes for dense weed populations.

Hand operated sprayers including backpack sprayers, compression sprayers, and knapsack sprayers are appropriate for small turfgrass areas when power equipment is unavailable, uneconomical, or impractical.

This product may cause injury to susceptible/nontarget plants at the use site by contacting the foliage, stems, or roots. To prevent injury to susceptible crops and other desirable broadleaf plants including but not limited to cotton, legumes, tobacco, tomatoes, garden/vegetable crops, and ornamentals (flowers, trees, and shrubs) avoid contact with the spray solution, spray droplets, and spray mist (fine droplets). Applications are recommended only when there is no potential hazard from spray drift during dormant and active growth periods. Do not apply when conditions are conducive to spray drift from the use site to untreated areas.

After using this product, clean sprayer with soap or detergent and water, or an approved spray tank cleaner and rinse thoroughly before applying other pesticides.

WHERE TO USE:

SpeedZone provides selective broadleaf control in warm-season and cool-season turfgrass in five (5) use sites.

- *Institutional sites* are defined as turf areas around properties or facilities providing a service to public or private organizations including, but not limited to hospitals, nursing homes, schools, museums, libraries, sport facilities, golf courses (fairways, aprons, and roughs), and office buildings.
- *Ornamental sites* include turfgrass established around residences, parks, streets, retail outlets, cemeteries, industrial and institutional buildings, recreation areas, fairgrounds, and areas adjacent to athletic fields.
- *Residential/domestic sites* are defined as areas associated with the household or home life including, but not limited to apartment complexes, condominiums, and patient care areas of nursing homes, mental institutions, hospitals, or convalescent homes.
- *Agricultural site:* Commercial sod production.

- **Noncropland Sites:** Highway rights-of-way (principal, interstate, county, private, and unpaved roads): Roadsides, roadside ditches, road shoulders, road embankments, dividers, and medians. Municipal, state, and federal lands: Airports and military installations.

Prohibitions of Sites:

- Do not apply to any body of water such as lakes, streams, rivers, ponds, reservoirs, or estuaries (salt water bays). Do not apply to any shorelines (noncropland sites adjacent to the edges of a body of water) for lakes, streams, rivers, ponds, reservoirs, or estuaries (salt water bays).
- Do not apply to wetlands (swamps, bogs, potholes, or marshes).
- Do not apply to agricultural irrigation water or on agricultural irrigation ditchbanks and canals.
- Do not apply to agricultural drainage water or on agricultural ditchbanks.

Turfgrass tolerance:

- The turfgrass tolerance to SpeedZone may vary and temporary turfgrass yellowing may occur on certain varieties (F1) hybrids of hybrid bermudagrass. Environmental conditions and certain spray tank additives (e.g. adjuvants, wetting agents, surfactants), liquid fertilizers, and tank mixtures containing other emulsifiable concentrates may reduce the selectivity on the turfgrass.

These cool-season and warm-season turfgrass species may be treated:

Cool-Season Turf

Kentucky bluegrass, Annual bluegrass, Annual ryegrass, Perennial ryegrass, Tall fescue, Red or fine leaf fescues, Creeping and Colonial bentgrass (excluding golf greens) and mixtures of cool-season species in noncropland areas established for roadside vegetation management or for low maintenance. (Kentucky bluegrass, tall fescue, smooth bromeagrass, and orchardgrass).

Warm-Season Turf

Common bermudagrass, Hybrid bermudagrass and Zoysiagrass.

Prohibitions:

- Do not apply this product to bentgrass greens, carpetgrass, dichondra, legumes, and lawns where desirable clovers are present.

APPLICATION SCHEDULES:

Early postemergent applications of SpeedZone are recommended for annual, biennial, and perennial weeds. Apply SpeedZone to broadleaf weeds that are young and actively growing for the best results. SpeedZone combines a contact herbicide with systemic herbicides and provides little or no residual activity at recommended use rates.

SpeedZone may be applied as a single broadcast application or as split/sequential broadcast applications in the spring, summer, or fall. Spring and fall treatments under adequate soil moisture conditions are preferred to the summer treatments. Generally, summer broadcast applications to older, drought stressed weeds are less effective.

Sequential broadcast applications or follow-up applications as spot treatments at a 2-6 week interval are recommended for more mature weeds, for dense infestations, and for adverse environmental conditions.

Spot treatments during the summer may be appropriate for sparse infestations, or as a follow-up treatment anytime broadleaf weeds are susceptible. Apply on a spray-to-wet basis for the best results.

Extremes in environmental conditions e.g. temperature and moisture, soil conditions, and cultural practices may affect the activity of SpeedZone. Under warm moist conditions, herbicide symptoms may be accelerated. While under very dry conditions, the expression of herbicide symptoms is delayed, and weeds hardened off by drought are less susceptible to SpeedZone.

For newly seeded areas:

The application of SpeedZone to grass seedlings is recommended after the second mowing.

For newly sodded, sprigged, or plugged areas:

The application of SpeedZone to newly sodded, sprigged, or plugged grasses should be delayed until 3 to 4 weeks after the sodding, sprigging, or plugging operations.

For dormant turf:

Applications to dormant bermudagrass and dormant zoysiagrass are suggested.

Prohibitions for application schedules:

- Do not broadcast apply when air temperatures exceed 90°F; some injury may be expected with spot treatments when air temperatures exceed 90°F.

HOW MUCH TO USE: USE RATES AND SPRAY VOLUMES FOR TURFGRASS:

Generally, the lower application rates within the specified range will provide satisfactory control of sensitive weed species. The higher application rates within the specified range will be required for dense infestations of perennial weeds, for adverse/extreme environmental conditions, or for weeds beyond the appropriate growth stages.

The maximum application rate to turf is 1.0 pound 2,4-D acid equivalent per acre per application per site. The maximum number of broadcast applications per treatment site is 2 per year.

The maximum seasonal rate of carfentrazone-ethyl contained in this product with two (2) broadcast applications to turfgrass is 0.062 pounds of carfentrazone-ethyl per acre per season. The retreatment interval for sequential broadcast applications of this product on turfgrass is two (2) to six (6) weeks depending upon the growth stages of the target weeds.

Use rates and spray volumes of SpeedZone as a broadcast treatment for use on turfgrass are presented in Table 1.

TABLE 1. RATE RECOMMENDATIONS FOR SOD FARMS, ORNAMENTAL LAWNS AND TURFGRASS.

Species	Amount of Product, Pints/Acre	Spray Volume, Gallons/Acre	Amount of Product, fl. oz./1,000 sq. ft.	Spray Volume, Gallons per 1,000 sq. ft.
COOL-SEASON TURF				
Kentucky bluegrass, Annual bluegrass, Annual ryegrass, Perennial ryegrass, Tall fescue, Red or fine leaf fescues, Creeping and Colonial bentgrass (excluding golf greens).	3.0 - 5.0	3 - 175	1.1 - 1.8	0.1 - 4.0
Mixtures of cool-season species established for aesthetic purposes.	3.0 - 5.0	3 - 175	1.1 - 1.8	0.1 - 4.0
Mixtures of cool-season species in noncropland areas established for roadside vegetation management or for low maintenance. (Kentucky bluegrass, tall fescue, smooth bromeagrass & orchardgrass.)	3.0 - 5.0	3 - 175	1.1 - 1.8	0.1 - 4.0
WARM-SEASON TURF				
Common bermudagrass, Hybrid bermudagrass and Zoysiagrass.	2 - 4	3 - 175	0.75 - 1.5	0.1 - 4.0
NOTE: Maximum control of weeds will be obtained with early to mid-spring or mid to late fall applications. Higher rates, listed above, should be used in warmer temperatures (above 70°F).				

SPOT TREATMENTS WITH HAND OPERATED SPRAYERS (INCLUDING BACKPACK SPRAYERS, COMPRESSION SPRAYERS, AND KNAPSACK SPRAYERS):

- For cool-season turfgrass, mix 1.1-1.8 fl. oz. of SpeedZone per one (1.0) gallon of water for treatment of approximately 1,000 sq. ft of turfgrass. Apply any time the emerged broadleaf weeds are susceptible. Spray the target weeds thoroughly and wet the entire leaf surface of the undesirable plants.
- For warm-season turfgrass, mix 0.75-1.5 fl. oz. of SpeedZone per one (1.0) gallon of water for treatment of approximately 1,000 sq. ft of turfgrass. Apply any time the emerged broadleaf weeds are susceptible. Spray the target weeds thoroughly and wet the entire leaf surface of the undesirable plants.

SpeedZone may be tank mixed with other herbicides EPA-registered for use on turfgrass to broaden the weed control spectrum compared to the products alone. These tank mixtures must be used according to the most restrictive label limitations and precautions. No label dosage rate should be exceeded. Follow the labeling of each companion product for precautionary statements, directions for use, dosage rates, and application schedules. Tank mixture recommendations are for use only in states where the companion products and application site are registered.

CULTURAL TIPS FOR IMPROVED CONTROL:

Irrigation:

- Do not apply this product through any type of irrigation system.
- Do not apply this product immediately before rainfall or irrigation.
- Rainfast period: Rainfall or irrigation occurring within 3-4 hours after application of this product may reduce the effectiveness.

Mowing:

- Delay mowing 1 to 2 days before and after the application of this product.

Reseeding interval:

- Treated areas may be reseeded 2 weeks after application.

BROADLEAF WEEDS CONTROLLED:

SpeedZone will control or suppress the following broadleaf weeds and will control or suppress other broadleaf weeds that are susceptible to 2,4-D.

BROADLEAF WEEDS

Annual fleabane	Field oxeye-daisy	Poison ivy
Aster, white heath & white prairie	(*creeping oxeye)	Poison oak
Bedstraw	Field pennycress	Prostrate knotweed
Beggarticks	Filaree, whitestem	(*knotweed)
Beggarweed, creeping	& redstem	Puncturevine
Bindweed	Florida pusley	Purple cudweed
Birdsfoot trefoil	Ground ivy	Purslane
Black medic	Groundsel	Ragweed
Broadleaf plantain	Hairy bittercress	Redweed
Buckhorn plantain	Hawkweed	Red sorrel
Bull thistle	Healall	(*sheep sorrel)
Burclover	Henbit	Roundleaf greenbriar
Burdock, common	Horsenettle	Shepherdspurse
Buttercup, creeping	Horseweed	Spotted spurge
Carolina geranium	Innocence	Spurge
Carpetweed	(Blue-eyed Mary)	Star-of-Bethlehem
Chickweed, common	Jimsonweed	Sunflower
Chicory	Kochia	Thisle
Cinquefoil	Lambsquarters	Velvetleaf (*buttonweed)
Clover	Lawn burweed	Venice mallow
Cocklebur	Lespedeza, common	Veronica
Common mullein	Mallow, common	(*corn speedwell)
Compassplant	Matchweed	Virginia buttonweed
Curly dock	Mouseear chickweed	Virginia-creeper
Dandelion	Mustard	Western salsify
Dayflower	Nettle	White clover (*Dutch
Deadnettle	Old world	clover, honeysuckle
Dock	diamond flower	clover, white trefoil,
Dogfennel	<i>Oxalis</i>	& purplewort)
Dovefoot geranium	(*yellow woodsorrel	Wild carrot
English daisy	& creeping woodsorrel)	Wild garlic
False dandelion	Parsley-piert	Wild geranium
(*spotted catsear	Pennsylvania	Wild lettuce
& common catsear)	smartweed	Wild mustard
Field bindweed	Pennywort (*dollarweed)	Wild onion
(*morningglory	Pepperweed	Wild strawberry
& creeping jenny)	Pigweed	Wild violet
Field madder	Pineappleweed	Yarrow
	Plantain	Yellow rocket

*Synonyms

PARTICULAR PURPOSE, WHICH ARE EXPRESSLY DISCLAIMED.

This limited warranty does not extend to the use of the product inconsistent with label instructions, warnings or cautions, or to use of the product under abnormal conditions such as drought, excessive rainfall, tornadoes, hurricanes, etc. These factors are beyond the control of the manufacturer or the seller. Any damages arising from a breach of the manufacturer's warranty shall be limited to direct damages, and shall not include indirect or consequential damages such as loss of profits or values, except as otherwise provided by law.

The terms of this Limited Warranty and Disclaimer cannot be varied by any written or verbal statements or agreements. No employee or agent of the seller is authorized to vary or exceed the terms of this Limited Warranty and Disclaimer in any manner.

PROFORM®, SPEED-ZONE® and TRIMEC® are registered trademarks of PBI/Gordon Corporation.

654 AP010606
EPA REG. NO. 2217-833

Manufactured By
G pbi/gordon
corporation
An Employee-Owned Company
1217 West 12th Street
Kansas City, Missouri 64101
www.pbigordon.com

STORAGE & DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

STORAGE: Store in original container in a locked storage area inaccessible to children or pets. Keep from freezing.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your state Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: For Metal Containers - Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

For Plastic Containers - Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities by burning. If burned stay out of smoke.

LIMITED WARRANTY AND DISCLAIMER

The manufacturer warrants only that the chemical composition of this product conforms to the ingredient statement given on the label, and that the product is reasonably suited for the labeled use when applied according to the Directions for Use.

THE MANUFACTURER NEITHER MAKES NOR INTENDS ANY OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A

Issue Date 07-Nov-2014

Revision Date 11-Jan-2019

Version 4

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name PowerZone® Broadleaf Herbicide for Turf

Other means of identification

Product Code PBI FP 6531076

EPA Pesticide Registration Number 2217-834

Product Size 4/1 U. S. Gal.

Recommended use of the chemical and restrictions on use

Recommended Use Herbicide.

Uses advised against No information available.

Details of the supplier of the safety data sheet

Supplier

PBI Gordon Corporation
P.O. Box 860350
Shawnee, KS 66286

Manufacturer

PBI Gordon Corporation
P.O. Box 860350
Shawnee, KS 66286

Company Name

PBI Gordon Corporation
P.O. Box 860350
Shawnee, KS 66286

Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute Oral Toxicity	Category 4
Acute dermal toxicity	Category 4
Acute Inhalation Toxicity - Gases	Category 4
Acute Inhalation Toxicity - Dusts and Mists	Category 4
Skin Corrosion/Irritation Category	Category 2
Serious eye damage/eye irritation	Category 2B
Skin Sensitization	Category 1
Aspiration Toxicity	Category 1
Acute Aquatic Toxicity	Category 1
Chronic Aquatic Toxicity	Category 1
Flammable liquids	Category 4

Label elements

Emergency Overview

Danger

Hazard statements

Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled. Causes skin irritation. Causes eye irritation. May cause an allergic skin reaction. May be fatal if swallowed and enters airways. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Combustible liquid.



Appearance Liquid

Physical state Liquid

Odor Esters

Precautionary Statements - Prevention

- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Wear protective gloves/protective clothing/eye protection/face protection
- Avoid breathing dust/fume/gas/mist/vapors/spray
- Use only outdoors or in a well-ventilated area
- Avoid release to the environment
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking

Precautionary Statements - Response

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- IF ON SKIN: Wash with plenty of soap and water
- Call a POISON CENTER or doctor/physician if you feel unwell
- Wash contaminated clothing before reuse
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- Call a POISON CENTER or doctor/physician if you feel unwell
- Rinse mouth
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- Do NOT induce vomiting
- In case of fire: Use CO₂, dry chemical, or foam for extinction
- Collect spillage

Precautionary Statements - Storage

- Store locked up
- Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal

- Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Have the product label with you when calling a poison control center or doctor or going in for treatment. You may also contact 1-877-800-5556 for emergency medical treatment advice.

Other information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No	Weight-%
MCPA EH Ester	29450-45-1	41.98
Trade Secret	Proprietary	10-20*
Trade Secret	Proprietary	0-10*
R(+)(2 Methyl-4-chlorophenoxy)propionic acid (MCP)	16484-77-8	5.39
3,6-Dichloro-o-anisic acid (Dicamba)	1918-00-9	2.69
Carfentrazone-ethyl	128639-02-1	0.48

* The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

Description of first aid measures

General advice	If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Inhalation	Move to fresh air in case of accidental inhalation of vapors or decomposition products. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If symptoms persist, call a physician.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician immediately.
Self-protection of the first aider	Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms	No information available.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Contains petroleum distillate - vomiting may cause aspiration pneumonia.
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5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Foam. Carbon dioxide (CO₂). Dry chemical.

Specific hazards arising from the chemical

No information available.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions	Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
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Environmental precautions

Environmental precautions	Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.
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Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Dam up. Soak up with inert absorbent material. Cover liquid spill with sand, earth or other non-combustible absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Use with local exhaust ventilation.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep in properly labeled containers. Keep from freezing.
Incompatible materials	None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines	
Other Information	Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls	Ensure adequate ventilation, especially in confined areas.
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Individual protection measures, such as personal protective equipment

Eye/face protection	Tight sealing safety goggles. Face protection shield.
Skin and body protection	Wear protective gloves and protective clothing.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
General Hygiene Considerations	When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Esters
Appearance	Liquid	Odor threshold	No information available
Color	Amber		
Property	Values	Remarks • Method	
pH	Not Applicable		
Melting point/freezing point	<35 °F		
Boiling point / boiling range	> 93 °C / 200 °F		
Flash point	> 93 °C / > 200 °F	Pensky-Martens Closed Cup (PMCC)	

Evaporation rate	< 1
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	>1
Specific Gravity	0.9813
Water solubility	Emulsifiable
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Oxidizing properties	No information available

Other Information

Density 8.18 pounds/gallon

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous polymerization

Will not occur.

Conditions to avoid

Keep out of reach of children.

Incompatible materials

None known.

Hazardous decomposition products

May emit toxic fumes under fire conditions. Hydrogen chloride. Nitrogen oxides (NOx). Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Irritant, moderate respiratory.
Eye contact	Moderately irritating to the eyes.
Skin Contact	Moderate skin irritation.
Ingestion	Ingestion of large amounts can cause abdominal discomfort, nausea, and vomiting.

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
MCPA EH Ester 29450-45-1	= 1300 mg/kg (Rat)	-	-
Trade Secret	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
Trade Secret	= 1870 µL/kg (Rat)	= 1110 µL/kg (Rabbit)	-

R(+)/2(2 Methyl-4-chlorophenoxy)propionic acid (MCP) 16484-77-8	= 1050 mg/kg (Rat)	> 4 g/kg (Rat)	-
3,6-Dichloro-o-anisic acid (Dicamba) 1918-00-9	= 1039 mg/kg (Rat)	= 1716 mg/kg (Rabbit) > 1 g/kg (Rat) > 2 g/kg (Rabbit)	-
Carfentrazone-ethyl 128639-02-1	= 5143 mg/kg (Rat)	> 4000 mg/kg (Rat)	= 5.09 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization May cause sensitization by skin contact.
Germ cell mutagenicity No information available.
Carcinogenicity The International Agency for Research on Cancer (IARC) lists chlorophenoxy herbicides in its Group 2B (limited evidence for Carcinogenicity in humans.) The US EPA has given the chlorophenoxy Herbicides 2,4-D, 2,4-DP, MCP, and MCPA a Class D classification (not classifiable as to human carcinogenicity.) More current 2,4-D lifetime feeding studies in rats and mice did not show carcinogenic effects and a recent World Health Organization (WHO) review of 2,4-D toxicology has concluded that 2,4-D is not a carcinogen. The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
MCPA EH Ester 29450-45-1		Group 2B		
R(+)/2(2 Methyl-4-chlorophenoxy)propionic acid (MCP) 16484-77-8		Group 2B		X

IARC (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Chronic toxicity Avoid repeated exposure. Repeated contact may cause allergic reactions in very susceptible persons.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

Unknown Toxicity 1 % of the mixture consists of ingredient(s) of unknown toxicity

LD50 Oral VALUE (mg/kg) > 2000 mg/kg Rat-male Rat-female

LD50 Dermal VALUE > 2000 mg/kg Rat-female Rat-male

LC50 Inhalation (DUST) VALUE > 2.06 mg/L Rat-male Rat-female

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (inhalation-gas) 2732 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects

0% of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
MCPA EH Ester 29450-45-1	0.46: 72 h Pseudokirchneriella subcapitata mg/L EC50 0.43: 96 h Pseudokirchneriella subcapitata mg/L EC50	3.2 - 4.6: 96 h Lepomis macrochirus mg/L LC50 flow-through 3.2: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.55: 96 h Lepomis macrochirus mg/L LC50 static		0.29: 48 h Daphnia magna mg/L EC50
Trade Secret		2.2: 96 h Lepomis macrochirus mg/L LC50 static 2.4: 96 h Oncorhynchus mykiss mg/L LC50 static 45: 96 h Pimephales promelas mg/L LC50 flow-through		4720: 96 h Den-dronereides heteropoda mg/L LC50
Trade Secret		1.8: 96 h Oncorhynchus mykiss mg/L LC50		

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging

Do not reuse container, unless specified by the manufacturer.

14. TRANSPORT INFORMATION

DOT

Not regulated

TDG

Not regulated

MEX

Not regulated

ICAO (air)

UN/ID no.

UN3082

Proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Hazard class

9

Packing group

III

Special Provisions

A97, A158, A197

Description

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MCPA EH Ester, Carfentrazone-ethyl), 9, III

IATA

Limited quantity applies with an inner packaging less than 5 L or gross package weight less than 30 kg.

UN number

UN3082

UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Transport hazard class(es)

9

Packing group

III

Special Provisions

A97, A158, A197

Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MCPA EH Ester, Carfentrazone-ethyl), 9, III
IMDG	Limited quantity applies with an inner packaging less than 5 L or gross package weight less than 30 kg.
UN number	UN3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Transport hazard class(es)	9
Packing group	III
EmS-No.	F-A, S-F
Special Provisions	274, 335, 969
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MCPA EH Ester, Carfentrazone-ethyl), 9, III, Marine Pollutant

15. REGULATORY INFORMATION

U.S. EPA Label Information

EPA Pesticide Registration Number 2217-834

Federal Insecticide, Fungicide, Rodenticide Act Regulations

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 as required on the pesticide label:

EPA Pesticide Label

Caution

Keep out of the reach of children

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION: Causes moderate eye irritation. Harmful if absorbed through the skin. Avoid contact with skin, eyes, or clothing.

Harmful if swallowed. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Environmental Hazards

This pesticide may adversely affect non-target plants. 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 water when disposing of equipment washwater or rinsate. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

International Inventories

TSCA	Not Listed
DSL/NDSL	Not Listed
EINECS/ELINCS	Not Listed
ENCS	Not Listed
IECSC	Not Listed
KECL	Not Listed
PICCS	Not Listed
AICS	Not Listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

Chemical name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
MCPA EH Ester				X			X			X

Trade Secret	X	X		X			X	X	X	X
Trade Secret	X	X					X	X	X	X
R(+)(2-(2-Methyl-4-chlorophenoxy)propionic acid (MCP))				X						
3,6-Dichloro-o-anisic acid (Dicamba)				X		X		X	X	X
Carfentrazone-ethyl							X			

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
3,6-Dichloro-o-anisic acid (Dicamba) - 1918-00-9	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
3,6-Dichloro-o-anisic acid (Dicamba) 1918-00-9	1000 lb			X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
3,6-Dichloro-o-anisic acid (Dicamba) 1918-00-9	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations**U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
3,6-Dichloro-o-anisic acid (Dicamba) 1918-00-9	X	X	X

International Regulations**Mexico - Grade**

Moderate risk, Grade 2

16. OTHER INFORMATION

<u>NFPA</u>	Health hazards 2	Flammability 1	Instability 0	Physical and Chemical Properties -
<u>HMIS</u>	Health hazards 2	Flammability 1	Physical hazards 0	Personal protection X

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of PBI Gordon Corporation's knowledge, information and belief at the date of this publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process, unless specified in the text. PBI GORDON CORPORATION MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. Given the variety of factors that can affect the use and application of this product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the product to determine whether it is fit for a particular purpose and suitable for user's method of use or application. Each user is also responsible for evaluating the conditions of use and designing the appropriate protective mechanisms to prevent employee exposures, property damage, or release to the environment. PBI Gordon Corporation assumes no responsibility for injury to the recipient or third persons, or for any damage to any property resulting from misuse of the product.

End of Safety Data Sheet



Herbicide

An herbicide for the selective contact and residual control of weeds in ornamental turfgrasses

Active Ingredient:

Mesotrione* 40.0%

Other Ingredients: 60.0%

Total: 100.0%

Tenacity is formulated as a suspension concentrate and contains 4 lb of mesotrione per gallon.

*CAS No. 104206-82-8

KEEP OUT OF REACH OF CHILDREN.

CAUTION

See additional precautionary statements and directions for use inside attached booklet.

EPA Reg. No. 100-1267

EPA Est. 100-NE-001^{MHA}

EPA Est. 11773-IA-01^{VWC}

Superscript is first three letters of batch code on container.

SCP 1267A-L1D 0922

1 gallon

Net Contents

FIRST AID

If on skin or clothing	- Take off contaminated clothing. - Rinse skin immediately with plenty of water for 15-20 minutes. - Call a poison control center or doctor for treatment advice.
If in eyes	- 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 poison control center or doctor for treatment advice.
If inhaled	- Move person to fresh air. - If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. - Call a poison control center or doctor for further treatment advice.
If swallowed	- Call a poison control center or doctor immediately for treatment advice. - Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless told to do so by the poison control center or doctor. DO NOT give anything by mouth to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

HOTLINE NUMBER

For 24 Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), Call
1-800-888-8372

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION

Harmful if absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly with soap and water before eating, drinking, chewing gum, using tobacco, or using toilet.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves made of barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, natural rubber ≥ 14 mils, polyethylene, polyvinyl chloride (PVC) ≥ 14 mils, or VitonTM ≥ 14 mils

User Safety Requirements

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

Engineering Control Statements

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing
- Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

DO NOT apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment wash water or rinsate.

continued...

PRECAUTIONARY STATEMENTS (continued)

Non-Target Organism Advisory

This product is toxic to plants and may adversely impact the forage habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

Groundwater Advisory

Mesotrione is known to leach through soil into groundwater under certain conditions as a result of label use. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory

This product may impact surface water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow groundwater. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application.

A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading for mesotrione from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

Physical and Chemical Hazards

DO NOT use or store near heat or open flame.

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with labeling.

DO NOT apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

DO NOT enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours. Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Shoes plus socks
- Chemical-resistant gloves made of barrier laminate, butyl rubber ≥14mils, nitrile rubber ≥14mils, neoprene rubber ≥14mils, natural rubber ≥14mils, polyethylene, polyvinyl chloride (PVC) ≥14mils, or Viton ≥14mils

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

DO NOT enter treated areas without protective clothing until sprays have dried.

USE INFORMATION

Tenacity is a systemic preemergence and postemergence herbicide for the selective contact and residual control of weeds in turfgrasses. When applied preemergence, weeds absorb Tenacity during emergence from the soil. Dry conditions following application may reduce the preemergence activity. If rainfall (0.15 inches) has not occurred within 10 days after a preemergence application, activate with 0.15 inches of irrigation. When used postemergence, susceptible weeds absorb Tenacity through foliar contact and soil absorption. Foliage of treated weeds cease growth after application, then turn white (loss of chlorophyll) and death may take up to three weeks. A repeat application is required after two to three weeks for improved postemergence weed control. For best results, add a non-ionic surfactant for postemergence applications.

Tenacity may cause temporary whitening of turfgrass foliage. Symptoms appear five to seven days after application and last for several weeks. A repeat application to the same site causes less whitening of the plant tissue.

Tenacity is an effective herbicide for weed control prior to or during seeding of certain turfgrasses during turf renovation (see section on use in **New Seedings**). If used preemergence in established turf, tank mixtures with preemergence herbicides including Barricade® 65WG Herbicide (proflumicarb; EPA Reg. No. 100-834) are advised for longer residual and broad spectrum weed control.

USE PRECAUTIONS

- Bentgrass, *Poa annua*, kikuyugrass, zoysiagrass, seashore paspalum and bermudagrass are sensitive to Tenacity applications. Avoid spraying these turf types unless control and/or injury can be tolerated. Maintain a five foot buffer between treated areas and bentgrass or *Poa annua* greens.
- Clean sprayer thoroughly after an application of Tenacity if same equipment is used to apply products to bentgrass and bentgrass/*Poa annua* turf areas.
- To reduce movement into sensitive species (e.g. bentgrass), keep people and pets off treated areas until spray has dried and irrigate lightly to move product from turf foliage before resuming normal irrigation.
- Avoid over-spray or drift of spray applications onto ornamentals or flower beds and gardens. Roses and daylilies are sensitive plant species.
- Avoid applications over the top of exposed roots of trees and ornamentals.

USE RESTRICTIONS

- **DO NOT** apply more than 8 fl oz (0.25 lb mesotrione) of Tenacity per acre in a single application.
- **DO NOT** apply more than 16 fl oz (0.50 lb mesotrione) of Tenacity per acre per year (i.e. 2 applications at the maximum single application rate).
- Wait a minimum of 14 days before retreating.
- **DO NOT** plant any crop other than turfgrass species for 18 months after the last application of Tenacity or injury may occur.
- **DO NOT** apply an organophosphate or carbamate insecticide within seven days of a Tenacity application as turf injury may occur.
- **DO NOT** apply through any type of irrigation system.
- **DO NOT** apply aerially.
- **DO NOT** use grass clippings from treated turf as mulch around trees or in vegetable/flower gardens.
- **DO NOT** use on golf course putting greens and maintain a five foot buffer between treated areas and putting greens.

TANK MIXTURES

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions, limitations, and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

- Tenacity has been tested in tank mixtures with Barricade 65WG Herbicide (proflumicarb, EPA Reg. No. 100-834), dicamba, Turflon® Ester (trifluralin, EPA Reg. No. 62719-258), Quicksilver™ Herbicide (carfentrazone, EPA Reg. No. 279-3301), Basagran® (bentazon, EPA Reg. No. 66330-413), Princep® (simazine, EPA Reg. No. 100-526), AAtrex® (atrazine, EPA Reg. No. 100-497 and 100-585), and metribuzin for safety and efficacy on turfgrasses. Other tank mixture partners may be safe but have not been tested. Turf managers wanting to tank mix Tenacity with other herbicides are advised to test on a small basis for compatibility, safety and efficacy before treating large areas.

MANDATORY SPRAY DRIFT MANAGEMENT

Groundboom Applications:

- Do not release spray at a height greater than 3 feet above the ground or crop canopy.
- Applicators must select nozzle and pressure that deliver medium or coarser droplets in accordance with American Society of Agricultural & Biological Engineers Standard 572 (ASABE S572.1).
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

Boomless Ground Applications:

- Applicators must select nozzle and pressure that deliver medium or coarser droplets in accordance with American Society of Agricultural & Biological Engineers Standard 572 (ASABE S572).
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

SPRAY DRIFT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size – Ground Boom

- Volume – Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure – Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle – Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

BOOM HEIGHT – Ground Boom

For ground equipment, the boom should remain level with the turf and have minimal bounce.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

Handheld Technology Applications

- Take precautions to minimize spray drift.

USE SITES

Tenacity may be used for weed control in turfgrass species listed on this label in commercial and residential sites. Use sites include non-crop areas: golf courses, sod farms, athletic fields, parks, residential and commercial properties, cemeteries, airports, and lawns.

TURFGRASS SPECIES

Tenacity has been tested on these species and found to be safe under trial conditions.

Species		Rate per Acre	Rate (lb ai/A)
Kentucky bluegrass	<i>Poa pratensis</i>	5-8 fl oz	0.156-0.25
Centipedegrass	<i>Eremachloa ophiuroides</i>	5-8 fl oz	0.156-0.25
Buffalograss	<i>Buchloe dactyloides</i>	5-8 fl oz	0.156-0.25
Tall fescue	<i>Festuca arundinacea</i>	5-8 fl oz	0.156-0.25
Perennial ryegrass*	<i>Lolium perenne</i>	5 fl oz	0.156
Fine fescue* (creeping red, chewings and hard)	<i>Festuca</i> spp.	5 fl oz	0.156
St. Augustinegrass* (grown for sod)	<i>Stenotaphrum secundatum</i>	4 fl oz	0.125

*See additional rate instructions below.

WEED RESISTANCE MANAGEMENT

MESOTRIONE	GROUP	27	HERBICIDE
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Tenacity is a Group 27 Herbicide (active ingredient is mesotrione, a HPPD inhibitor). Naturally occurring biotypes of certain broadleaf weed species with resistance to triazines, glyphosate, PPO, HPPD and ALS inhibiting herbicides are known to exist.

To help prevent the development of resistance, DO NOT apply less than the label specifies and rotate to an herbicide with a different mode of action if the maximum number of applications or rate of product has been met or weeds are not being controlled.

Principles of Herbicide Resistant Weed Management

Scout and know your turf

- Know weed species present in the field to be treated through scouting and field history. An understanding of weed biology is useful in designing a resistance management strategy. Ensure the weed management program will control all weeds present.
- Turf should be scouted prior to application to determine species present and growth stage. Always apply this herbicide at the labelled rate and correct timing for the weeds present in the turf.

Use good agronomic practices, start clean and stay clean

- Use good agronomic practices that enhance turf competitiveness.
- Plant into weed-free fields utilizing tillage or an effective burndown herbicide for control of emerged weeds.
- Sanitize equipment to avoid spreading seed or vegetative propagules prior to leaving fields.

Difficult to control weeds

- Difficult to control weeds may require sequential applications, such as a broad spectrum preemergence herbicide followed by one or more postemergence herbicide applications. Utilize herbicides containing different modes of action effective on the target weeds in sequential applications.

Do not overuse the technology

- Do not use more than two applications of this or any other herbicide with the same mode of action in a single growing season unless mixed with an herbicide with a different mode of action which provides overlapping spectrum for difficult to control weeds.

Scout and inspect turf following application

- Prevent an influx of weeds into the field by controlling weeds in areas surrounding turf.
- Scout fields after application to verify that the treatment was effective.
- Suspected herbicide resistant weeds may be identified by these indicators
 - o Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds.
 - o A spreading patch of non-controlled plants of a particular weed species; and
 - o Surviving plants mixed with controlled individuals of the same species.
- Report non-performance of this product to your Syngenta retailer, Syngenta representative, or call 1-866-Syngenta(a) (866-796-4368). If resistance is suspected ensure weed escapes are controlled using an herbicide with an effective mode of action and/or use non-chemical means to prevent further seed production.

Prevent weed escapes

- Do not allow weed escapes to produce seed or vegetative structures such as tubers or stolons which contribute to spread and survival.

Resistant Weeds

- Contact your local Syngenta representative, retailer, crop advisor or extension agent to determine if weeds resistant to modes of action contained in this product are present in your area.
- Do not assume that each listed weed is being controlled by multiple modes of action. Premixes are intended to broaden the spectrum of weeds that are controlled. Some weeds may be controlled by only one of the active ingredients in this product.
- If resistant biotypes have been reported, use the full labeled rate of this product, apply at the labeled timing, and tank-mix with an additional different mode of action product so there are multiple effective modes of application for each suspected resistant weed.

WEEDS CONTROLLED

Common Name	Scientific Name	Preemergence ¹	Postemergence ²
Barnyardgrass	<i>Echinochloa crusgalli</i>	Y	Y
Bentgrass, Creeping	<i>Agrostis stolonifera</i>	Y	Y
Bluegrass, Annual	<i>Poa annua</i>	Suppression	N
Buckhorn Plantain	<i>Plantago lanceolata</i>	Y	Y
Buttercup	<i>Ranunculus sardous</i>	.3	Y
Carpetweed	<i>Mollugo verticillata</i>	Y	Y
Chickweed, Common	<i>Stellaria media</i>	Y	Y
Chickweed, Mouseear	<i>Cerastium vulgatum</i>	Y	Y
Clover, Large Hop	<i>Trifolium aureum</i>	Y	Y
Clover, White	<i>Trifolium repens</i>	Y	Y
Crabgrass, Large	<i>Digitaria sanguinalis</i>	Y	Y ⁴
Crabgrass, Smooth	<i>Digitaria ischaemum</i>	Y	Y ⁴
Crabgrass, Southern	<i>Digitaria ciliaris</i>	Y	Y ⁴
Curly dock	<i>Rumex crispus</i>	-	Y
Dandelion, Catsear	<i>Hypochoeris radicata</i>	-	Y
Dandelion, Common	<i>Taraxacum officinale</i>	-	Y
Florida Betony	<i>Stachys floridana</i>	-	Y
Florida Pusley	<i>Richardia scabra</i>	-	Y
Foxtail, Yellow	<i>Setaria glauca</i>	Y	Y
Galinsoja	<i>Galinsoja ciliata</i>	Y	Y
Goosegrass	<i>Eleusine indica</i>	-	Y ⁴
Ground Ivy	<i>Glechoma hederacea</i>	-	Y
Healall	<i>Prunella vulgaris</i>	-	Y
Henbit	<i>Lamium amplexicaule</i>	-	Y
Lambsquarters, Common	<i>Chenopodium album</i>	Y	Y
Lawn Burweed	<i>Soliva sessilis</i>	-	Y
Lovegrass, Tufted	<i>Eragrostis pectinacea</i>	-	Y
Marestail	<i>Conyza canadensis</i>	-	Y
Lovegrass, Tufted	<i>Eragrostis pectinacea</i>	-	Y
Marestail	<i>Conyza canadensis</i>	-	Y
Nimblewill	<i>Muhlenbergia schreberi</i>	-	Y
Nutsedge, Yellow	<i>Cyperus esculentus</i>	-	Y
Oxalis	<i>Oxalis stricta</i>	-	Y
Pigweed, Redroot	<i>Amaranthus retroflexus</i>	Y	Y
Pigweed, Smooth	<i>Amaranthus hybridus</i>	Y	Y
Purslane, Common	<i>Portulaca oleracea</i>	Y	Y
Shepherd's purse	<i>Capsella bursa-pastoris</i>	Y	Y
Smartweed, Pale	<i>Polygonum lapathifolium</i>	Y	Y
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	Y	Y
Speedwell, Persian	<i>Veronica persica</i>	Y	-
Speedwell, Purslane	<i>Veronica peregrina</i>	Y	-

Common Name	Scientific Name	Preemergence ¹	Postemergence ²
Sowthistle	<i>Sonchus oleraceus</i>	-	Y
Swinecress	<i>Coronopus didymus</i>	-	Y
Thistle, Canada	<i>Cirsium arvense</i>	-	Y
Verbena	<i>Verbena hastata</i>	-	Y
Wild Carrot	<i>Daucus carota</i>	Y	Y
Wild Violet	<i>Viola pratincola</i>	-	Y
Windmillgrass	<i>Chloris verticillata</i>	-	Y

¹For broad spectrum preemergence activity apply with a grass preemergence herbicide such as Barricade 65WG Herbicide (proflaminate, EPA Reg. No. 100-834), except when used for weed control in new seedlings.

²Weed control with postemergence applications require a second application after 2 to 3 weeks. Apply to young, actively growing weeds with a NIS type surfactant.

³“-“ Not tested.

⁴For best postemergence control, apply to less than 4 tiller crabgrass and goosegrass.

APPLICATION INFORMATION

Please read and understand the USE PRECAUTIONS AND RESTRICTIONS under the USE INFORMATION section above prior to making applications.

Preemergence Application - Apply Tenacity at 4-8 fl oz per acre (0.125-0.25 lb ai/A) in at least 30 gallons of water per acre prior to weed seed germination. **DO NOT** exceed 5 fl oz per acre (0.156 lb ai/A) per application to perennial ryegrass or fine fescues or mixed stands that contain greater than 50% perennial ryegrass and/or fine fescue. **DO NOT** exceed 4 fl oz per acre (0.125 lb ai/A) to St. Augustinegrass sod. Make application close to anticipated weed seed germination. Tenacity should be combined with a preemergence herbicide such as Barricade 65WG Herbicide (proflaminate, EPA Reg. No. 100-834), for extended control of key annual monocot weeds including crabgrass and foxtail.

New Seedlings/New Lawn Establishment - Apply Tenacity at 5-8 fl oz per acre (0.156-0.25 lb ai/A) in at least 30 gallons of water per acre prior to seeding or post seeding of tolerant turfgrass species listed on this label, **except fine fescue**. Tenacity may reduce density of fine fescue seedlings. Tenacity can be used on grass seed blends that contain less than 20% by weight of hard or fine fescue. Tenacity will control many monocot and dicot weeds that compete with and slow the establishment of the turfgrass stands. Apply at grass seeding or close to seeding for best performance. Avoid spraying on newly germinated turfgrass plants. Wait until the newly germinated turf has been mowed two times or four weeks after emergence (whichever is longer) before making a postemergence application.

Postemergence Application - Apply Tenacity at 4-8 fl oz per acre (0.125-0.25 lb ai/A) in at least 30 gallons of water per acre. Apply with a NIS type surfactant. A repeat application at two to three weeks may be required for adequate weed control. Weed control is most effective on young, actively growing weeds. Efficacy will be reduced under moisture stress or from applications to mature weeds.

Control of bentgrass (*Agrostis* spp.) and nimblewill (*Muhlenbergia schreberi*) - Apply Tenacity at 5 fl oz per acre (0.156 lb ai/A) in at least 30 gallons of water per acre at two to three week interval for up to three applications. Apply with a NIS surfactant. Bentgrass control may be more effective in the late summer/early fall just prior to onset of renewed bentgrass growth, than spring/early summer applications.

St. Augustinegrass (sod uses only) and Centipedegrass, if Tenacity is tank mixed with AAtrex (atrazine) or Princep (simazine) **DO NOT** exceed 4 fl oz of Tenacity and 0.5 lb active ingredient per acre of atrazine or simazine. Apply combination to established turf only. See AAtrex and Princep labels for restrictions.

Dormant bermudagrass applications only - Apply Tenacity at 5 fl oz/A (0.156 lb ai/A) to control winter weeds (listed in the WEEDS CONTROLLED Table) on dormant bermudagrass. Repeat application in 2 to 3 weeks. Applications made to semi-dormant turf will cause whitening of the bermudagrass.

For Use Only in the State of Florida - For control of goosegrass on bermudagrass athletic fields and golf courses (except greens), apply Tenacity (mesotrione, EPA Reg. No. 100-1267; 5 to 8 fl oz/A (0.156 to 0.25 lb ai/A)) + Princep Liquid (simazine, EPA Reg. No. 100-526; 15 to 25 fl oz/A (0.47 to 0.78 lb ai/A)) followed two weeks later by Tenacity (5 to 8 fl oz/A) + Princep Liquid (15 to 25 fl oz/A) + Pennant Magnum® (s-metolachlor, EPA Reg. No. 100-950; 20.8 fl oz/A (1.24 lb ai/A)). Application may be applied during spring, mid-summer or early fall. Use higher rates on larger weeds or heavy infestation. Apply mixtures in 40 to 60 gallons of water per 1,000 sq ft with flat-fan nozzles producing medium to coarse droplets. Add a non-ionic surfactant at 0.25% v/v of final spray solution. These treatments induce mild to moderate phytotoxicity in 'Tifway 419' hybrid bermudagrass. Full recovery typically occurs within 7 to 14 days after application, but the severity and recovery time vary based on turf conditions and environmental factors. Certain common bermudagrass varieties (including Sahara, Vamont, Yukon, and Mohawk) and zoysiagrasses are very sensitive to the mixture of Tenacity + Princep. Before applying on a large scale, test the mixture in an inconspicuous location to determine the level of turf safety in your location. The safety of this mixture has not been tested on seashore paspalum or bermudagrass varieties other than those listed above.

Spot Application of Tenacity (apply at 1 gallon per 1000 sq. ft.)

Spray Mix	Rate of Tenacity (teaspoons)	NIS adjuvant (teaspoons)
2 gal	1	3

DO NOT apply more than 16 oz of Tenacity per acre per year (equivalent to a maximum of 0.50 lb of mesotrione per acre per year).

Tenacity Rate Conversion Table

fl oz product/1000 sq ft	fl oz product/A	lb ai/A
0.092	4	0.125
0.115	5	0.156
0.184	8	0.25

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage and disposal.

Pesticide Storage

Keep container tightly closed when not in use. **DO NOT** store near seed, fertilizers, or foodstuffs. Can be stored at temperatures as low as -20°F. Keep away from heat and flame.

Pesticide Disposal

Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Handling

Non-refillable container. **DO NOT** reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or mix tank or store rinsate for later use and disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of this product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and (2) Buyer and User assume the risk of any such use. To the extent permitted by applicable law, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

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Viton™ is a trademark of The Chemours Company FC, LLC.

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For non-emergency (e.g. current product information) call
Syngenta Crop Protection at 1-800-334-9481.

Manufactured for:
Syngenta Crop Protection, LLC
P.O. Box 18300
Greensboro, North Carolina 27419-8300
SCP 1267A-L1D 0922

TENACITY®

Date: 6/16/2015
Replaces: 12/10/2014

1. PRODUCT IDENTIFICATION

Product identifier on label: **TENACITY®**
Product No.: A12738A
Use: Herbicide
Manufacturer: Syngenta Crop Protection, LLC
Post Office Box 18300
Greensboro NC 27419
Manufacturer Phone: 1-800-334-9481
Emergency Phone: 1-800-888-8372

2. HAZARDS IDENTIFICATION

Classifications: Specific Target Organ Toxicity: Repeated Category 2
Signal Word (OSHA): Warning
Hazard Statements: May cause damage to organs through prolonged or repeated exposure

Hazard Symbols:



Precautionary Statements: Do not breathe mist, vapors, spray.
Get medical advice if you feel unwell.
Dispose of contents and container in accordance with local regulations.

Other Hazard Statements: Flammable hydrogen gas may be formed on contact with incompatible metals. See "Conditions to Avoid", Section 10.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration
Ethylene Glycol	Ethylene Glycol	107-21-1	<15%
Other ingredients	Other ingredients	Trade Secret	>45%
2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1,3-cyclohexanedione	Mesotrione	104206-82-8	40.0%

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

TENACITY®

Date: 6/16/2015

Replaces: 12/10/2014

4. FIRST AID MEASURES

Have the product container, label or Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

- Ingestion:** If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Eye Contact:** If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Skin Contact:** If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Inhalation:** If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Most important symptoms/effects:

Not Applicable

Indication of immediate medical attention and special treatment needed:

There is no specific antidote if this product is ingested.

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use dry chemical, foam or CO2 extinguishing media. If water is used to fight fire, dike and collect runoff.

Specific Hazards:

Flammable hydrogen gas may be formed on contact with incompatible metals. See "Conditions to Avoid", Section 10.

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Special protective equipment and precautions for firefighters:

Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

Follow exposure controls/personal protection outlined in Section 8.

Methods and materials for containment and cleaning up:

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

TENACITY®

Date: 6/16/2015

Replaces: 12/10/2014

7. HANDLING AND STORAGE

Precautions for safe handling:

Spray solutions of this product should be mixed, stored and applied using only plastic, plastic-lined steel, stainless steel or fiberglass/plastic containers. Concentrate should not be stored or maintained in long-term contact with galvanized steel, carbon steel, aluminum, brass or cast iron.

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Conditions for safe storage, including any incompatibilities:

Not Applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Occupational Exposure Limits:

Chemical Name	OSHA PEL	ACGIH TLV	Other	Source
Ethylene Glycol	Not Established	100 mg/m ³ (ceiling) [aerosol]	Not Established	Not Applicable
Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Mesotrione	Not Established	Not Established	5 mg/m ³ TWA	Syngenta

Appropriate engineering controls:

Use effective engineering controls to comply with occupational exposure limits (if applicable).

Individual protection measures:

Ingestion:

Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Eye Contact:

Where eye contact is likely, use chemical splash goggles.

Skin Contact:

Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear.

Inhalation:

A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

TENACITY®

Date: 6/16/2015

Replaces: 12/10/2014

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Beige to tan liquid

Odor: Faint; pleasant

Odor Threshold: Not Available

pH: 2.4 - 2.8 @ 68°F (20°C)

Melting point/freezing point: Not Available

Initial boiling point and boiling range: Not Available

Flash Point (Test Method): > 200°F

Flammable Limits (% in Air): Not Available

Flammability: Can burn in fire, releasing toxic vapors.

Vapor Pressure: Mesotrione < 4.3 x 10⁻⁸ mmHg @ 68°F (20°C)

Vapor Density: Not Available

Relative Density: 1.2 g/ml ; 10 lbs/gal @ 68°F (20°C)

Solubility (ies): Mesotrione 160 mg/l @ 68°F (20°C) (99.7% pure)

Partition coefficient: n-octanol/water: Not Available

Autoignition Temperature: Not Available

Decomposition Temperature: Not Available

Viscosity: Not Available

Other: None

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.

Chemical stability: Stable under normal use and storage conditions.

Possibility of hazardous reactions: Will not occur.

Conditions to Avoid: Spray solutions of this product should be mixed, stored and applied using only plastic, plastic-lined steel, stainless steel or fiberglass/plastic containers. Concentrate should not be stored or maintained in long-term contact with galvanized steel, carbon steel, aluminum, brass or cast iron.

Incompatible materials: None known.

Hazardous Decomposition Products: Not Available

11. TOXICOLOGICAL INFORMATIONHealth effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Not Applicable

Delayed, immediate and chronic effects of exposure: Not Applicable

TENACITY®

Date: 6/16/2015

Replaces: 12/10/2014

Numerical measures of toxicity (acute toxicity/irritation studies (finished product))

Ingestion:	Oral (LD50 Rat) :	> 5000 mg/kg body weight
Dermal:	Dermal (LD50 Rat) :	> 5000 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) :	> 5.19 mg/l air - 4 hours
Eye Contact:	Mildly Irritating (Rabbit)	
Skin Contact:	Slightly Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

Reproductive/Developmental Effects

Mesotrione : Did not show reproductive effects in animal experiments.

Chronic/Subchronic Toxicity Studies

Mesotrione : No adverse effect has been observed in chronic toxicity tests.

Carcinogenicity

Mesotrione : Did not show carcinogenic effects in animal experiments.

Chemical Name	NTP/IARC/OSHA Carcinogen
---------------	--------------------------

Ethylene Glycol	No
Other ingredients	No
2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1,3-cyclohexanedione	No

Other Toxicity Information

None

Toxicity of Other Components

Ethylene Glycol

Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice. Exposure to high concentrations of mists or aerosols may result in effects on the hematopoietic system and central nervous system with headache, dizziness and drowsiness. Severe kidney damage results from swallowing large amounts of ethylene glycol.

Other ingredients

Not Applicable

Target OrgansActive Ingredients

Mesotrione : Blood, eye, kidney, liver.

Inert Ingredients

Ethylene Glycol: Blood, kidney, CNS

Other ingredients: Not Applicable

TENACITY®

Date: 6/16/2015

Replaces: 12/10/2014

12. ECOLOGICAL INFORMATION

Eco-Acute Toxicity

Mesotrione :

Fish (Rainbow Trout) 96-hour LC50 >120 mg/l

Fish (Bluegill Sunfish) 96-hour LC50 >120 mg/l

Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 900 mg/l

Green Algae 72-hour EbC50 4.5 mg/l

Environmental Fate

Mesotrione :

The substance has low potential for bioaccumulation. Mesotrione has medium to high mobility in soil.

13. DISPOSAL CONSIDERATIONS

Disposal:

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA

Not regulated

Comments

Water Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Mesotrione), Marine Pollutant

Hazard Class: Class 9

Identification Number: UN 3082

Packing Group: PG III

Air Transport

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Mesotrione)

Hazard Class: Class 9

Identification Number: UN 3082

Packing Group: PG III

15. REGULATORY INFORMATION

Pesticide Registration:

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 as required on the pesticide label:

Caution: Harmful if absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin, eyes, or clothing.

TENACITY®

Date: 6/16/2015
Replaces: 12/10/2014

EPA Registration Number(s):

100-1267

EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: Ethylene Glycol <15% (CAS No. 107-21-1)

CERCLA/SARA 304 Reportable Quantity (RQ):

Report product spills > 3260 gal. (based on ethylene glycol [RQ = 5000 lbs.] content in the formulation) (CERCLA)

RCRA Hazardous Waste Classification (40 CFR 261):

Not Applicable

TSCA Status:

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 2
Flammability: 1
Instability: 0

HMIS Hazard Ratings

Health: 1
Flammability: 1
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme
*	Chronic

Syngenta Hazard Category: B

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 4/17/2007

Revision Date: 6/16/2015

Replaces: 12/10/2014

Section(s) Revised: 2, 4, 7, 11

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

ATTENTION:

This specimen label is provided for general information only.

- This pesticide product may not yet be available or approved for sale or use in your area.
- It is your responsibility to follow all Federal, state and local laws and regulations regarding the use of pesticides.
- Before using any pesticide, be sure the intended use is approved in your state or locality.
- Your state or locality may require additional precautions and instructions for use of this product that are not included here.
- Monsanto does not guarantee the completeness or accuracy of this specimen label. The information found in this label may differ from the information found on the product label. You must have the EPA approved labeling with you at the time of use and must read and follow all label directions.
- You should not base any use of a similar product on the precautions, instructions for use or other information you find here.
- Always follow the precautions and instructions for use on the label of the pesticide you are using.

98005J6-17



Roundup QuikPRO herbicide is a fast-acting, non-selective professional herbicide for use in non-crop areas and industrial sites.

Complete Directions for Use

AVOID CONTACT OF THIS HERBICIDE WITH FOLIAGE, STEMS, EXPOSED NON-WOODY ROOTS, OR DESIRABLE PLANTS AND TREES, BECAUSE SEVERE INJURY OR DESTRUCTION MAY RESULT.

EPA Reg. No. 524-535

2011-1

Read the entire label before using this product.

Use only according to label instructions.

Read the "LIMIT OF WARRANTY AND LIABILITY" statement at the end of the label before buying or using. If terms are not acceptable, return at once unopened.

THIS IS AN END-USE PRODUCT. MONSANTO DOES NOT INTEND AND HAS NOT REGISTERED IT FOR REFORMULATION OR REPACKAGING.

1.0 INGREDIENTS

ACTIVE INGREDIENTS:

*Glyphosate, N-(phosphonomethyl)glycine, in the form of its ammonium salt	73.3%
Diquat dibromide [6,7-dihydrodipyrido (1,2-a:2',1'-c) pyrazinedium dibromide]	2.9%
OTHER INGREDIENTS:	23.8%
	100.0%

*Equivalent to 66.6% of the acid, glyphosate

1.0 pound contains 0.73 pound of the ammonium salt of glyphosate and 0.03 pound of the dibromide salt of diquat.

This product is protected by U.S. Patent No. 7,008,904. Other patents pending. No license granted under any patent to use this product other than in accordance with this label. No license granted under any non-U.S. patent(s).

2.0 IMPORTANT PHONE NUMBERS

FOR PRODUCT INFORMATION OR ASSISTANCE IN USING THIS PRODUCT, CALL TOLL-FREE, 1-800-332-3111.

IN CASE OF AN EMERGENCY INVOLVING THIS PRODUCT, OR FOR MEDICAL ASSISTANCE, CALL COLLECT, DAY OR NIGHT, (314)-694-4000.

3.0 PRECAUTIONARY STATEMENTS

3.1 Hazards to Humans and Domestic Animals

Keep out of reach of children.

CAUTION!

HARMFUL IF SWALLOWED.

HARMFUL IF INHALED.

CAUSES MODERATE EYE IRRITATION.

Avoid breathing dust or spray mist.

Avoid contact with eyes or clothing.

Remove contaminated clothing and wash clothing before reuse.

Wash thoroughly with soap and water after handling.

FIRST AID

IF SWALLOWED	• Call a physician or Poison Control Center for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a Poison Control Center or physician. • Do not give anything by mouth to an unconscious person. • Quick treatment is essential to counteract poisoning and should be initiated before signs and symptoms of injury appear.
IF INHALED	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a Poison Control Center or physician for further treatment advice.
IF IN EYES	• 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 Poison Control Center or physician for treatment advice.
• Have the product container or label with you when calling a poison control center or physician, or going for treatment. • You may also contact (314) 694-4000, collect day or night, for emergency medical treatment information. • This product is identified as Roundup QuikPRO™ herbicide, EPA Registration No. 524-535.	

DOMESTIC ANIMALS: Keep livestock and pets out of treated areas. Do not graze livestock on treated areas. This product is considered to be relatively nontoxic to dogs and other domestic animals; however, ingestion of this product or large amounts of freshly sprayed vegetation may result in temporary gastrointestinal irritation (vomiting, diarrhea, colic, etc.). If such symptoms are observed, provide the animal with plenty of fluids to prevent dehydration. Call a veterinarian if symptoms persist for more than 24 hours.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear: Long-sleeved shirt and long pants, protective footwear plus socks, and protective eyewear. Discard clothing and other materials that have been heavily contaminated with this product's concentrate. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

3.2 Environmental Hazards

This product is toxic to aquatic invertebrates. 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 water when cleaning equipment or disposing of equipment washwaters.

3.3 Physical or Chemical Hazards

Spray solutions of this product should be mixed, stored and applied using only stainless steel, fiberglass, plastic or plastic-lined steel containers.

DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in any manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulations.

Entry Restrictions: Keep all unprotected persons out of operating areas or vicinity where there may be drift. Keep people and pets off treated areas until spray solution has dried.

4.0 STORAGE AND DISPOSAL

Proper pesticide storage and disposal are essential to protect against exposure to people and the environment due to leaks and spills, excess product or waste, and vandalism. Do not allow this product to contaminate water, foodstuffs, feed or seed by storage or disposal.

PESTICIDE STORAGE: Store pesticides away from food, pet food, feed, seed, fertilizers, and veterinary supplies. Keep container closed to prevent spills and contamination.

PESTICIDE DISPOSAL: To avoid wastes, use all material in this container, including rinsate, by application in accordance with label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program. Such programs are often run by state or local governments or by industry. All disposal must be in accordance with applicable Federal, State and local procedures.

CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. When completely empty, offer for recycling if available, or dispose of bag in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

5.0 PRODUCT INFORMATION

Product Description: This product is a postemergent, systemic herbicide with no residual soil activity. It is non-selective and gives broad-spectrum control of many annual weeds, perennial weeds, woody brush and trees. This product is formulated as a water-soluble granule containing surfactant and no additional surfactant is needed. Apply through most standard sprayers after dissolution and thorough mixing with water according to label instructions.

Time to Symptoms: This product moves through the plant from the point of foliage contact and into the root system. Visible effects on most annual weeds occur within 1 day, and on most perennial weeds in 2 days. Extremely cool or cloudy weather following treatment may slow activity of this product and delay development of visual symptoms. Visible effects are a quick yellowing of the foliage which advances to complete browning of above-ground growth and deterioration of underground plant parts.

Mode of Action: One of the active ingredients in this product inhibits an enzyme found only in plants and microorganisms that is essential to formation of specific amino acids. A second active rapidly disrupts cell integrity of photosynthetically active tissues in the contacted foliage.

Cultural Considerations: Reduced control may result when application is made to annual or perennial weeds that have been mowed, grazed, or cut, and have not been allowed to regrow to the specified stage for treatment.

Rainfastness: Heavy rainfall soon after application may wash this product off of the foliage and a repeat application may be required for adequate weed control.

Spray Coverage: Uniform and complete spray coverage will provide best results. Do not spray weed foliage to the point of runoff.

No Soil Activity: Weeds must be emerged at the time of application to be controlled by this product. Weeds germinating from seed after application will not be controlled. Plants growing from unattached underground rhizomes or root stocks of perennials that have not yet emerged at the time of application will not be affected by the herbicide and will continue to grow.

Annual Maximum Use Rate: The maximum allowed application rates apply to this product combined with the use of any and all other herbicides containing the active ingredient glyphosate, whether applied separately or as tank mixtures. If more than one glyphosate-containing product is applied to the same site within the same year, you must ensure that the total use of glyphosate (pounds acid equivalent) does not exceed the maximum allowed. For non-crop uses, the combined total of all treatments must not exceed 12.25 pounds of this product (8 pounds of glyphosate acid) per acre per year.

ATTENTION

AVOID CONTACT OF HERBICIDE WITH FOLIAGE, EXPOSED NON-WOODY ROOTS, OR DESIRABLE PLANTS AND TREES, BECAUSE SEVERE INJURY OR DESTRUCTION MAY RESULT.

AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS.

Do not allow the herbicide solution to mist, drip, drift or splash onto desirable vegetation since minute quantities of this product can cause severe damage or destruction to desirable plants or other areas on which treatment was not intended. The likelihood of injury occurring from the use of this product increases when winds are gusty, as wind velocity increases, when wind direction is constantly changing or when there are other meteorological conditions that favor spray drift. When spraying, avoid combinations of pressure and nozzle type that will result in splatter or fine particles (mist) which are likely to drift. AVOID APPLYING AT EXCESSIVE SPEED OR PRESSURE.

NOTE: Use of this product in any manner not consistent with this label may result in injury to persons, animals or desirable plants, or other unintended consequences. Keep container closed to prevent spills and contamination.

6.0 MIXING

Mix only the amount of solution to be used during a 1-day period. Reduced visual activity but not efficacy will result from the use of leftover solution.

Clean sprayer parts immediately after using this product by thoroughly flushing with water.

NOTE: REDUCED RESULTS MAY OCCUR IF WATER CONTAINING SOIL SEDIMENT IS USED AS A CARRIER. DO NOT MIX THIS PRODUCT WITH WATER FROM PONDS AND DITCHES THAT IS VISIBLY MUDDY OR MURKY.

Use caution to avoid siphoning back into the carrier source. Use approved anti-back-siphoning devices where required by state or local regulations. During mixing and application, foaming of the spray solution may occur. To prevent or minimize foam, avoid the use of mechanical agitators, terminate by-pass and return lines at the bottom of the tank and, if needed, use an approved anti-foam or defoaming agent.

6.1 Tank-Mixing

This product does not provide residual weed control. This product may be tank-mixed with other herbicides to provide residual weed control, a broader weed control spectrum or an alternate mode of action. Read and follow all individual product labels, supplemental labeling and Fact Sheets for all products in the tank mixture and observe all precautions and limitations on the label, including application timing restrictions, soil restrictions and use according to the most restrictive precautionary statements for each product in the tank mixture. Always predetermine the compatibility of all tank-mix products together in the carrier by mixing small proportional quantities in advance.

Buyer and all users are responsible for any and all loss or damage in connection with the use or handling of mixtures of this product with herbicides or other materials that are not expressly specified on this label. Mixing this product with herbicides or other materials not specified on this label may result in reduced performance.

6.2 Procedure for Preparing Spray Solution

Use the following procedure to mix this product in water alone or when preparing tank mixtures with other labeled products.

1. Place a 20- to 35-mesh screen or wetting basket over filling port.
2. Through the screen, fill the spray tank one-half full with water and start agitation.
3. Add Roundup QuikPRO herbicide using a circular motion while pouring.
4. If second product is a wettable powder, first make a slurry with the water carrier, then add the slurry SLOWLY through the screen into the tank. Continue agitation.
5. If a flowable formulation is used, premix one part flowable with one part water. Add diluted mixture SLOWLY through the screen into the tank. Continue agitation.
6. If an emulsifiable concentrate formulation is used, premix one part emulsifiable concentrate with two parts water. Add diluted mixture SLOWLY through the screen into the tank. Continue agitation.
7. Continue filling the spray tank with water and add water soluble liquids near the end of the filling process.

When tank mixing this product with other products, maintain good agitation at all times until the contents of the tank are sprayed. If the spray mixture is allowed to settle, thorough agitation is required to resuspend the mixture before spraying is resumed.

Keep by-pass line on or near the bottom of the tank to minimize foaming. Use a screen size in nozzle or line strainers no finer than 50-mesh.

Always predetermine the compatibility of labeled tank mixtures of this product with water carrier by mixing small proportional quantities in advance.

6.3 Mixing for Hand-Held Sprayers

Prepare the desired volume of spray solution by adding the amount of this product as shown in the following table to a clean, empty sprayer. Add the appropriate amount of water and stir or agitate to ensure dissolution of this product. For best results when using backpack sprayers, mix the labeled amount of this product with the specified volume of water in a larger container. Fill sprayer with the mixed solution.

Spray Solution

Desired Volume	Amount of Roundup QuikPRO herbicide			
	Annuals	Perennials	Brush	Low-Volume Directed
1 Gal	1.2 oz	1.5 oz	1.5 oz	4.0 oz to 8.0 oz
3 Gal	3.6 oz	4.5 oz	4.5 oz	12.0 oz to 1.5 lb
10 Gal	12.0 oz	15.0 oz	15.0 oz	2.5 lb to 5.0 lb

6.4 Colorants or Dyes

Colorants or marking dyes may be added to this product; however, they can reduce product performance, especially at lower rates or dilutions. Use colorants or dyes according to the manufacturer's directions. Certain blue dyes are not stable in the spray solution in the presence of this product. A jar test to determine if the desired blue dye is stable is recommended. If stability is a problem consider switching to an alternate color dye.

6.5 Drift Control Additives

Drift control additives may be used with all equipment types. When a drift control additive is used, read and carefully observe the cautionary statements and all other information appearing on the additive label.

7.0 APPLICATION EQUIPMENT AND TECHNIQUES

SPRAY DRIFT MANAGEMENT

AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS.

Avoiding spray drift at the application site is the responsibility of the applicator and grower. The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

Do not apply this product by air.

Do not apply this product through any type of irrigation system.

Do not allow the herbicide solution to mist, drip, drift or splash onto desirable vegetation since minute quantities of this product can cause severe damage or destruction to desirable plants or other areas on which treatment was not intended.

APPLY THESE SPRAY SOLUTIONS IN PROPERLY MAINTAINED AND CALIBRATED EQUIPMENT CAPABLE OF DELIVERING DESIRED VOLUMES.

7.1 Ground Broadcast Equipment

Use the labeled rates of this product in 10 to 80 gallons of water per acre as a broadcast spray unless otherwise specified on this label or in separate supplemental labeling or Fact Sheets published for this product. As the density of weeds increases, increase the spray volume within the labeled range to ensure complete coverage. Carefully select proper nozzles to avoid spraying a fine mist. For best results with ground application equipment, use flat-fan nozzles. Check for even distribution of spray droplets.

7.2 Backpack or Hand-Held Equipment

Apply to foliage of vegetation to be controlled on a spray-to-wet basis; do not spray to the point of runoff. For best results, ensure that spray coverage is uniform and complete. Use coarse sprays only.

For control of weeds listed in the Annual Weeds section of the WEEDS CONTROLLED section, apply 1.2 ounces of this product per 1 gallon of spray solution. See table in Mixing for Hand-Held Sprayers section for larger mixing volumes.

For best results, use 1.5 ounces of this product per 1 gallon of spray solution on harder-to-control perennials, such as bermudagrass, dock, field bindweed, hemp dogbane, milkweed and Canada thistle. See table in Mixing for Hand-Held Sprayers section for larger mixing volumes.

For low-volume directed spray applications, use 4.0 to 8.0 ounces of this product per 1 gallon of spray solution for control or partial control of brush weeds. See table in Mixing for Hand-Held Sprayers section for larger mixing volumes. Ensure spray coverage is uniform with at least 50 percent of the foliage contacted. Coverage of the top one-half of the plant is important for best results. To ensure adequate spray coverage, spray both sides of brush and tree seedlings when foliage is thick and dense, or where there are multiple sprouts.

7.3 CDA Equipment

The rate of this product applied per acre by controlled droplet application (CDA) equipment must not be less than the amount stated in this label when applied by conventional broadcast equipment. For vehicle mounted CDA equipment, apply 3 to 15 gallons of water per acre.

For hand-held CDA units, apply a solution of 1.5 to 2.0 pounds of this product in one gallon of water at a flow rate of 2 fluid ounces per minute and a walking speed of 0.75 mile per hour.

CDA equipment produces a spray pattern which is not easily visible. Extreme care must be exercised to avoid spray or drift contacting the foliage or any other green tissue of desirable vegetation, as damage or destruction is likely to result.

8.0 SITE AND USE INSTRUCTIONS

Unless otherwise specified, applications may be made to control any weeds listed in the annual, perennial and brush weeds and tree seedlings tables.

8.1 Non-crop Areas and Industrial Sites

Use in non-crop areas only: airports, apartment complexes, commercial sites, Conservation Reserve Program (CRP), ditch banks, driveways, dry ditches, dry canals, fencerows, golf courses, industrial sites, landscape areas, lumberyards, manufacturing sites, municipal sites, natural areas, office complexes, ornamental landscapes, parks, parking areas, recreational areas, residential areas, rights-of-way, roadsides, schools, sports complexes, storage areas, warehouse areas, and wildlife management areas.

This product is not for use on crops, timber, other plants being grown for sale, other commercial use, or for commercial seed production. This product is not for research purposes.

Weed Control, Trim-and-Edge and Bare Ground

Use this product in non-crop areas. Apply with any application equipment described in this label. This product may be used to trim-and-edge around objects in non-crop sites, for spot treatment of unwanted vegetation, and to eliminate unwanted weeds growing in established shrub beds or ornamental plantings. This product may be used prior to planting an area to ornamentals, flowers, turfgrass (sod or seed), or prior to laying asphalt or beginning construction projects. This product is not for use on plants grown for sale or other commercial use, or for commercial seed production.

Repeated applications of this product may be used as weeds emerge to maintain bare ground.

When a tank mixture with a generic active ingredient, such as 2,4-D or pendimethalin is described in this label, the user is responsible for ensuring that the specific application being made is included on the label of the specific product being used in the tank mixture.

This product may be tank-mixed with the following products. Refer to these products' labels for approved non-crop sites and application rates.

BANVEL	PENDULUM 3.3 EC
BARRICADE 65WG	PENDULUM WDG
CERTAINTY®	RONSTAR 50 WP
DIMENSION 4 EC	SURFLAN
ENDURANCE	2,4-D
PENDIMETHALIN	

When applied as a tank mixture for bare ground, Roundup QuikPRO herbicide provides control of the emerged annual weeds and control or partial control of emerged perennial weeds.

Dormant Turfgrass

Use this product to control or suppress many winter annual weeds and tall fescue for effective release of dormant bermudagrass and bahiagrass turf. Treat only when turf is dormant and prior to spring greenup. This product is not for use on turf being grown for sale or other commercial use as sod, or for commercial seed production, or for research purposes.

Apply 5 to 16 ounces of this product per acre. Apply the labeled rates in 10 to 80 gallons of water per acre. Use only in areas where bermudagrass or bahiagrass are desirable ground covers and where some temporary injury or discoloration can be tolerated.

Treatments in excess of 9 ounces per acre may result in injury or delayed greenup in highly maintained areas, golf courses and lawns.

Turfgrass Renovation (Except for Commercial Sod Farms)

This product controls most existing vegetation prior to renovating turfgrass areas. This product is not for use on turf being grown for sale or other commercial use as sod, or for commercial seed production, or for research purposes. For maximum control of existing vegetation, delay planting or sodding to determine if any regrowth from escaped underground plant parts occurs. Where repeat treatments are necessary, sufficient regrowth must be attained prior to application. Do not use this product for renovation of bermudagrass or kikuyugrass sods. Where existing vegetation is growing under mowed turfgrass management, apply this product after omitting at least one regular mowing to allow sufficient growth for good interception of the spray.

Do not disturb soil or underground plant parts before treatment. Delay tillage or renovation techniques such as vertical mowing, coring or slicing for 7 days after application to allow translocation into underground plant parts.

Desirable turfgrasses may be planted following the above procedures.

Hand-held equipment may be used for spot treatment of unwanted vegetation growing in existing turfgrass.

Do not feed or graze treated turfgrass or feed treated thatch to livestock.

8.2 Parks, Recreational and Residential Areas

This product may be used in parks, recreational and residential areas. Apply this product with any application equipment described in this label. Use this product to trim-and-edge around trees, fences, paths, around buildings, sidewalks, and other objects in these areas. This product may be used for spot treatment of unwanted vegetation or to eliminate unwanted weeds growing in established shrub beds or ornamental plantings. This product may be used prior to planting an area to ornamentals, flowers, turfgrass (sod or seed), or prior to laying asphalt or beginning construction projects.

All of the instructions in the Non-Crop Areas and Industrial Sites section apply to park and recreational areas. This product is not for use around plants being grown for sale or other commercial use.

9.0 WEEDS CONTROLLED

Always use the higher rate of this product per acre within the range when weed growth is heavy or dense or weeds are growing in an undisturbed (non-cultivated) area.

Reduced results may occur when treating weeds heavily covered with dust. For weeds that have been mowed, grazed or cut, allow regrowth to occur prior to treatment.

Refer to the following label sections for rates to control annual and perennial weeds. For difficult to control perennial weeds and where plants are growing under stressed conditions, or where infestations are dense, this product may be used at up to 12.25 pounds per acre for enhanced results.

9.1 Annual Weeds

Use 2.25 to 4.5 pounds per acre of this product as a broadcast spray to control annual weeds. When using rates less than 4.5 pounds per acre, the level of fast-burn symptomology may be reduced.

For spray-to-wet applications, apply 1.2 ounces of this product per 1 gallon of spray solution.

WEED SPECIES

Anoda, spurred	Field pennycress*
Barley*	Filaree
Barnyardgrass*	Fleabane, annual*
Bassia, fivehook	Fleabane, hairy
Bittercress*	(<i>Conyza bonariensis</i>)
Black nightshade*	Fleabane, rough*
Bluegrass, annual*	Florida pusley
Bluegrass, bulbous*	Foxtail*
Brome, downy*	Goatgrass, jointed*
Brome, Japanese*	Goosegrass
Browntop panicum*	Grain sorghum (milo)*
Buttercup*	Groundsel, common*
Carolina foxtail*	Hemp sesbania
Carolina geranium	Henbit
Castor bean	Horseweed/Marestail
Cheatgrass*	(<i>Coryza canadensis</i>)
Cheeseweed	Itchgrass*
(<i>Malva parviflora</i>)	Johnsongrass, seedling
Chervil*	Junglerice
Chickweed*	Knotweed
Cocklebur*	Kochia
Copperleaf, hophornbeam	Lambsquarters*
Corn*	Little barley*
Corn speedwell*	London rocket*
Crabgrass*	Mayweed
Dwarf dandelion*	Medusahead*
Eastern mannagrass*	Morningglory (<i>Ipomoea spp.</i>)
Eclipta*	Mustard, blue*
Fall panicum*	Mustard, tansy*
Falsedandelion*	Mustard, tumble*
Falseflax, smallseed*	Mustard, wild*
Fiddleneck	Oats

Pigweed*	Speedwell, purslane*
Plains/tickseed coreopsis*	Sprangletop*
Prickly lettuce*	Spurge, annual
Purslane, common	Spurge, prostrate*
Ragweed, common*	Spurge, spotted*
Ragweed, giant	Spurry, umbrella*
Red rice	Starthistle, yellow
Russian thistle	Stinkgrass*
Rye*	Sunflower*
Ryegrass*	Teaweed/Prickly sida
Sandbur, field*	Texas panicum*
Shattercane*	Velvetleaf
Shepherd's-purse*	Virginia copperleaf
Sicklepod	Virginia pepperweed*
Signalgrass, broadleaf*	Wheat*
Smartweed, ladythumb*	Wild oats*
Smartweed, Pennsylvania*	Witchgrass*
Sowthistle, annual	Woolly cupgrass*
Spanishneedles	Yellow rocket

*When using field broadcast equipment (boom sprayers using flat-fan nozzles) these species will be controlled or partially controlled. Applications must be made using 10 to 80 gallons of carrier volume per acre. Use nozzles that ensure thorough coverage of foliage and treat when weeds are in an early growth stage.

9.2 Perennial Weeds

Best results are obtained when perennial weeds are treated after they reach the reproductive stage of growth (seedhead initiation in grasses and bud formation in broadleaves). For non-flowering plants, best results are obtained when the plants reach a mature stage of growth. In many situations, treatments are required prior to these growth stages. Under these conditions, use the higher application rate within the range.

Use 4.5 to 9.0 pounds per acre of this product as a broadcast spray to control perennial weeds. When using rates less than 9.0 pounds per acre, the level of fast-burn symptomology may be reduced.

For spray-to-wet applications, apply 1.5 ounces of this product per 1 gallon of spray solution. Ensure thorough coverage when using spray-to-wet treatments using hand-held equipment.

When using hand-held equipment for low-volume directed spot treatments, apply 4.0 to 8.0 ounces of this product per 1 gallon of spray solution.

Allow 7 or more days after application before tillage.

WEED SPECIES

Alfalfa*	Johnsongrass
Alligatorweed*	Kikuyugrass*
Anise (fennel)	Knapweed
Bahiagrass	Lantana
Beachgrass, European	Lespedeza
(<i>Ammophila arenaria</i>)	Milkweed, common
Bentgrass*	Muhly, wirestem
Bermudagrass*	Mullein, common
Bermudagrass, water	Napiergrass
(knotgrass)	Nightshade, silverleaf
Bindweed, field	Nutsedge, purple, yellow
Bluegrass, Kentucky	Orchardgrass
Blueweed, Texas	Pampasgrass
Bromegrass, smooth	Paragrass
Bursage, woolly-leaf	Pepperweed, perennial
Canarygrass, reed	Phragmites*
Cattail	Poison hemlock
Clover, red, white*	Quackgrass
Cogongrass	Redvine*
Dallisgrass	Reed, giant
Dandelion	Ryegrass, perennial
Dock, curly	Spurge, leafy*
Dogbane, hemp	Thistle, artichoke
Fescue	Thistle, Canada
Fescue, tall	Timothy
German ivy	Torpedograss*
Guineagrass	Trumpet creeper*
Horsenettle	Vaseygrass
Horseradish	Velvetgrass
Iceplant	Wheatgrass, western
Jerusalem artichoke	

*Partial Control

9.3 Brush Weeds and Tree Seedlings

Best results are obtained when brushweeds are treated when they are in the seedling stage of growth. In many situations, retreatment is required on larger plants. Under these conditions, use the higher application rate within the range.

Use 9.0 pounds per acre of this product as a broadcast spray to control brush weeds.

For spray-to-wet applications, apply 1.5 ounces of this product per 1 gallon of spray solution. Ensure thorough coverage when using spray-to-wet treatments using hand-held equipment.

When using hand-held equipment for low-volume directed spot treatments, apply 4.0 to 8.0 ounces of this product per 1 gallon of spray solution.

Allow 7 or more days after application before tillage.

WEED SPECIES

Alder	Oak, southern red
Ash*	Oak, white*
Beech*	Peppertree,
Birch	Brazilian
Blackberry	(Florida holly)*
Blackgum	Pine
Cherry; bitter,	Poison ivy*
black, pin	Poison oak*
Dogwood*	Poplar, yellow*
Elderberry	Redbud, eastern
Elm*	Rose, multiflora
Honeysuckle	Saltcedar*
Locust, black*	Sumac; laurel, poison,
Maple, red	smooth, sugarbush,
Maple, sugar	winged*
Oak, black*	Sweetgum
Oak, northern pin	Vine maple*
Oak, post	Virginia creeper
Oak, red	Waxmyrtle, southern*
Oak, scrub*	

*Partial Control

EPA Reg. No. 524-535

In case of an emergency involving this product,
Call Collect, day or night, (314) 694-4000.

Packed for:
MONSANTO COMPANY
800 N. LINDBERGH BLVD.
ST. LOUIS, MISSOURI, 63167 U.S.A.
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120810



10.0 LIMIT OF WARRANTY AND LIABILITY

Monsanto Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes set forth in the Complete Directions for Use label booklet ("Directions") when used in accordance with those Directions under the conditions described therein. NO OTHER EXPRESS WARRANTY OR IMPLIED WARRANTY OF FITNESS FOR PARTICULAR PURPOSE OR MERCHANTABILITY IS MADE. This warranty is also subject to the conditions and limitations stated herein.

To the extent consistent with applicable law, buyer and all users shall promptly notify this Company of any claims whether based in contract, negligence, strict liability, other tort or otherwise.

Buyer and all users are responsible for all loss or damage from use or handling which results from conditions beyond the control of this Company to the extent consistent with applicable law, including, but not limited to, incompatibility with products other than those set forth in the Directions, application to or contact with desirable vegetation, unusual weather, weather conditions which are outside the range considered normal at the application site and for the time period when the product is applied, as well as weather conditions which are outside the application ranges set forth in the Directions, application in any manner not explicitly set forth in the Directions, moisture conditions outside the moisture range specified in the Directions, or the presence of products other than those set forth in the Directions in or on the soil, crop or treated vegetation.

This Company does not warrant any product reformulated or repackaged from this product except in accordance with this Company's stewardship requirements and with express written permission from this Company.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE LIMIT OF THE LIABILITY OF THIS COMPANY OR ANY OTHER SELLER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT (INCLUDING CLAIMS BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY, OTHER TORT OR OTHERWISE) SHALL BE THE PURCHASE PRICE PAID BY THE USER OR BUYER FOR THE QUANTITY OF THIS PRODUCT INVOLVED, OR, AT THE ELECTION OF THIS COMPANY OR ANY OTHER SELLER, THE REPLACEMENT OF SUCH QUANTITY, OR, IF NOT ACQUIRED BY PURCHASE, REPLACEMENT OF SUCH QUANTITY TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO EVENT SHALL THIS COMPANY OR ANY OTHER SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES.

Upon opening and using this product, buyer and all users are deemed to have accepted the terms of this LIMIT OF WARRANTY AND LIABILITY which may not be varied by any verbal or written agreement. If terms are not acceptable, return at once unopened.

Certainty, Roundup QuikPRO, and Monsanto and Vine Design are trademarks of Monsanto Technology LLC. All other trademarks are the property of their respective owners.

Product of Brazil, formulated in the U.S. with U.S. Ingredients.

SAFETY DATA SHEET



ROUNDUP QUIKPRO™ HERBICIDE

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Print Date: 10/02/2020

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

Product identifier

Trade name	ROUNDUP QUIKPRO™ HERBICIDE
Product code (UVP)	86809095
SDS Number	102000037606
EPA Registration No.	524-535

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	Bayer Environmental Science A division of Bayer CropScience LP 5000 Centregreen Way, Suite 400 Cary, NC 27513 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	1-800-331-2867

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Specific target organ toxicity - repeated exposure: Category 2

Labelling in accordance with regulation HCS 29CFR §1910.1200



Signal word: Warning

Hazard statements

May cause damage to organs (Eyes, Kidney) through prolonged or repeated exposure.

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Precautionary statements

Do not breathe dust.
Get medical advice/ attention if you feel unwell.
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
Ammonium salt of glyphosate	114370-14-8	73.3
Diquat dibromide	85-00-7	2.9
Polyether modified trisiloxane	134180-76-0	14.1

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	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	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.
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

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.

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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 In the event of fire the following may be released: Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Oxides of phosphorus

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. Equipment should be thoroughly decontaminated after use.

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.

Flash point Not applicable

Auto-ignition temperature No data available

Lower explosion limit Not applicable

Upper explosion limit Not applicable

Explosivity Not explosive

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Use personal protective equipment. Keep unauthorized people away. 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. 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.

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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 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.
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).

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

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
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
Diquat dibromide	85-00-7	0.5 mg/m ³ (REL)	2010	NIOSH
Diquat dibromide	85-00-7	0.5 mg/m ³ (TWA)	06 2008	TN OEL
Diquat dibromide	85-00-7	0.5 mg/m ³ (TWA PEL)	08 2010	US CA OEL

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(Total dust.)				
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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

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

Eye protection

Use tightly sealed goggles and face protection.

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	small rod
Colour	light yellow to brown
Odour	slight
Odour Threshold	No data available
pH	3.7 (10 g/l)
Melting point/range	No data available
Boiling Point	No data available
Flash point	Not applicable
Flammability	No data available

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Auto-ignition temperature	No data available
Minimum ignition energy	Not applicable
Self-accelarating decomposition temperature (SADT)	No data available
Upper explosion limit	Not applicable
Lower explosion limit	Not applicable
Vapour pressure	No data available
Evaporation rate	No data available
Relative vapour density	No data available
Relative density	No data available
Density	No data available
Bulk density	0.68 g/ml (bulk density tapped)
Water solubility	soluble
Partition coefficient: n-octanol/water	Glyphosate: log Pow: -2.9 Diquat dibromide: log Pow: -4.6
Viscosity, dynamic	No data available
Viscosity, kinematic	No data available
Oxidizing properties	No oxidizing properties
Explosivity	Not explosive
Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition	Stable under normal conditions.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

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Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	Galvanised steel, Unlined mild steel
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Skin contact, Eye contact, Inhalation
Immediate Effects	
Eye	May cause mild irritation to eyes.
Skin	Not expected to produce significant adverse effects when recommended use instructions are followed.
Ingestion	Harmful if swallowed.
Inhalation	Harmful if inhaled.
Information on toxicological effects	
Acute oral toxicity	LD50 (Rat) 4,443 mg/kg
Acute inhalation toxicity	LC50 (Rat) > 0.99 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. Highest attainable concentration.
Acute dermal toxicity	LD50 (Rat) > 5,000 mg/kg
Skin corrosion/irritation	Slight irritant effect - does not require labelling. (Rabbit)
Serious eye damage/eye irritation	Moderate eye irritation. (Rabbit)
Respiratory or skin sensitisation	Skin: Non-sensitizing. (Guinea pig) OECD Test Guideline 406, Buehler test

Assessment STOT Specific target organ toxicity – single exposure

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

Assessment STOT Specific target organ toxicity – repeated exposure

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

Assessment mutagenicity

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

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Important comment to IARC Listing:., Our expert opinion is that classification as a carcinogen is not warranted.

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

ACGIH

Diquat dibromide 85-00-7 Group A4

NTP

None.

IARC

Ammonium salt of glyphosate 114370-14-8 Overall evaluation: 2A

OSHA

None.

Assessment toxicity to reproduction

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

Diquat dibromide 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.

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.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish

LC50 (Oncorhynchus mykiss (rainbow trout)) 5.4 mg/l
static test; Exposure time: 96 h
Test conducted with a similar formulation.

LC50 (Lepomis macrochirus (Bluegill sunfish)) 12.1 - 21.5 mg/l
static test; Exposure time: 72 h
The value mentioned relates to the active ingredient diquat dibromide.

LC50 (Oncorhynchus mykiss (rainbow trout)) 14.8 mg/l
static test; Exposure time: 96 h
The value mentioned relates to the active ingredient diquat dibromide.

Chronic toxicity to fish

Oncorhynchus mykiss (rainbow trout)
flow-through test
NOEC: ≥ 9.63 mg/l
The value mentioned relates to the active ingredient glyphosate.

Toxicity to aquatic invertebrates

EC50 (Daphnia magna (Water flea)) 11 mg/l static test; Exposure time: 48 h
Test conducted with a similar formulation.

EC50 (Daphnia magna (Water flea)) 0.77 - 1.19 mg/l static test;
Exposure time: 48 h

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The value mentioned relates to the active ingredient diquat dibromide.

Chronic toxicity to aquatic invertebrates

EC50 (*Daphnia magna* (Water flea)): 12.5 mg/l
Exposure time: 21 d

The value mentioned relates to the active ingredient glyphosate.

Toxicity to aquatic plants

EbC50 (*Raphidocelis subcapitata* (freshwater green alga)) 72.9 mg/l
static test; Exposure time: 72 h

The value mentioned relates to the active ingredient glyphosate.

NOEC (*Raphidocelis subcapitata* (freshwater green alga)) 26.4 mg/l
static test; Exposure time: 72 h

The value mentioned relates to the active ingredient glyphosate.

EC50 (*Raphidocelis subcapitata* (freshwater green alga)) 0.0094 mg/l
static test; Exposure time: 96 h

The value mentioned relates to the active ingredient diquat dibromide.

Biodegradability

Glyphosate:
Not rapidly biodegradable
Diquat dibromide:
Not rapidly biodegradable

Koc

Diquat dibromide: Koc: 2184750

Bioaccumulation

Glyphosate: Bioconcentration factor (BCF) < 1
Does not bioaccumulate.
Diquat dibromide: Bioconcentration factor (BCF) 1
Does not bioaccumulate.

Mobility in soil

Glyphosate: Slightly mobile in soils
Diquat dibromide: Immobile in soil

Results of PBT and vPvB assessment

PBT and vPvB assessment

Glyphosate: 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).
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).

Additional ecological information

No further ecological information is available.

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.

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SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product

It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines.
Do not contaminate water, food, or feed by disposal.
Follow all local/regional/national/international regulations.

Contaminated packaging

Follow advice on product label and/or leaflet.
Do not re-use empty containers.
Triple rinse containers.
Puncture container to avoid re-use.
Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities.
If burned, stay out of smoke.

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

49CFR

UN number	3077
Class	9
Packaging group	III
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (DIQUAT DIBROMIDE)
RQ	Reportable Quantity is reached with 34,482 lb of product.

IMDG

UN number	3077
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (DIQUAT DIBROMIDE)

IATA

UN number	3077
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

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(DIQUAT DIBROMIDE)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

Freight Classification: COMPOUNDS, TREE OR WEED KILLING, N.O.I. other than poison, HAVING A DENSITY OF 20 LBS OR GREATER PER CUBIC FOOT

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 524-535

US Federal Regulations

TSCA list

Polyether modified trisiloxane 134180-76-0

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

None.

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

Diquat dibromide	85-00-7	CA, CT, IL, NJ, RI
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Environmental

CERCLA

Yes

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

Listed

Clean Water Section 307(a)(1)

None.

Safe Drinking Water Act Maximum Contaminant Levels

Yes

Diquat dibromide	85-00-7
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EPA/FIFRA Information:

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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:

Signal word: Caution!

Hazard statements: Harmful if swallowed.
Harmful if inhaled.
Causes moderate 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 - 2 Flammability - 1 Instability - 2 Others -

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

Health - 2 Flammability - 1 Physical Hazard - 2 PPE -

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

Reason for Revision: New Safety Data Sheet.

Revision Date: 10/01/2020

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