



## NOTICE OF WEED CONTROL APPLICATION

**Date of Application:** March 2-6, 2026

**Location:** Willows Park

**Reason for Application:** Target weed control in the planters, rock and DG areas, tree wells, and cracks of sidewalks and parking lots.

**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:** Pendulum Aqua Cap

-EPA registration no. 241-416

-Active ingredients: pendimethalin: N-(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine

-Precautionary statement: Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with skin, eyes or clothing.

**\*No applications within 25 feet of playgrounds**

**\*See attached label and SDS sheet**

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

## 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-dihydrodipyrdo (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

<b>IF SWALLOWED</b>	<ul style="list-style-type: none"><li>• Call a physician or Poison Control Center for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Do not induce vomiting unless told to do so by a Poison Control Center or physician.</li><li>• Do not give anything by mouth to an unconscious person.</li><li>• <b>Quick treatment is essential to counteract poisoning and should be initiated before signs and symptoms of injury appear.</b></li></ul>
<b>IF INHALED</b>	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li><li>• Call a Poison Control Center or physician for further treatment advice.</li></ul>
<b>IF IN EYES</b>	<ul style="list-style-type: none"><li>• 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.</li><li>• Call a Poison Control Center or physician for treatment advice.</li></ul>
<ul style="list-style-type: none"><li>• Have the product container or label with you when calling a poison control center or physician, or going for treatment.</li><li>• You may also contact (314) 694-4000, collect day or night, for emergency medical treatment information.</li><li>• This product is identified as Roundup QuikPRO™ herbicide, EPA Registration No. 524-535.</li></ul>	

**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>Conyza 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 manna grass*	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*
Horseneettle	Vaseygrass
Horseradish	Velvetgrass
Iceland	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.  
©2011  
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

Version 1.0 / USA  
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### 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
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Responsible Department	Email: SDSINFO.BCS-NA@bayer.com
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#### Emergency telephone no.

Emergency Telephone Number (24hr/ 7 days)	1-800-334-7577
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Product Information Telephone Number	1-800-331-2867
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### 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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## ROUNDUP QUIKPRO™ HERBICIDE

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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

<b>General advice</b>	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
<b>Inhalation</b>	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.
<b>Skin contact</b>	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.
<b>Eye contact</b>	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.
<b>Ingestion</b>	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 (CO<sub>2</sub>), Nitrogen oxides (NO<sub>x</sub>), 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

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### 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 <sup>3</sup> (TWA)	03 2014	ACGIH
Diquat dibromide (Respirable fraction.)	85-00-7	0.1 mg/m <sup>3</sup> (TWA)	03 2014	ACGIH
Diquat dibromide	85-00-7	0.5 mg/m <sup>3</sup> (REL)	2010	NIOSH
Diquat dibromide	85-00-7	0.5 mg/m <sup>3</sup> (TWA)	06 2008	TN OEL
Diquat dibromide	85-00-7	0.5 mg/m <sup>3</sup> (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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<b>Auto-ignition temperature</b>	No data available
<b>Minimum ignition energy</b>	Not applicable
<b>Self-accelarating decomposition temperature (SADT)</b>	No data available
<b>Upper explosion limit</b>	Not applicable
<b>Lower explosion limit</b>	Not applicable
<b>Vapour pressure</b>	No data available
<b>Evaporation rate</b>	No data available
<b>Relative vapour density</b>	No data available
<b>Relative density</b>	No data available
<b>Density</b>	No data available
<b>Bulk density</b>	0.68 g/ml (bulk density tapped)
<b>Water solubility</b>	soluble
<b>Partition coefficient: n-octanol/water</b>	Glyphosate: log Pow: -2.9 Diquat dibromide: log Pow: -4.6
<b>Viscosity, dynamic</b>	No data available
<b>Viscosity, kinematic</b>	No data available
<b>Oxidizing properties</b>	No oxidizing properties
<b>Explosivity</b>	Not explosive
<b>Other information</b>	Further safety related physical-chemical data are not known.

### SECTION 10: STABILITY AND REACTIVITY

#### Reactivity

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

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

### SECTION 11: TOXICOLOGICAL INFORMATION

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

<b>Product</b>	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.
<b>Contaminated packaging</b>	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.
<b>RCRA Information</b>	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
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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

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

# SPECIMEN

Pendimethalin

Group

3

Herbicide

# Pendulum® AquaCap

## Herbicide

**For use as a preemergence weed control herbicide in turfgrass, landscape or grounds maintenance, noncropland areas, and ornamental production**

**Active Ingredient:**

pendimethalin: N-(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine . . . . . 38.7%

**Other Ingredients:** . . . . . 61.3%

**Total:** . . . . . 100.0%

1 gallon contains 3.8 lbs of microencapsulated pendimethalin in an aqueous carrier.

**EPA Reg. No. 241-416**

**EPA Est. No.**

### KEEP OUT OF REACH OF CHILDREN CAUTION/PRECAUCION

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 inside for complete **First Aid, Precautionary Statements, Directions For Use, Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

**In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).**

**Net Contents:**

<b>FIRST AID</b>	
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes.</li> <li>• Remove contact lenses, if present, after first 5 minutes; then continue rinsing eyes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>HOTLINE</b>	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. In case of an emergency endangering life or property involving this product, call day or night, 1-800-832-HELP (4357).	

## **Precautionary Statements**

### **Hazards to Humans and Domestic Animals**

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

### **Personal Protective Equipment (PPE)**

#### **Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves
- Shoes plus socks

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. **DO NOT** reuse them.

### **Engineering Controls**

When handlers use closed systems, enclosed cabs, or aircraft 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/PPE immediately if pesticide gets inside. 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.

## **Environmental Hazards**

This product is toxic to fish. **DO NOT** apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. **DO NOT** contaminate water when disposing of equipment washwaters or rinsate.

**Non-target Organism Advisory Statement:** This product is toxic to plants and may adversely impact the forage and 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.

## **Directions For Use**

It is a violation of federal law to use this product in a manner inconsistent with its labeling. This label must be in the possession of the user at time of herbicide application.

**DO NOT** apply this product through any type of irrigation system.

BASF Corporation does not recommend or authorize the use of this product in manufacturing, processing or preparing custom blends with other products for application to turf or ornamentals.

**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 requirements specific to your state or tribe, consult the state or tribal agency responsible for pesticide regulation.

**DO NOT** apply **Pendulum® AquaCap herbicide** in greenhouses, shadehouses, or other enclosed structures.

Not for use for commercial seed production.

## 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 **24 hours**.

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
- Chemical-resistant gloves
- Shoes plus socks

## NONAGRICULTURAL 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.

**FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR WEED CONTROL OR CROP INJURY.**

## STORAGE AND DISPOSAL

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

### Pesticide Storage

**DO NOT** store below 15° F. Extended storage at temperatures below 15° F can result in the formation of crystals on the bottom of container. If crystallization does occur, store the container on its side at room temperature (70° F) and rock occasionally until crystals dissolve.

### Pesticide Disposal

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of federal law. 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 Handling

**Nonrefillable Container. DO NOT** reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

**Triple rinse containers small enough to shake (capacity ≤ 5 gallons) 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 a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

**Triple rinse containers too large to shake (capacity > 5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

(continued)

## STORAGE AND DISPOSAL *(continued)*

### Container Handling *(continued)*

**Pressure rinse as follows:** Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**Refillable Container.** Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

**Triple rinse as follows:** To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

## Product Information

**Pendulum® AquaCap herbicide** controls most annual grasses and certain broadleaf weeds as they germinate. When susceptible weeds germinate in the treated area, they contact the herbicide and both shoot and root growth stops. Translocation of the herbicide within the plant is limited. Affected weeds die shortly after growth is stopped, usually before emergence from the soil.

### Mode of Action

Pendimethalin, the active ingredient in **Pendulum AquaCap**, is a **Group 3 (WSSA)/Group K<sub>1</sub> (HRAC)** herbicide belonging to the dinitroaniline chemistry class. **Pendulum AquaCap** is a meristematic inhibitor that interferes with meristematic plant cell division or mitosis inhibiting germinating seedling growth.

## Herbicide Resistance Management

While weed resistance to **Group 3** herbicides is infrequent, populations of resistant biotypes are known to exist. Weeds resistant to **Group 3** herbicides should be managed using herbicide(s) from a different group (mode or site of action) that are effective against the target weeds. Resistance management should be part of a diversified weed control strategy that integrates chemical, cultural, and mechanical (tillage) control tactics. Consult your local BASF representative, state cooperative extension service, professional consultants, or other qualified authority to determine appropriate actions if you suspect resistant weeds.

### Chemical Control

- Start clean with mechanical control measure or an effective burndown herbicide program.
- **DO NOT** rely on a single herbicide site of action for weed control.
- Follow labeled application rate and weed growth stage specifications.
- Avoid application of herbicides with the same site of action more than twice a season.
- Use tank mixes and sequential applications with other herbicides possessing different sites of action that are also effective on the target weeds.

### Scouting and Containment

- Scout treated areas after herbicide application to identify areas where weed control was ineffective.
- Control weed escapes with herbicides possessing a different site of action or use a mechanical control measure. Weed escapes should not be allowed to reproduce by seed or to proliferate vegetatively.
- Contact your **Pendulum AquaCap** supplier and/or your local BASF representative to report weed escapes.
- Clean equipment before moving to a different treatment area to avoid spread of resistant weeds.

### Weeds Controlled

**Pendulum AquaCap** will not control established weeds. If weeds germinate before herbicide activation, shallow cultivate to destroy existing weeds or, where practical, remove by hand. When cultivating for any reason, it should be shallow. Use **Pendulum AquaCap** with herbicides registered for postemergence application (i.e. **Roundup® herbicide** or **Finale® herbicide**) for the control of established weeds. **DO NOT** apply sprays containing **Roundup** or **Finale** over the top of desirable plants. A **Pendulum AquaCap** treatment may be followed by any registered herbicide to control weeds not listed on the **Pendulum AquaCap** label.

The efficacy of **Pendulum AquaCap** will be improved if the application is followed by 1/2 inch of rainfall or its equivalent in sprinkler irrigation. Erratic weed control may result if **Pendulum AquaCap** is not activated by rainfall or irrigation within 30 days.

The following grass and broadleaf weeds are controlled by preemergence treatments of **Pendulum AquaCap** at the specified rates.

**Table 1. Weeds Controlled**

Common Name	Scientific Name
<b>Grasses</b>	
Barnyardgrass	<i>Echinochloa crus-galli</i>
Bluegrass, annual	<i>Poa annua</i>
Crabgrass	<i>Digitaria</i> spp.
Crowfootgrass	<i>Dactyloctenium aegyptium</i>
Foxtail, giant	<i>Setaria faberi</i>
Foxtail, green	<i>Setaria viridis</i>
Foxtail, yellow	<i>Setaria glauca</i>
Goosegrass	<i>Eleusine indica</i>
Itchgrass	<i>Rottboellia exaltata</i>
Johnsongrass (from seed)	<i>Sorghum halepense</i>
Junglerice	<i>Echinochloa colona</i>
Lovegrass (from seed)	<i>Eragrostis</i> spp.
Panicum, browntop	<i>Panicum fasciculatum</i>
Panicum, fall	<i>Panicum dichotomiflorum</i>
Panicum, Texas	<i>Panicum texanum</i>
Sandbur, field	<i>Cenchrus incertus</i>
Signalgrass	<i>Brachiaria platyphylla</i>
Sprangletop, Mexican	<i>Leptochloa uninervia</i>
Sprangletop, red	<i>Leptochloa filiformis</i>
Witchgrass	<i>Panicum capillare</i>
Woolly cupgrass	<i>Eriochloa villosa</i>
<b>Broadleaf Weeds</b>	
Burweed, lawn	<i>Soliva pterosperma</i>
Carpetweed	<i>Mollugo verticillata</i>
Chickweed, common	<i>Stellaria media</i>
Chickweed, mouseear	<i>Cerastium vulgatum</i>
Clover, hop	<i>Trifolium procumbens</i>
Cudweed	<i>Gnaphalium</i> spp.
Evening primrose	<i>Oenothera biennis</i>
Fiddleneck	<i>Amsinckia intermedia</i>
Filaree	<i>Erodium</i> spp.
Henbit	<i>Lamium amplexicaule</i>
Knotweed, prostrate	<i>Polygonum aviculare</i>
Kochia	<i>Kochia scoparia</i>
Lambsquarters	<i>Chenopodium album</i>
Pigweed	<i>Amaranthus</i> spp.
Puncturevine	<i>Tribulus terrestris</i>
Purslane	<i>Portulaca oleracea</i>
Pusley, Florida	<i>Richardia scabra</i>

(continued)

**Table 1. Weeds Controlled** (continued)

Common Name	Scientific Name
<b>Broadleaf Weeds</b> (continued)	
Rocket, London	<i>Sisymbrium irio</i>
Shepherdspurse	<i>Capsella bursa-pastoris</i>
Smartweed, Pennsylvania	<i>Polygonum pensylvanicum</i>
Speedwell, corn	<i>Veronica arvensis</i>
Spurge, annual	<i>Euphorbia</i> spp.
Spurge, prostrate	<i>Chamaesyce humistrata</i>
Woodsorrel, yellow	<i>Oxalis stricta</i>
Velvetleaf (Buttonweed)	<i>Abutilon theophrasti</i>

### Application Use Sites

Use **Pendulum® AquaCap herbicide** for preemergence control of grass and certain broadleaf weed species as they germinate **in any turfgrass site** (golf courses, lawns, sod farms and other turf areas) and **landscape ornamental maintenance areas**. Examples of such sites include, but are not limited to: grounds or lawns around residential and commercial establishments, multifamily dwellings, military and other institutions, parks, airports, roadsides, schools, picnic grounds, athletic fields, houses of worship, cemeteries, golf courses, prairie grass areas, and sod farms.

**Pendulum AquaCap can be applied for general grounds maintenance** in areas such as parking lots, driveways and roadsides, alleyways, bike and jogging paths, vacant lots, buildings, stone gardens and gravel yards, markers and fence lines, and mulch beds. It may be used under asphalt or concrete treatments as part of a site preparation program.

Use **Pendulum AquaCap** for preemergence control of most annual grasses and certain broadleaf weeds as they germinate **in any noncropland area** such as railroad, utility, highway, and pipeline rights-of-way; highway guardrails, delineators, and sign posts; bridge abutments and approaches; utility substations; petroleum tank farms; pumping installations; storage areas; fence rows; windbreaks and shelterbelts; paved or gravel surfaces; and established wildflower plantings where weed control is desired.

**Pendulum AquaCap** can also be used **in bulb plantings, nonbearing fruit and nut tree nurseries, conifer and hardwood seedling nurseries, and tree plantations for site preparation and maintenance**.

Applications can be made, but are not limited to, plant species listed on this label such as trees, shrubs, groundcovers, perennials, bulbs, ornamental grasses, and bedding plants.

**Pendulum AquaCap** can be used **in and around field, liner, and container ornamental production**.

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## Application Instructions

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**Pendulum® AquaCap herbicide** will not control established weeds. Therefore, areas to be treated should be free of established weeds at the time of treatment, or **Pendulum AquaCap** may be used with herbicides registered for postemergence use in managed turf sites, landscape ornamentals, and in other noncropland areas. Consult the labels of those herbicides for suggested treatments, rates, and precautions or restrictions for use in these areas. The efficacy of **Pendulum AquaCap** will improve if the application is followed by 1/2 inch of rainfall or its equivalent in sprinkler irrigation. If **Pendulum AquaCap** is not activated by rainfall or irrigation within 30 days, erratic weed control may result.

Applied according to label directions and under normal growing conditions, **Pendulum AquaCap** or **Pendulum AquaCap** tank mix combinations will not cause crop injury. Overapplication can result in crop stand loss, crop injury, or soil residues. Uneven application can decrease weed control or cause crop injury.

Seedling diseases, cold weather, excessive moisture, high soil pH, high soil salt concentration, or drought can weaken seedlings and plants and increase the possibility of plant damage from **Pendulum AquaCap**.

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## Mixing Instructions

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**Pendulum AquaCap** may be applied in a tank mix or a sequential application with other herbicides registered for use in a given crop. Refer to the companion label for weeds controlled in addition to **Pendulum AquaCap** alone.

When using tank mixtures or sequential applications with **Pendulum AquaCap**, always read the companion product label(s) to determine the specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow all precautions and restrictions including state and local use restrictions that may apply to specific products. Always follow the most restrictive label.

Fill tank 1/2 to 3/4 full with clean water or liquid fertilizer and agitate. Before mixing **Pendulum AquaCap** or **Pendulum AquaCap** tank mixtures in liquid fertilizer, refer to appropriate label sections for recommended uses in liquid fertilizer, application instructions, and compatibility determinations.

### Pendulum AquaCap Alone

When using **Pendulum AquaCap** alone, add **Pendulum AquaCap** to the partially filled tank while agitating; then fill the remainder of the tank with water or liquid fertilizer.

### Pendulum AquaCap Tank Mixes

Add the tank mixture ingredients in the following order:

1. **Wettable Powder (WP) formulations** - Make a slurry of the WP in water (1:2 ratio). Add the slurry slowly into the partially filled tank while agitating.

2. **Dry Flowable/Water Dispersible Granule (DF/WDG) formulations** - Add the granules to the partially filled tank while agitating. Make a slurry of the granules in water before adding to liquid fertilizer.
3. **Flowable (F) formulations** - Add the F formulation to the partially filled tank while agitating.
4. Add **Pendulum AquaCap** to the partially filled tank while agitating.
5. **Water-soluble Concentrate (WSC) formulations** - Add the WSC formulation to the partially filled tank while agitating.
6. **Emulsifiable Concentrate (EC) formulations** - Add the EC formulation to the partially filled tank while agitating.

Fill the remainder of the tank with water or liquid fertilizer while agitating.

Maintain continuous agitation while adding herbicides and until spraying is completed. If the spray mixture is allowed to settle for any period of time, thorough agitation is essential to resuspend the mixture before spraying is resumed.

## Backpack Sprayer

Begin with a clean spray tank. Fill the spray tank 1/2 full with clean water and add the required amount of **Pendulum AquaCap** to the sprayer. Cap sprayer and agitate to ensure mixing. Uncap sprayer and finish filling tank to desired level. Cap sprayer and agitate once again. During application it is desirable to agitate the mixture on occasion to ensure mixing. If the spray mixture is allowed to settle for any period of time, thorough agitation is essential before spraying is resumed.

## Liquid Fertilizers

Before mixing, always test small quantities with a simple jar test. Add the required amount of **Pendulum AquaCap** to a half-filled spray tank while agitating; then add the fertilizer product. Complete filling spray tank to desired level.

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## Spraying Instructions

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Avoid unintentional contact of spray solution with driveways, stone, wood, or other porous surfaces. Rinse immediately with water to avoid staining. Avoid mechanically scrubbing until surface area is thoroughly rinsed. Treated turfgrass should be dry before entering to avoid staining onto nontreated surfaces.

## Ground Application (spray boom)

Uniformly apply with properly calibrated ground equipment in sufficient water per acre to uniformly treat the area with a spray pressure of 25 to 50 psi. Suggested spray volumes are 20 to 200 gpa for professional turfgrass, landscape and ornamental applications, and 10 to 200 gpa for all other noncrop applications such as roadsides, utility rights-of-way, or soft-residual bareground applications. Maintain continuous agitation during spraying with good mechanical or bypass agitation. Avoid overlaps that will increase rates above those specified.

## Ground Application (hand-held equipment)

Use **Table 2** or **Table 3** to determine the amount of **Pendulum® AquaCap herbicide** to apply per 1,000 square feet of treated area. The amount of water used for the application is not critical but should be sufficient for thorough coverage without runoff. Calibration of backpack or other hand-held equipment will vary with each operator. Determine the amount of water needed to treat 1,000 square feet before mixing the spray solution. Follow information in **Mixing Instructions** section of this label.

## Aerial Application

Uniformly apply in 5 or more gallons of water per acre.

### Spray Drift Management

#### Ground Application (spray boom)

- Applicators must only apply with the nozzle height recommended by the manufacturer, but no more than 3 feet above the ground or plant canopy.
- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- **DO NOT** apply when wind speeds exceed 15 mph at the application site.
- **DO NOT** apply during temperature inversions.

#### Ground Application (hand-held)

- Take precautions to minimize spray drift.

### Spray Drift Management

#### Aerial Application

- **DO NOT** release spray at a height greater than 10 feet above the ground or plant canopy, unless a greater application height is necessary for pilot safety.
- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- **DO NOT** apply when wind speeds exceed 15 mph at the application site. If the wind speed is greater than 10 mph, the boom length must not exceed 65% of the wingspan for fixed wing aircraft or 75% of the rotor diameter for helicopters. Otherwise, the boom length must not exceed 75% of the wingspan for fixed wing aircraft or 90% of the rotor diameter for helicopters.
- Applicators must use 1/2 swath displacement upwind at the downwind edge of the field.
- Nozzles must be oriented so the spray is directed toward the back of the aircraft.
- **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.

### Controlling Droplet Size - Aircraft

- **Adjust Nozzles** - Follow nozzle manufacturer's recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

### Boom Height - Ground Boom

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

### Release Height - Aircraft

Higher release heights increase the potential for spray drift.

### 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 Inversion

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.

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## Turfgrass

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Use **Pendulum® AquaCap herbicide** for preemergence control of grasses and certain broadleaf weed species as they germinate in any turfgrass site (golf courses, lawns, sod farms and other turf areas) and landscape ornamental maintenance areas. Examples of such sites include, but are not limited to: grounds or lawns around residential and commercial establishments, multifamily dwellings, military and other institutions, parks, airports, roadsides, schools, picnic grounds, athletic fields, houses of worship, cemeteries, golf courses, prairie grass areas, and sod farms.

The efficacy of **Pendulum AquaCap** will be improved if the application is followed by 1/2 inch of rainfall or its equivalent in sprinkler irrigation. If **Pendulum AquaCap** is not activated by rainfall or irrigation within 30 days, erratic weed control may result.

To prevent establishment of weeds along the edges of treated area, it may be necessary to overlap the spray 3 to 6 inches onto sidewalks or driveways, etc., to ensure effective application rates in these especially vulnerable sites. Where temporary discoloration of pavement is to be avoided, **DO NOT** rub or scrub surface. Rinse area immediately using a heavy spray of water to avoid staining. Treated turfgrass should be dry before entering to avoid staining onto nontreated surfaces.

### Turfgrass Tank Mixes

**Pendulum AquaCap** can be mixed with postemergence herbicides to control emerged weeds in nonresidential turfgrass. For annual grass control, applications can be made with **Drive® 75 DF herbicide, Drive® XLR8 herbicide**, or MSMA to control emerged weeds.

Broadleaf weeds can be controlled using **Trimec® herbicide, Three-Way™ herbicide**, 2-4,D and other similar products.

Before tank mixing, use a simple jar test to ensure compatibility of herbicides.

Refer to manufacturer's labels for specific use directions, precautions, and limitations before tank mixing with **Pendulum AquaCap**. Follow those that are most restrictive.

### Turfgrass Restrictions

- Use on well-established turfgrass with a dense and uniform stand. On turf that has been thinned or damaged due to winter injury, excessive moisture, etc., allow for turf recovery before application.
- On newly planted areas, application should not be made until the turfgrass has filled in and has been mowed at least four times. Applications made to overseeded warm-season turfgrass may cause thinning or injury of the overseeded species.
- **DO NOT** use on bentgrass or *Poa annua* greens and tees or injury may occur.

- Delay reseeding or winter overseeding treated turfgrass for at least three (3) months following the last **Pendulum AquaCap** application.
- Delay sprigging turfgrass for five (5) months after application.

**Table 2. Pendulum® AquaCap herbicide Residential, Golf Course, Commercial, and Other Nonresidential Turfgrass Uses for Preemergence Weed Control<sup>1</sup>**

Cool Season Turfgrass	Weed	Product per 1,000 sq ft (fl ozs)	Product per acre (pts)	Comment	
Bluegrass, Kentucky Fescue, fine Fescue, tall Ryegrass, perennial	barnyardgrass crabgrass evening primrose fall panicum foxtail hop clover knotweed oxalis <i>Poa annua</i> prostrate spurge purslane	<b>All Turf Uses:</b>		Apply a repeat application of 2.2 to 3.1 pts/A (0.86 to 1.1 fl ozs/1,000 sq ft) after 5 to 8 weeks for extended control or where heavy weed infestations are expected.	
		1.1 to 1.6	3.1 to 4.2		
		Initial application before weed germination in spring			
	goosegrass	<b>Residential and Sod Farm Turf Uses Only<sup>2</sup>:</b>		Apply a repeat application of 3.1 pts/A (1.1 fl ozs/1,000 sq ft) if the lower rate was used initially or for extended goosegrass control after 5 to 8 weeks.	
		1.1 to 1.6	3.1 to 4.2		
		<b>Golf Course, Commercial and Other Nonresidential Turf Uses Only:</b>			
		1.1 to 2.3	3.1 to 6.3		
		Initial application before weed germination in spring			
	chickweed corn speedwell cudweed henbit lawn burweed <i>Poa annua</i>	<b>All Turf Uses:</b>		Apply in late summer or early fall before weed germination. Apply a repeat application of 3.1 to 4.2 pts/A (1.1 to 1.6 fl ozs/1,000 sq ft) after 5 to 8 weeks for extended <i>Poa annua</i> control.	
		1.1 to 1.6	3.1 to 4.2		
	Bentgrass or established <i>Poa annua</i> <sup>3</sup> (1/2-inch high or taller)	barnyardgrass crabgrass evening primrose fall panicum foxtail hop clover knotweed oxalis <i>Poa annua</i> prostrate spurge purslane	<b>All Turf Uses (Non-greens and Tees):</b>		Apply a repeat application of 2.2 to 3.1 pts/A (0.86 to 1.1 fl ozs/1,000 sq ft) after 5 to 8 weeks for extended control or where heavy weed infestations are expected.
			1.1	3.1	
Initial application before weed germination in spring					
goosegrass		<b>All Turf Uses (Non-greens and Tees):</b>		Apply a repeat application of 3.1 pts/A (1.1 fl ozs/1,000 sq ft) for extended goosegrass control after 5 to 8 weeks.	
		1.1	3.1		
		Initial application before weed germination in spring			
chickweed corn speedwell cudweed henbit lawn burweed <i>Poa annua</i>		<b>All Turf Uses (Non-greens and Tees):</b>		Apply in late summer or early fall before weed germination.	
		1.1 to 1.6	3.1 to 4.2		

(continued)

**Table 2. Pendulum® AquaCap herbicide Residential, Golf Course, Commercial, and Other Nonresidential Turfgrass Uses for Preemergence Weed Control<sup>1</sup> (continued)**

Warm Season Turfgrass	Weed	Product per 1,000 sq ft (fl ozs)	Product per acre (pts)	Comment
Bahigrass Bermudagrass Buffalograss Centipedegrass Fescue, tall <i>Paspalum</i> , seashore St. Augustinegrass Zoysiagrass	barnyardgrass crabgrass evening primrose fall panicum foxtail hop clover knotweed oxalis <i>Poa annua</i> prostrate spurge purslane	<b>Residential and Sod Farm Turf Uses Only:</b>		Apply a repeat application of 2.2 to 3.1 pts/A (0.86 to 1.1 fl ozs/1,000 sq ft) after 5 to 8 weeks if necessary.
		1.1 to 1.6	3.1 to 4.2	
		<b>Golf Course, Commercial and Other Nonresidential Turf Uses Only:</b>		
		1.1 to 2.3	3.1 to 6.3	
		Initial application before weed germination in spring		
	goosegrass	<b>All Turf Uses (Non-greens and Tees):</b>		An additional application of 3.1 pts/A (1.1 fl ozs/1,000 sq ft) may be made for extended goosegrass control 8 weeks after the second application.
		1.1	3.1	
		Apply before weed germination in spring. Make a second application at 3.1 pts/A (1.1 fl ozs/1,000 sq ft) 5 to 8 weeks later.		
	chickweed corn speedwell cudweed henbit lawn burweed <i>Poa annua</i>	<b>All Turf Uses:</b>		Apply in late summer or early fall before weed germination. Apply a repeat application of 3.1 to 4.2 pts/A (1.1 to 1.6 fl ozs/1,000 sq ft) after 5 to 8 weeks for extended <i>Poa annua</i> control.
		1.1 to 1.6	3.1 to 4.2	
<sup>1</sup> <b>DO NOT</b> exceed a maximum of 4.2 pints (2.1 quarts)/A or 1.6 fl ozs/1,000 sq ft product <b>per application</b> for use on residential and sod farm turfgrass. <b>DO NOT</b> exceed a maximum rate of 6.3 pints (3.1 quarts)/A or 2.3 fl ozs/1,000 sq ft product <b>per application</b> for use on golf course turfgrass, commercial, or other nonresidential turfgrass.				
<sup>2</sup> Residential is defined as turf in any residential situation as well as home lawns, schools, parks, and playgrounds.				
<sup>3</sup> <b>DO NOT</b> use on bentgrass or <i>Poa annua</i> greens or tees.				

## Weeds Controlled

**Pendulum AquaCap** will not control established weeds. If weeds should germinate before activation of herbicide, shallow cultivate to destroy existing weeds or, where practical, remove by hand. When cultivating for any reason, it should be shallow. **Pendulum AquaCap** may be used with herbicides registered for postemergence application (i.e. **Roundup® herbicide** or **Finale® herbicide**) for control of established weeds. **DO NOT** apply sprays containing **Roundup** or **Finale** over the top of desirable plants. A **Pendulum AquaCap** treatment may be followed by any registered herbicide to control weeds not listed on the **Pendulum AquaCap** label.

## Landscape and Grounds Maintenance

**Pendulum AquaCap** can be incorporated into landscape and grounds maintenance programs to provide extended preemergence control of most annual grasses and certain

broadleaf weeds. Areas to be treated, such as mulch beds, parking areas and roadsides, fencelines and borders, and around statuary or monuments, should be free of emerged weeds before application. To remove emerged weeds, either cultivate or tank mix **Pendulum AquaCap** with a postemergence product labeled for such use.

Not all ornamental species or cultivars of species can be tested for plant safety. Refer to the list of ornamental plant species found in this label (**Table 4. Tolerant Ornamental Species**). **Pendulum AquaCap** may be used on plant species not listed on this label; however, testing a small number plants at the specified rate and evaluating for suitability before a broad-use application is advised. Refer to **Table 3. Weed Control in All Nonturfgrass Sites** for application rates. Avoid unintentional contact of spray solution with stone, wood, or other porous surfaces because staining may occur. Rinse surfaces immediately using a heavy spray of water to avoid staining.

### Table 3. Weed Control in All Nonturfgrass Sites\*

For preemergence control of the weed species listed, apply **Pendulum® AquaCap herbicide** at the specified rates:

Length of Control (months)	Pendulum AquaCap (qts/A)	Required to Treat 1,000 sq ft (fl ozs)
Short term (2 to 4)	2.1	1.6
Long term (6 to 8)	4.2	3.2

\* For all turfgrass weed control rates, refer to **Table 2. Pendulum® AquaCap herbicide Residential, Golf Course, Commercial, and Other Nonresidential Turfgrass Uses for Preemergence Weed Control.**

For extended weed control, repeat applications of **Pendulum AquaCap** can be made.

### Ornamental Plantings and Tree Plantations including Noncropland Areas

Use **Pendulum AquaCap** for grounds maintenance in noncropland areas, for preemergence control of the weed species listed in and around established tree plantations for site preparation, and for maintenance of conifer and hardwood seedling nurseries and pulpwood and fiber farms. **Pendulum AquaCap** may be used for hardwood and conifer regeneration on conservation reserve program land. **Pendulum AquaCap** can also be used in Christmas trees and nonbearing fruit and nutcrops and vineyards established, or bulb and wildflower field plantings, in and around established ornamentals planted in noncropland areas such as highway rights-of-way and utility substations. Refer to **Table 3. Weed Control in All Nonturfgrass Sites** for application rates.

#### Applications at Planting or to Established Trees

When applying at planting, it is important to achieve slit closure to prevent **Pendulum AquaCap** from directly contacting the tree roots or being washed into the root zone via the open slit, or root stunting may occur. Refer to **Landscape and Ornamental Plantings Instructions and Restrictions** chart before application.

For postemergence weed control, tank mix combinations of **Pendulum AquaCap** plus **Segment® herbicide**, **Roundup® herbicide**, **Finale® herbicide**, or other labeled herbicides are recommended. Refer to approved labeling for species recommendations. Determine rates for tank mix compounds from the product labels of **Pendulum AquaCap** and partner herbicides before use. Use caution to prevent combination sprays from direct contact with desirable foliage or injury may result. **Pendulum AquaCap** plus diuron or simazine

combinations will broaden weed control spectrum; however, use of combinations may restrict **Pendulum AquaCap** use in sensitive areas. Refer to manufacturer's labels for specific use directions, precautions, and limitations before application and follow those that are most restrictive.

#### Ornamental Bulbs

**Pendulum AquaCap** may be applied for control of susceptible annual weeds in ornamental bulbs listed in the **Perennials** section in **Table 4. Tolerant Ornamental Species** (crocus, daffodil [narcissus], gladiolus, lily, tulip, etc.). Apply **Pendulum AquaCap** before, during, or after bulb emergence. If weeds have already germinated, add a labeled postemergence herbicide to control emerged weeds.

#### Wildflowers

**Pendulum AquaCap** may be applied for control of susceptible annual weeds in plantings of wildflowers listed in the **Perennials** section in **Table 4. Tolerant Ornamental Species**. The perennial species noted<sup>1</sup> (black-eyed Susan, California poppy, coreopsis, oxeye daisy, etc.) have been evaluated for plant tolerance to applications of **Pendulum AquaCap** at 4.2 pints (2.1 quarts) per acre. **Pendulum AquaCap** may be applied to established perennial wildflowers before emergence of weeds or wildflowers. For wildflowers being established from seed, apply **Pendulum AquaCap** no sooner than 4 weeks after wildflowers have emerged, but before weed germination. If weeds have already germinated, add a labeled postemergence product to control emerged weeds. Refer to all label restrictions before application.

Due to the diversity of species and varieties that exist in areas where wildflowers are grown, the response to **Pendulum AquaCap** may vary greatly. Careful testing on desirable species is recommended to determine if area-wide applications can be made.

#### Nonbearing Fruit and Nutcrops and Vineyards

**Pendulum AquaCap** may be applied for preemergence control of most annual grasses and certain broadleaf weeds on the following nonbearing crops:

Almond	Grape	Pistachio
Apple	Nectarine	Plum
Apricot	Olive	Prune
Cherry	Peach	Walnut, English
Citrus	Pear	
Fig	Pecan	

#### Noncropland

Use **Pendulum AquaCap** for preemergence control of most annual grasses and certain broadleaf weeds as they germinate on noncropland areas such as railroad, utility, highway, and pipeline rights-of-way; highway guardrails, delineators, and sign posts; utility substations, petroleum tank farms, pumping installations, fence rows, storage areas, windbreaks and shelterbelts.

## Industrial (Unimproved) Turf

**Pendulum® AquaCap herbicide** will provide pre-emergence control of the annual grasses and broadleaf weeds listed in **Table 1. Weeds Controlled** that might germinate in established grass in rights-of-way, roadsides, construction sites, parks, substations, or lots.

Apply before weeds germinate. A postemergence herbicide such as 2,4-D, **Drive® 75 DF herbicide**, **Drive® XLR8 herbicide**, **Segment® herbicide**, MSMA, or similar products may be tank mixed to control established weeds. Apply according to label instructions for the respective products and follow the most restrictive wording.

## Total Vegetation Control

**Pendulum AquaCap** may be tank mixed with **Arsenal® herbicide**, **Sahara® DG herbicide**, **Plateau® herbicide**, **Segment**, **Roundup PRO® herbicide**, **Karmex® herbicide**, **Finale® herbicide**, **Oust® herbicide**, diuron, glyphosate or other products to provide bareground or total vegetation control. **Pendulum AquaCap** can be used to provide greater plant selectivity in areas where such action may be desired. Such sites might have roots of landscape vegetation, ornamentals, or desirable trees encroaching into the treated zone. Refer to tank mix partner labels regarding effects on desirable plants. **DO NOT** tank mix with **Arsenal**, **Sahara DG**, or **Plateau herbicides** in California.

Applications may be made to existing weeds controlled by the partner herbicide. Determine rates from the product labels before use. Follow the most restrictive label instructions.

For kochia control, combinations of **Pendulum AquaCap** with **Arsenal** or diuron are recommended if control has been a problem for other herbicides.

## Landscape and Ornamental Plantings Instructions and Restrictions<sup>1</sup>

Site	Application Instructions and Restrictions
Landscape plantings <sup>2</sup>	<ol style="list-style-type: none"> <li><b>DO NOT</b> apply to newly transplanted ornamentals until plants have been watered and soil has been thoroughly packed and settled around roots.</li> <li>Apply as a directed or over-the-top spray.</li> <li>Use the lowest labeled rate when making applications to annuals. Repeat applications can be made for extended landscape weed control.</li> </ol>
Ornamental bulbs <sup>3</sup>	<ol style="list-style-type: none"> <li><b>Pendulum AquaCap</b> may be applied to bulb species listed on the label.</li> <li>Apply before bulb emergence.</li> </ol>

(continued)

## Landscape and Ornamental Plantings Instructions and Restrictions<sup>1</sup> (continued)

Site	Application Instructions and Restrictions
Wildflowers <sup>3</sup>	<ol style="list-style-type: none"> <li><b>Pendulum AquaCap</b> may be applied in plantings of wildflowers listed on the label. Refer to specific instructions for rate and plant tolerance.</li> <li>For wildflowers being established from seed, apply at 4 weeks after wildflowers have germinated, but before weed seed germination.</li> </ol>
<sup>1</sup> Plant only those desirable plant species listed on this label into soil treated the previous season with <b>Pendulum AquaCap</b> or injury may occur.	
<sup>2</sup> Before treating a large number of plants, spray a few plants and observe for 1 to 2 months for plant damage before full-scale application.	
<sup>3</sup> <b>DO NOT</b> treat plants grown for food or feed. <b>DO NOT</b> use treated plants for food or feed.	

## Weeds Controlled

**Pendulum AquaCap** will not control established weeds. If weeds germinate before herbicide activation, shallow cultivate to destroy existing weeds or, where practical, remove by hand. When cultivating for any reason, it should be shallow.

Use **Pendulum AquaCap** with herbicides registered for postemergence application (i.e. **Roundup® herbicide** or **Finale**) for control of established weeds. **DO NOT** apply sprays containing **Roundup** or **Finale** over the top of desirable plants. A **Pendulum AquaCap** treatment may be followed by any registered herbicide to control weeds not listed on the **Pendulum AquaCap** label.

The efficacy of **Pendulum AquaCap** will be improved if the application is followed by 1/2 inch of rainfall or its equivalent in sprinkler irrigation. Erratic weed control may result if **Pendulum AquaCap** is not activated by rainfall or irrigation within 30 days.

## Commercial Ornamental Production

### Application Use Sites

**Pendulum AquaCap** can be used in and around field, liner, and container ornamental production.

**Pendulum AquaCap** sprays are safe around and over the top of the established plants listed in **Table 4. Tolerant Ornamental Species**. However, not all varieties or strains of the plant species listed have been tested. Refer to ornamental instructions and restrictions in this label before any application of **Pendulum AquaCap**. Unintentional consequences such as crop injury may result because of certain environmental or growing conditions, manner of use, or application. Therefore, before treating a large number of plants, spray a few plants and observe for plant damage before full-scale application.

## Application Instructions

**Pendulum® AquaCap herbicide** will not control established weeds. Therefore, areas to be treated should be free of established weeds at the time of treatment, or use **Pendulum AquaCap** with herbicides registered for post-emergence use in ornamentals and vegetation control sites. Consult the labels of those herbicides for suggested treatments, rates, and precautions or restrictions for use in these areas.

The efficacy of **Pendulum AquaCap** will improve if the application is followed by 1/2 inch of rainfall or its equivalent in sprinkler irrigation. If **Pendulum AquaCap** is not activated by rainfall or irrigation within 30 days, erratic weed control may result.

Applied according to label directions and under normal growing conditions, **Pendulum AquaCap** or **Pendulum AquaCap** tank mix combinations will not cause crop injury. Overapplication can result in crop-stand loss, crop injury, or soil residues. Uneven application can decrease weed control or cause crop injury.

Seedling diseases, cold weather, excessive moisture, high soil pH, high soil salt concentration, or drought can weaken seedlings and plants and increase the possibility of plant damage from **Pendulum AquaCap**.

## Production Ornamentals Instructions and Restrictions<sup>1</sup>

Site	Application Instructions and Restrictions
Newly transplanted field-grown nursery stock <sup>2,3</sup>	<ol style="list-style-type: none"> <li><b>DO NOT</b> make over-the-top applications at time of field transplanting. Use shielded sprayer until plantings have been established for one (1) year or more in the field.</li> <li><b>DO NOT</b> apply until transplants have been watered and soil has been thoroughly packed and settled around transplants. Take care to ensure there are no cracks in the soil where <b>Pendulum AquaCap</b> could come into contact with the roots.</li> <li><b>DO NOT</b> apply during bud swell, bud break, or at time of first flush of new growth.</li> <li>Direct sprays away from grafted or budded tissue on transplants at all times.</li> </ol>
Ornamental bulbs <sup>3</sup>	<ol style="list-style-type: none"> <li><b>Pendulum AquaCap</b> may be applied to bulb species listed on the label.</li> <li>Apply before bulb emergence.</li> </ol>

(continued)

## Production Ornamentals Instructions and Restrictions<sup>1</sup> (continued)

Site	Application Instructions and Restrictions
Newly transplanted container-grown nursery stock <sup>2,3</sup>	<ol style="list-style-type: none"> <li><b>DO NOT</b> apply until transplants have been watered and soil has been thoroughly packed and settled around transplants. Take care to ensure there are no cracks in the soil where <b>Pendulum AquaCap</b> could come into contact with the roots.</li> <li>For container-grown ornamentals, delay first application of the product to bareroot liners for two (2) weeks after transplanting.</li> <li><b>DO NOT</b> apply during bud swell, bud break, or at time of first flush of new growth.</li> <li>Direct sprays away from grafted or budded tissue on transplants at all times.</li> </ol>
Established container or field-grown nursery stock <sup>2,3</sup>	<ol style="list-style-type: none"> <li><b>DO NOT</b> apply during bud swell, bud break, or at time of first flush of new growth.</li> <li>Apply as a directed or over-the-top spray.</li> <li>If newly budded or grafted rootstock, apply with a shielded sprayer.</li> <li>Take care to ensure there are no cracks in the soil where <b>Pendulum AquaCap</b> could come into contact with the roots.</li> </ol>
Bareground for container placement	Apply to soil (including mulch, gravel, wood chips, or other permeable base); then water in. Replace containerized ornamentals onto pad.
Greenhouses, shadehouses, or other enclosed structures	<b>DO NOT</b> apply in greenhouses, shadehouses, or other enclosed structures.

<sup>1</sup> Plant only those desirable plant species listed on this label into soil treated the previous season with **Pendulum AquaCap** or injury may occur.

<sup>2</sup> Before treating a large number of plants, spray a few plants and observe for 1 to 2 months for plant damage before full-scale application.

<sup>3</sup> **DO NOT** treat plants grown for food or feed. **DO NOT** use treated plants for food or feed.

Refer to **Table 3. Weed Control in All Nonturfgrass Sites** for application rates.

## Ornamental Tank Mixes

Emerged weeds in ornamentals can be controlled using tank mixes containing **Segment® herbicide, Roundup® herbicide, Finale® herbicide, Ornamec® herbicide, Gallery® herbicide, Princep® herbicide**, and other similar products. **DO NOT** apply sprays containing **Roundup** or **Finale** over the top of ornamental plants.

Before tank mixing, use a simple jar test to ensure compatibility of herbicides.

Refer to manufacturer's labels for specific use directions, precautions, and limitations before tank mixing with **Pendulum® AquaCap herbicide**. Follow those that are most restrictive.

## Christmas Tree Plantations

Use **Pendulum AquaCap** in and around Christmas tree plantations. Apply **Pendulum AquaCap** at planting or to established trees. When applying at planting, it is important to achieve slit closure to prevent **Pendulum AquaCap** from directly contacting the tree roots or being washed into the root zone via the open slit or root stunting may occur.

For postemergence weed control, tank mix combinations of **Pendulum AquaCap** plus **Segment, Roundup, Finale**, or other labeled herbicides are recommended. Refer to approved labeling for species recommendations. Determine rates for tank mix combinations from the product labels of **Pendulum AquaCap** and partner herbicides before use. Use caution to prevent combination sprays from direct contact with desirable foliage or injury may result. **Pendulum AquaCap** plus diuron or simazine combinations will broaden weed control spectrum; however, use of combinations may restrict **Pendulum AquaCap** use in sensitive areas. Refer to manufacturer's labels for specific use directions, precautions, and limitations before application. Follow those that are most restrictive. Refer to **Table 3. Weed Control in All Nonturfgrass Sites** for **Pendulum AquaCap** application rates.

## Vegetation Control in Ornamental Production

Use **Pendulum AquaCap** for preemergence control of most annual grasses and certain broadleaf weeds as they germinate on noncropland areas such as sign posts, pumping installations, fence rows, storage areas, and windbreaks and shelterbelts. **Pendulum AquaCap** may be tank mixed with **Segment, Roundup PRO® herbicide, Karmex® herbicide, Finale**, diuron, glyphosate or other products to provide bareground or total vegetation control. **Pendulum AquaCap** can be used to provide greater plant selectivity in areas where such action may be desired. Such sites might have roots of landscape vegetation, ornamentals, or desirable trees encroaching into the treated zone. Refer to tank mix partner labels regarding effects on desirable plants. Applications may be made to existing weeds controlled by the partner herbicide. Determine rates from the product

labels before use. Follow the most restrictive label instructions. Refer to **Table 3. Weed Control in All Nonturfgrass Sites** for **Pendulum AquaCap** application rates.

## Weeds Controlled

**Pendulum AquaCap** will not control established weeds. If weeds germinate before herbicide activation, shallow cultivate to destroy existing weeds or, where practical, remove by hand. When cultivating for any reason, it should be shallow. **Pendulum AquaCap** may be used with herbicides registered for postemergence application (i.e. **Roundup** or **Finale**) for the control of established weeds. **DO NOT** apply sprays containing **Roundup** or **Finale** over the top of desirable plants. A **Pendulum AquaCap** treatment may be followed by any registered herbicide to control weeds not listed on the **Pendulum AquaCap** label.

The efficacy of **Pendulum AquaCap** will be improved if the application is followed by 1/2 inch of rainfall or its equivalent in sprinkler irrigation. Erratic weed control may result if **Pendulum AquaCap** is not activated by rainfall or irrigation within 30 days.

**Pendulum AquaCap** may be used on plant species not listed on this label. Determine the suitability for such uses by treating a small number of such plants at the specified rate. Evaluate treated plants 1 to 2 months following treatment for possible injury.

**Pendulum AquaCap** sprays are safe around and over the top of the established plants listed in **Table 4. Tolerant Ornamental Species**. Refer to ornamentals instructions and restrictions before application. Refer to **Table 3. Weed Control in All Nonturfgrass Sites** for application rates.

**Table 4. Tolerant Ornamental Species**

Common Name	Scientific Name
<b>Bedding Plants</b>	
Ageratum	<i>Ageratum houstonianum</i>
Alyssum <sup>1</sup>	<i>Alyssum saxatile</i>
Anemone, poppy-flowered	<i>Anemone coronaria</i>
Artemesia	<i>Artemesia</i> spp.
Balloonflower	<i>Platycodon grandiflorum</i>
Begonia <sup>1</sup>	<i>Begonia</i> spp.
Cabbage, ornamental	<i>Brassica oleracea</i>
Caladium	<i>Caladium</i> spp.
Cast-iron plant	<i>Aspidistra elatior</i>
China aster <sup>1</sup>	<i>Callistephus chinensis</i>
Crocoshmia, montebretia	<i>Crocoshmia x crocosmiiflora</i>
Dahlia <sup>1</sup>	<i>Dahlia</i> spp.
Dianthus	<i>Dianthus barbatus</i>

(continued)

**Table 4. Tolerant Ornamental Species***(continued)*

Common Name	Scientific Name
<b>Bedding Plants</b> <i>(continued)</i>	
Dusty miller	<i>Senecio cineraria</i>
Gayfeather	<i>Liatris</i> spp.
Gazania, treasure flower	<i>Gazania rigens</i>
Gazania, trailing	<i>Gazania rigens leucolaena</i>
Gloxinia	<i>Gloxinia simningia</i>
Kale, ornamental	<i>Brassica napus</i>
Marigold, African	<i>Tagetes erecta</i>
Moss rose <sup>1</sup>	<i>Portulaca grandiflora</i>
Mum, garden	<i>Chrysanthemum</i> spp.
Periwinkle <sup>1</sup>	<i>Vinca major</i>
Periwinkle, rose	<i>Catharanthus roseus</i>
Petunia <sup>1</sup>	<i>Petunia</i> spp.
Plumosa cockscomb	<i>Celosia cristata</i>
Portulaca <sup>1</sup>	<i>Portulaca grandiflora</i>
Salvia <sup>1</sup>	<i>Salvia splendens</i>
Snapdragon	<i>Antirrhinum majus</i>
Statice <sup>1</sup>	<i>Limonium</i> spp.
Sweet William	<i>Dianthus barbatus</i>
Vinca <sup>1</sup>	<i>Vinca major</i>

<sup>1</sup> Application of **Pendulum® AquaCap herbicide** should not be made sooner than four weeks after transplanting for these annuals. Use the lower labeled rate.

**Ground Covers**

Ajuga	<i>Ajuga reptans</i>
Baby sun rose	<i>Aptenia cordifolia</i>
Beach strawberry	<i>Fragaria chiloensis</i>
Capeweed	<i>Arctotheca calendula</i>
Cinquefoil, spring	<i>Potentilla verna</i>
Coyotebrush, dwarf	<i>Baccharis pitularis</i>
Daisy, trailing African	<i>Osteospermum fruticosum</i>
Dymondia	<i>Dymondia margaretae</i>
Gazania	<i>Gazania splendens</i>
Iceplant, large leaf	<i>Carpobrotus edulis</i>
Ivy, English	<i>Hedera helix</i>
Ivy, geranium	<i>Pelargonium peltatum</i>
Jasmine, Asiatic	<i>Trachelospermum asiaticum</i>
Jasmine, primrose	<i>Jasminum mesnyi</i>
Jessamine, Carolina	<i>Gelsemium sempervirens</i>

*(continued)***Table 4. Tolerant Ornamental Species***(continued)*

Common Name	Scientific Name
<b>Ground Covers</b> <i>(continued)</i>	
Manzanita, bearberry	<i>Arctostaphylos uva-ursi</i>
Miscanthus	<i>Miscanthus</i> spp.
Mondograss	<i>Ophiopogon japonica</i>
Morningglory	<i>Convolvulus</i> spp.
Myoporum	<i>Myoporum parvifolium</i>
Pachysandra	<i>Pachysandra terminalis</i>
Potentilla	<i>Potentilla fruticosa</i>
Red apple	<i>Aptenia cordifolia</i>
Rosemary	<i>Rosemarinus officinalis</i>
Rose-of-Sharon	<i>Hypericum calycinum</i>
St. Johnswort, creeping	<i>Hypericum calycinum</i>
Sand strawberry	<i>Fragaria chiloensis</i>
Sedum	<i>Sedum spurium</i>
Stonecrop	<i>Sedum spurium</i>
Verbena, Peruvian	<i>Verbena peruviana</i>
Vervain	<i>Verbena peruviana</i>
Vetch, crown	<i>Vicia sativa</i>
Vinca	<i>Vinca minor</i>
Wintercreeper	<i>Euonymus fortunei</i>

**Ornamental Grasses**

Beach grass	<i>Ammophila breviligulata</i>
Fescue, blue	<i>Festuca ovina</i>
Fescue, sheep	<i>Festuca ovina</i>
Fountain grass	<i>Pennisetum setaceum</i>
Pampas grass	<i>Cortaderia selloana</i>
Reed canary grass	<i>Phalaris arundinacea</i>
Reed, giant	<i>Arundo</i> spp.
Ribbon grass	<i>Phalaris arundinacea</i>
Tufted hair grass	<i>Deschampsia caespitosa</i>

**Perennials**

Acacia	<i>Acacia redolens</i>
Asparagus	<i>Asparagus</i> spp.
Aster, New York	<i>Aster novi-belgii</i>
Aster, Stokes	<i>Stokesia laevis</i>
Astilbe (False spirea)	<i>Astilbe</i> spp.
Avens	<i>Geum triflorum</i>
Baby's breath	<i>Gypsophila elegans</i>

*(continued)*

**Table 4. Tolerant Ornamental Species***(continued)*

Common Name	Scientific Name
<b>Perennials</b> <i>(continued)</i>	
Baby's breath	<i>Gypsophila paniculata</i>
Beard-tongue	<i>Penstemon</i> spp.
Bellflower	<i>Campanula</i> spp.
Bellflower, willow	<i>Campanula persicifolia</i>
Bird of paradise	<i>Caesalpinia pulcherrima</i>
Black-eyed Susan <sup>1</sup>	<i>Rudbeckia hirta</i>
Blanket flower <sup>1</sup>	<i>Gaillardia aristata</i>
Blanket flower <sup>1</sup>	<i>Gaillardia</i> x <i>grandiflora</i>
Bleeding heart	<i>Dicentra spectabilis</i>
Butterfly weed	<i>Asclepias tuberosa</i>
California poppy <sup>1</sup>	<i>Eschscholzia californica</i>
Calla lily	<i>Zantedeschia aethiopica</i>
Canna, common garden	<i>Canna generalis</i> 'Lucifer'
Carex	<i>Carex</i> spp.
Chincherinchee	<i>Ornithogalum thyrsoides</i>
Clover, crimson <sup>1</sup>	<i>Trifolium incarnatum</i>
Columbine	<i>Aquilegia</i> 'McKana Giant'
Columbine	<i>Aquilegia</i> x <i>hybrida</i>
Coreopsis (Tickseed) <sup>1</sup>	<i>Coreopsis lanceolata</i>
Crinum lily	<i>Crinum</i> spp.
Crocus	<i>Crocus</i> spp.
Daffodil (Narcissus)	<i>Narcissus</i> spp.
Daylily	<i>Hemerocallis</i> spp.
Fairy duster	<i>Calliandra eriophylla</i>
Fern, asparagus	<i>Asparagus officinalis</i>
Fern, Boston	<i>Nephrolepis exaltata</i>
Fern, hay-scented	<i>Dennstaedtia punctilobula</i>
Fern, leatherleaf <sup>2</sup>	<i>Rumohra adiantiformis</i>
Fortnight lily	<i>Moraea</i> spp.
Foxglove	<i>Digitalis purpurea</i>
Freesia	<i>Freesia</i> x <i>hybrida</i>
Gaillardia	<i>Gaillardia pulchella</i>
Geum	<i>Geum</i> spp.
Gladiolus	<i>Gladiolus</i> spp.
Heather, dwarf	<i>Calluna vulgaris</i>
Hosta	<i>Hosta</i> spp.
Indian blanket <sup>1</sup>	<i>Gaillardia pulchella</i>
Iris, Japanese	<i>Iris kaempferi</i>

*(continued)***Table 4. Tolerant Ornamental Species***(continued)*

Common Name	Scientific Name
<b>Perennials</b> <i>(continued)</i>	
Lantana, weeping	<i>Lantana montevidensis</i>
Leopard's bane	<i>Doronicum cordatum</i>
Lily	<i>Lillium</i> spp.
Liriope, big blue	<i>Liriope muscari</i>
Liriope, creeping	<i>Liriope spicata</i>
Liriope, variegated	<i>Liriope muscari</i>
Montbretia	<i>Crocsmia crocosmiiflora</i>
Moonbeam	<i>Coreopsis verticillata</i>
Mugwort, Western	<i>Artemesia ludoviciana</i>
Nightshade	<i>Solanum</i> spp.
Orchid, peacock	<i>Acidantha bicolor</i>
Oxeye daisy <sup>1</sup>	<i>Chrysanthemum leucanthemum</i>
Palm, areca	<i>Chyrsalidocarpus lutescens</i>
Palm, pygmy date	<i>Phoenix roebelenae</i>
Palm, Washington	<i>Washington robusta</i>
Peony, Chinese	<i>Paeonia lactiflora</i>
Purple coneflower <sup>1</sup>	<i>Echinacea purpurea</i>
Purple gay-feather	<i>Liatris pycnostachya</i>
Purple loosestrife	<i>Lythrum virgatum</i>
Rodgersia	<i>Rodgersia henricae</i>
Rosemary	<i>Rosmarinus officinalis</i>
Sedge	<i>Carex</i> spp.
Shasta daisy <sup>1</sup>	<i>Chrysanthemum</i> x <i>superbum</i>
Statice	<i>Limonium latifolia</i>
Statice, German	<i>Goniolimon tartaricum</i>
Sweet flag	<i>Acorus calamus</i>
Tickseed <sup>1</sup>	<i>Coreopsis lanceolata</i>
Texas bluebonnet	<i>Lupinus texensis</i>
Tulip	<i>Tulipa</i> spp.
Wonder flower	<i>Ornithogalum thyrsoides</i>
Yarrow <sup>1</sup>	<i>Achillea millefolium</i>
Zephyr lily	<i>Zephyranthes</i> spp.

<sup>1</sup> These plants have shown tolerance to **Pendulum® AquaCap herbicide** applications of 4.2 pints/A (2.1 quarts/A) in wildflower plantings established from seed.

<sup>2</sup> Applications of **Pendulum AquaCap** to immature ferns (during periods of new growth of fronds) may result in some injury.

*(continued)*

**Table 4. Tolerant Ornamental Species***(continued)*

Common Name	Scientific Name
<b>Shrubs</b>	
Abelia, glossy	<i>Abelia grandiflora</i>
Alder, witch	<i>Fothergilla gardenii</i>
Aucuba, gold	<i>Aucuba japonica</i>
Azalea	<i>Rhododendron</i> spp.
Bamboo, heavenly	<i>Nandina domestica</i>
Barberry	<i>Berberis gladywynensis</i>
Barberry, Japanese	<i>Berberis thunbergii</i>
Blue indigo bush	<i>Dalea gregii</i>
Bottlebrush, lemon	<i>Callistemon citrinus</i>
Boxwood, common	<i>Buxus sempervirens</i>
Boxwood, Japanese	<i>Buxus microphylla</i>
Brittlebush	<i>Encelia farinosa</i>
Buttonbush	<i>Cephalanthus occidentalis</i>
Camellia	<i>Camellia japonica</i>
Cape jasmine	<i>Gardenia jasminoides</i>
Cassia, feathery	<i>Cassia artemisioides</i>
Cordyline	<i>Cordyline</i> spp.
Correa	<i>Correa</i> spp.
Cotoneaster	<i>Cotoneaster apiculatus</i>
Cotoneaster, bearberry	<i>Cotoneaster dammeri</i>
Cotoneaster, rock	<i>Cotoneaster horizontalis</i>
Cypress, Italian	<i>Cupressus sempervirens</i>
Cypress, Leyland	<i>Cupressocyparis leylandii</i>
Deutzia, slender	<i>Deutzia gracilis</i>
Dogwood, red twig	<i>Cornus sericea</i>
Elaeagnus	<i>Elaeagnus ebbingei</i>
Escallonia	<i>Escallonia fradesii</i>
Euonymus	<i>Euonymus fortunei</i>
Euonymus, golden	<i>Euonymus japonica</i>
Euonymus, winged	<i>Euonymus alata</i>
Firethorn	<i>Pyracantha coccinea</i>
Forsythia, border	<i>Forsythia intermedia</i>
Fragrant olive	<i>Osmanthus fragrans</i>
Fuchsia, California	<i>Zauschneria californica</i>
Gardenia	<i>Gardenia jasminoides</i>
Hawthorne, Indian	<i>Raphiolepis indica</i>
Hibiscus	<i>Hibiscus syriacus</i>
Holly, Chinese	<i>Ilex cornuta</i>

*(continued)***Table 4. Tolerant Ornamental Species***(continued)*

Common Name	Scientific Name
<b>Shrubs</b> <i>(continued)</i>	
Holly, Japanese	<i>Ilex crenata</i>
Holly, Fosters	<i>Ilex attenuata</i> 'Fosteri'
Holly, Savannah	<i>Ilex attenuata</i>
Holly, Yaupon	<i>Ilex vomitoria</i>
Honeysuckle, bush	<i>Diervilla lonicera</i>
Hopseed bush	<i>Dodonaea viscosa</i>
Hopbush	<i>Dodonaea viscosa</i>
Hydrangea	<i>Hydrangea macrophylla</i>
Juniper	<i>Juniperus</i> spp.
Juniper, Chinese	<i>Juniperus chinensis</i> v. <i>pfitzer</i>
Juniper, shore	<i>Juniperus conferta</i>
Juniper, trailing	<i>Juniperus horizontalis</i>
Laurel, cherry	<i>Prunus laurocerasus</i>
Laurel, mountain	<i>Kalmia latifolia</i>
Laurel, Otto Luyken	<i>Prunus laurocerasus</i>
Laurel, Schipka	<i>Prunus schipkanensis</i>
Laurustinus	<i>Viburnum tinus</i>
Lavender, English	<i>Lavandula angustifolia</i>
Leucothoe	<i>Leucothoe fontanesiana</i>
Leucothoe, coast	<i>Leucothoe axillaris</i>
Lilac, cut-leaf	<i>Syringa laciniata</i>
Lily-of-the-Nile	<i>Agapanthus africanus</i>
Mahonia	<i>Mahonia aquifolium</i>
Mock orange	<i>Pittosporum tobira</i>
Myrtle, compact	<i>Myrtus communis</i>
Myrtle, wax	<i>Myrica cerifera</i>
Nandina	<i>Nandina domestica</i>
Oleander	<i>Nerium oleander</i>
Oregon grape	<i>Mahonia aquifolium</i>
Osmanthus	<i>Osmanthus fragrans</i>
Palm, European fan	<i>Chamaerops humilis</i>
Palm, Mediterranean fan	<i>Chamaerops</i> spp.
Phlox, prickly	<i>Leptodactylon californicum</i>
Photinia, Fraser	<i>Photinia x fraseri</i>
Pieris, Japanese	<i>Pieris japonica</i>
Pine, Mugo	<i>Pinus mugo</i>
Plum, Natal	<i>Carissa grandiflora</i>
Privet, California	<i>Ligustrum ovalifolium</i>

*(continued)*

**Table 4. Tolerant Ornamental Species***(continued)*

Common Name	Scientific Name
<b>Shrubs</b> <i>(continued)</i>	
Privet, glossy	<i>Ligustrum lucidum</i>
Privet, variegated	<i>Ligustrum sinensis</i>
Privet, waxleaf	<i>Ligustrum japonicum</i>
Pyracantha	<i>Pyracantha coccinea</i>
Quince, flowering	<i>Chaenomeles japonica</i>
Ranger, Texas	<i>Leucophyllum frutescens</i>
Redroot	<i>Ceanothus</i> spp.
Rhododendron	<i>Rhododendron</i> spp.
Robira	<i>Pittosporum tobira</i>
Rose	<i>Rosa</i> spp.
Spice plant	<i>Illicium parviflorum</i>
Spiraea	<i>Spiraea vanhouttei</i>
Spiraea, Anthony Waterer	<i>Spiraea x bumalda</i>
Spiraea, Japanese	<i>Spiraea japonica</i>
Sweet bay	<i>Laurus nobilis</i>
Trumpet bush	<i>Tecoma stans</i>
Verbena, lemon	<i>Aloysia triphylla</i>
Viburnum	<i>Viburnum suspensum</i>
Vitex	<i>Vitex</i> spp.
Weigela	<i>Weigela florida</i>
Wild lilac	<i>Ceanothus</i> spp.
Wisteria	<i>Wisteria</i> spp.
Xylosma	<i>Xylosma congestum</i>
Yellowbells	<i>Tecoma stans</i>
Yew <sup>1</sup>	<i>Taxus media</i>
Yew, Japanese <sup>1</sup>	<i>Taxus cuspidata</i>
Yew, Southern <sup>1</sup>	<i>Podocarpus macrophyllus</i>
Yucca, Adam's needle	<i>Yucca filamentosa</i>
Yucca, weeping	<i>Yucca pendula</i>

<sup>1</sup> Applications of **Pendulum® AquaCap herbicide** should not be made during spring growth or injury to terminals may occur.

**Trees**

Alder, European black	<i>Alnus glutinosa</i>
Apple	<i>Malus</i> spp.
Arborvitae, American	<i>Thuja occidentalis</i>
Arbutus	<i>Arbutus</i> spp.
Ash, red	<i>Fraxinus pennsylvanica</i>

*(continued)***Table 4. Tolerant Ornamental Species***(continued)*

Common Name	Scientific Name
<b>Trees</b> <i>(continued)</i>	
Ash, white	<i>Fraxinus americana</i>
Aspen, bigtooth	<i>Populus grandidentata</i>
Aspen, quaking	<i>Populus tremuloides</i>
Basswood	<i>Tilia</i> spp.
Birch, European weeping	<i>Betula pendula</i>
Birch, river	<i>Betula nigra</i>
Buckeye, red	<i>Aesculus pavia</i>
Cedar, white	<i>Thuja occidentalis</i>
Chamaecyparis, Boulevard	<i>Chamaecyparis pisifera</i>
Cherry, black	<i>Prunus serotina</i>
Cherry, choke	<i>Prunus virginiana</i>
Cherry, Kwanzan	<i>Prunus serrulata</i>
Cherry, Nanking	<i>Prunus tomentosa</i>
Cottonwood	<i>Populus deltoides</i>
Crabapple	<i>Malus</i> spp.
Crape myrtle	<i>Lagerstroemia indica</i>
Cryptomeria, Japanese cedar	<i>Cryptomeria japonica</i>
Cypress, bald	<i>Taxodium distichum</i>
Cypress, Leyland	<i>Cupressocyparis leylandii</i>
Dogwood, flowering	<i>Cornus florida</i>
Dogwood, Korean	<i>Cornus kousa</i>
Dogwood, shrub	<i>Cornus</i> spp.
Dogwood, silky	<i>Cornus amomum</i>
Elm	<i>Ulmus japonica</i>
Elm, winged	<i>Ulmus alata</i>
Eucalyptus (Silver-dollar) tree	<i>Eucalyptus cinerea</i>
Fir, balsam	<i>Abies balsamae</i>
Fir, Douglas	<i>Pseudotsuga menziesii</i>
Fir, Fraser	<i>Abies fraseri</i>
Fir, white	<i>Abies concolor</i>
Franklinia	<i>Franklinia</i> spp.
Fringe tree	<i>Chlonenthus retusus</i>
Ginkgo	<i>Ginkgo biloba</i>
Gum, black	<i>Nyssa sylvatica</i>
Gum, sour	<i>Nyssa sylvatica</i>
Haw, black	<i>Viburnum prunifolium</i>

*(continued)*

**Table 4. Tolerant Ornamental Species***(continued)*

Common Name	Scientific Name
<b>Trees (continued)</b>	
Hawthorn	<i>Crataegus</i> spp.
Hemlock, Canada	<i>Tsuga canadensis</i>
Hemlock, Eastern	<i>Tsuga canadensis</i>
Holly, American	<i>Ilex opaca</i>
Honeylocust	<i>Gleditsia triacanthos</i>
Lilac, common	<i>Syringa vulgaris</i>
Lilac, Japanese tree	<i>Syringa reticulata</i>
Linden	<i>Tilia</i> spp.
Magnolia, saucer	<i>Magnolia soulangiana</i>
Magnolia, Southern	<i>Magnolia grandiflora</i>
Magnolia, star	<i>Magnolia stellata</i>
Maidenhair tree	<i>Ginkgo biloba</i>
Maple, Japanese	<i>Acer palmatum</i>
Maple, Norway	<i>Acer platanoides</i>
Maple, red	<i>Acer rubrum</i>
Maple, sugar	<i>Acer saccharum</i>
Nannyberry, rusty	<i>Viburnum rufidulum</i>
Oak, chinquapin	<i>Quercus muehlenbergii</i>
Oak, live	<i>Quercus virginiana</i>
Oak, pin	<i>Quercus palustris</i>
Oak, red	<i>Quercus rubra</i>
Oak, swamp chestnut	<i>Quercus michauxii</i>
Oak, water	<i>Quercus nigra</i>
Oak, white	<i>Quercus alba</i>
Oak, willow	<i>Quercus phellos</i>
Olive	<i>Olea europaea</i>
Palm, date	<i>Phoenix</i> spp.
Palm, fan	<i>Washingtonia</i> spp.
Palm, pindo	<i>Butia</i> spp.
Palm, Washington	<i>Washingtonia</i> spp.
Peach	<i>Prunus persica</i>
Pear, Bradford	<i>Pyrus calleryana</i> 'Bradford'
Pecan	<i>Carya illinoensis</i>
Pine, Austrian	<i>Pinus nigra</i>
Pine, Italian stone	<i>Pinus pinea</i>
Pine, loblolly	<i>Pinus taeda</i>
Pine, Monterey	<i>Pinus radiata</i>
Pine, red	<i>Pinus resinosa</i>

*(continued)***Table 4. Tolerant Ornamental Species***(continued)*

Common Name	Scientific Name
<b>Trees (continued)</b>	
Pine, Scotch	<i>Pinus sylvestris</i>
Pine, Virginia	<i>Pinus virginiana</i>
Pine, white	<i>Pinus strobus</i>
Plum, purple leaf	<i>Prunus cerasifera</i>
Poplar, black	<i>Populus nigra</i>
Redcedar, Eastern	<i>Juniperus virginiana</i>
Redcedar, Western	<i>Thuja plicata</i>
Red ironbark	<i>Eucalyptus sideroxylon</i> 'Rosea'
Redwood, dawn	<i>Metasequoia</i> <i>glyptostroboides</i>
Sequoia, giant	<i>Sequoiadendron giganteum</i>
Serviceberry	<i>Amelanchier laevis</i>
Sourwood	<i>Oxydendrum arboreum</i>
Spruce, Colorado blue	<i>Picea pungens</i>
Spruce, dwarf Alberta	<i>Picea glauca</i> 'Albertiana'
Spruce, Norway	<i>Picea abies</i>
Spruce, white	<i>Picea glauca</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Sycamore	<i>Platanus occidentalis</i>
Trachycarpus	<i>Trachycarpus</i> spp.
Tulip tree	<i>Liriodendron tulipifera</i>
Walnut, black	<i>Juglans nigra</i>
Willow, weeping	<i>Salix babylonica</i>
Yellowwood	<i>Cladrastis lutea</i>

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BASF Corporation  
26 Davis Drive  
Research Triangle Park, NC 27709



We create chemistry

# Safety Data Sheet

## PENDULUM AQUACAP HERBICIDE

Revision date : 2012/11/29  
Version: 4.0

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(30255964/SDS\_CPA\_US/EN)

### 1. Product and Company Identification

Company  
BASF CORPORATION  
100 Park Avenue  
Florham Park, NJ 07932, USA

24 Hour Emergency Response Information  
CHEMTREC: 1-800-424-9300  
BASF HOTLINE: 1-800-832-HELP (4357)

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Substance number:	000000171005
Molecular formula:	C13 H19 N3 O4
Chemical family:	aniline derivative
Synonyms:	pendimethalin

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### 2. Hazards Identification

#### Emergency overview

**CAUTION:**  
Causes eye irritation.  
HARMFUL IF ABSORBED THROUGH SKIN.  
HARMFUL IF SWALLOWED.  
KEEP OUT OF REACH OF CHILDREN.  
KEEP OUT OF REACH OF DOMESTIC ANIMALS.  
Avoid contact with the skin, eyes and clothing.

See Product Label for additional precautionary statements.

State of matter: liquid  
Colour: yellow to brown  
Odour: faint odour, nutty

#### Potential health effects

##### **Primary routes of exposure:**

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

##### **Acute toxicity:**

Relatively nontoxic after single ingestion. Relatively nontoxic after short-term inhalation. Relatively nontoxic after short-term skin contact.

##### **Irritation / corrosion:**

May cause slight but temporary irritation to the eyes. May cause slight irritation to the skin.

##### **Sensitization:**

Skin sensitizing effects were not observed in animal studies.

# Safety Data Sheet

## PENDULUM AQUACAP HERBICIDE

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### **Medical conditions aggravated by overexposure:**

Individuals with pre-existing diseases of the respiratory system, skin or eyes may have increased susceptibility to excessive exposures.

### **Signs and symptoms of overexposure:**

orange-red coloured urine caused by dye (not associated with methemoglobinemia)

### **Potential environmental effects**

#### **Aquatic toxicity:**

Very toxic (acute effect) to aquatic organisms.

#### **Terrestrial toxicity:**

Acutely harmful to terrestrial organisms.

## 3. Composition / Information on Ingredients

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
40487-42-1	38.7 %	pendimethalin
	61.3 %	Proprietary ingredients

## 4. First-Aid Measures

### **General advice:**

First aid providers should wear personal protective equipment to prevent exposure. Remove contaminated clothing. Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. 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 doctor or going for treatment.

### **If inhaled:**

Remove the affected individual into fresh air and keep the person calm.

### **If on skin:**

Rinse skin immediately with plenty of water for 15 - 20 minutes.

### **If in eyes:**

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

### **If swallowed:**

Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Do not induce vomiting. Have person sip a glass of water if able to swallow.

### **Note to physician**

Antidote: No known specific antidote.  
Treatment: Treat symptomatically.

## 5. Fire-Fighting Measures

Flash point:	> 230 °F	
Autoignition:	354 °C	(DIN EN 14522)
Lower explosion limit:		not determined
Upper explosion limit:		not determined
Flammability:	not highly flammable	

# Safety Data Sheet

## PENDULUM AQUACAP HERBICIDE

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### **Suitable extinguishing media:**

foam, dry powder, carbon dioxide, water spray

### **Hazards during fire-fighting:**

carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide, Hydrocarbons,  
If product is heated above decomposition temperature, toxic vapours will be released. The substances/groups of substances mentioned can be released in case of fire.

### **Protective equipment for fire-fighting:**

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

### **Further information:**

Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

---

## 6. Accidental release measures

### **Personal precautions:**

Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

### **Environmental precautions:**

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

### **Cleanup:**

Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

---

## 7. Handling and Storage

### Handling

#### **General advice:**

RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect contents from the effects of light. Protect against heat. Protect from air. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

#### **Protection against fire and explosion:**

The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, open flame. Sources of ignition should be kept well clear. Avoid extreme heat. Keep away from oxidizable substances. Electrical equipment should conform to national electric code. Ground all transfer equipment properly to prevent electrostatic discharge. Electrostatic discharge may cause ignition.

### Storage

#### **General advice:**

# Safety Data Sheet

## PENDULUM AQUACAP HERBICIDE

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Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed.

### **Storage incompatibility:**

General advice: Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

### **Temperature tolerance**

Protect from temperatures below: 0 °C

Changes in the properties of the product may occur if substance/product is stored below indicated temperature for extended periods of time.

Protect from temperatures above: 40 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

---

## 8. Exposure Controls and Personal Protection

**Users of a pesticidal product should refer to the product label for personal protective equipment requirements.**

### **Advice on system design:**

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

### **Personal protective equipment**

#### **RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:**

##### **Respiratory protection:**

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) TC23C Chemical/Mechanical type filter system to remove a combination of particles, gas and vapours. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

##### **Hand protection:**

Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

##### **Eye protection:**

Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

##### **Body protection:**

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

##### **General safety and hygiene measures:**

Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

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### 9. Physical and Chemical Properties

Form:	microencapsulated, suspension	
Odour:	faint odour, nutty	
Colour:	yellow to brown	
pH value:	approx. 8 - 10	( 1 %(m), 21 °C)
Melting point:	approx. 0 °C	Information applies to the solvent.
Density:	approx. 9.79 lb/USg	( 68 °F)
Vapour density:		not determined
Partitioning coefficient n-octanol/water (log Pow):		not applicable
Viscosity, dynamic:	128 mPa.s	( 20 °C) (OECD 114)
Solubility in water:		dispersible
Molar mass:	281.31 g/mol	

### 10. Stability and Reactivity

#### Conditions to avoid:

Avoid all sources of ignition: heat, sparks, open flame. Avoid prolonged storage. Avoid electro-static discharge. Avoid contamination. Avoid prolonged exposure to extreme heat. Avoid extreme temperatures.

#### Substances to avoid:

strong acids, strong bases, strong oxidizing agents

#### Hazardous reactions:

The product is chemically stable.

Hazardous polymerization will not occur. No hazardous reactions if stored and handled as prescribed/indicated.

#### Decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated., Prolonged thermal loading can result in products of degradation being given off.

#### Thermal decomposition:

Possible thermal decomposition products:

carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide, Hydrocarbons

Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released.

#### Oxidizing properties:

not fire-propagating

### 11. Toxicological information

#### Acute toxicity

##### Oral:

Type of value: LD50

Species: rat (male/female)

Value: > 5,000 mg/kg (OECD Guideline 401)

##### Inhalation:

Type of value: LC50

Species: rat (male/female)

Value: > 5.23 mg/l (OECD Guideline 403)

Exposure time: 4 h

An aerosol was tested.

No mortality was observed.

##### Dermal:

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Type of value: LD50  
Species: rat (male/female)  
Value: > 5,000 mg/kg (OECD Guideline 402)

### Irritation / corrosion

#### Skin:

Species: rabbit  
Result: mildly irritating

#### Eye:

Species: rabbit  
Result: mildly irritating

#### Sensitization:

modified Buehler test  
Species: guinea pig  
Result: Non-sensitizing.  
Method: OECD Guideline 406

### Repeated dose toxicity

*Information on: pendimethalin*

*Assessment of repeated dose toxicity:*

*No substance-specific organotoxicity was observed after repeated administration to animals. Adaptive effects were observed after repeated exposure in animal studies.*

*Information on: Diphenylmethane-4,4'-diisocyanate (MDI)*

*Assessment of repeated dose toxicity:*

*The substance may cause damage to the olfactory epithelium after repeated inhalation. These effects are not relevant to humans at occupational levels of exposure.*

*Information on: Methylenediphenyl diisocyanate*

*Assessment of repeated dose toxicity:*

*The substance may cause damage to the olfactory epithelium after repeated inhalation. These effects are not relevant to humans at occupational levels of exposure.*

### Carcinogenicity

*Information on: pendimethalin*

*In long-term studies in rats the substance induced thyroid tumors. The effect is caused by an animal specific mechanism that has no human counter part. In long-term studies in mice in which the substance was given by feed, a carcinogenic effect was not observed.*

*Information on: Diphenylmethane-4,4'-diisocyanate (MDI)*

*A carcinogenic potential cannot be excluded after prolonged exposure to severely irritating concentrations. These effects are not relevant to humans at occupational levels of exposure.*

*Information on: Methylenediphenyl diisocyanate*

*A carcinogenic potential cannot be excluded after prolonged exposure to severely irritating concentrations. These effects are not relevant to humans at occupational levels of exposure.*

### Development:

*Information on: Diphenylmethane-4,4'-diisocyanate (MDI)*

*The substance did not cause malformations in animal studies; however, toxicity to development was observed at high doses that were toxic to the parental animals.*

*Information on: Methylenediphenyl diisocyanate*

*The substance did not cause malformations in animal studies; however, toxicity to development was observed at high doses that were toxic to the parental animals.*

### Experiences in humans:

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Pendimethalin is a strongly orange-red compound - virtually an aniline dye. Cases have been described of orange-yellow colouration of urine following heavy exposure of workers to the dust of pendimethalin. Despite its structure as both a nitro-compound and aromatic amine, exposure to pendimethalin is NOT associated with methemoglobinemia.

### Other Information:

Misuse can be harmful to health.

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## 12. Ecological Information

### Fish

Acute:

OECD Guideline 203 static

Oncorhynchus mykiss/LC50 (96 h): 20.36 mg/l

### Aquatic invertebrates

Acute:

OECD Guideline 202, part 1 static

Daphnia magna/EC50 (48 h): > 100 mg/l

### Aquatic plants

Toxicity to aquatic plants:

OECD Guideline 201 green algae/EC50 (72 h): 1.49 mg/l

### Non-Mammals

*Information on: pendimethalin*

*Other terrestrial non-mammals:*

*mallard duck/LD50: 1,421 mg/kg*

*Acutely harmful to terrestrial organisms.*

*Honey bee/LD50: 49.8 ug/bee*

*Acutely harmful to terrestrial organisms.*

### Environmental mobility:

*Information on: pendimethalin*

*Assessment transport between environmental compartments:*

*Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.*

### Other adverse effects:

The ecological data given are those of the active ingredient. Do not release untreated into natural waters.

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## 13. Disposal considerations

### Waste disposal of substance:

Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

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### Container disposal:

Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

### RCRA: D028

The waste codes are manufacturer's recommendations based on the designated use of the product. Other use and special waste disposal treatment on customer's location may require different waste-code assignments.

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## 14. Transport Information

### Land transport

USDOT

Not classified as a dangerous good under transport regulations

### Sea transport

IMDG

Hazard class: 9  
Packing group: III  
ID number: UN 3082  
Hazard label: 9, EHSM  
Marine pollutant: YES  
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(contains PENDIMETHALIN)

### Air transport

IATA/ICAO

Hazard class: 9  
Packing group: III  
ID number: UN 3082  
Hazard label: 9, EHSM  
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(contains PENDIMETHALIN)

### Further information

DOT: This product is regulated if the amount in a single receptacle exceeds the Reportable Quantity (RQ). Please refer to Section 15 of this MSDS for the RQ for this product.

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## 15. Regulatory Information

### Federal Regulations

#### Registration status:

Crop Protection TSCA, US released / listed

Chemical TSCA, US blocked / not listed

OSHA hazard category: Skin and/or eye irritant; Chronic target organ effects reported

EPCRA 311/312 (Hazard categories): Acute; Chronic

EPCRA 313:

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**CAS Number**

40487-42-1

**Chemical name**

pendimethalin

### 16. Other Information

**Refer to product label for EPA registration number.**

Recommended use: herbicide

**NFPA Hazard codes:**

Health : 1      Fire: 1      Reactivity: 1      Special:

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

**MSDS Prepared by:**

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MSDS Prepared on: 2012/11/29

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