Pendulum Aqua Cap

Herbicide

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

Active Ingredient:

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

EPA Reg. No. 241-416

EPA Est. No.

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:



FIRST AID		
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 eyes. Call a poison control center or doctor for treatment advice. 	
	HOTLINE	

HOILINE

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.

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 K₁ (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	
Grasses		
Barnyardgrass	Echinochloa crus-galli	
Bluegrass, annual	Poa annua	
Crabgrass	Digitaria spp.	
Crowfootgrass	Dactyloctenium aegyptium	
Foxtail, giant	Setaria faberi	
Foxtail, green	Setaria viridis	
Foxtail, yellow	Setaria glauca	
Goosegrass	Eleusine indica	
Itchgrass	Rottboellia exaltata	
Johnsongrass (from seed)	Sorghum halepense	
Junglerice	Echinochloa colona	
Lovegrass (from seed)	Eragrostis spp.	
Panicum, browntop	Panicum fasciculatum	
Panicum, fall	Panicum dichotomiflorum	
Panicum, Texas	Panicum texanum	
Sandbur, field	Cenchrus incertus	
Signalgrass	Brachiaria platyphylla	
Sprangletop, Mexican	Leptochloa uninervia	
Sprangletop, red	Leptochloa filiformis	
Witchgrass	Panicum capillare	
Woolly cupgrass	Eriochloa villosa	
Broadleaf Weeds		
Burweed, lawn	Soliva pterosperma	
Carpetweed	Mollugo verticillata	
Chickweed, common	Stellaria media	
Chickweed, mouseear	Cerastium vulgatum	
Clover, hop	Trifolium procumbens	
Cudweed	Gnaphalium spp.	
Evening primrose	Oenothera biennis	
Fiddleneck	Amsinckia intermedia	
Filaree	Erodium spp.	
Henbit	Lamium amplexicaule	
Knotweed, prostrate	Polygonum aviculare	
Kochia	Kochia scoparia	
Lambsquarters	Chenopodium album	
Pigweed	Amaranthus spp.	
Puncturevine	Tribulus terrestris	
Purslane	Portulaca oleracea	

Table 1. Weeds Controlled (continued)

Scientific Name			
Broadleaf Weeds (continued)			
Sisymbrium irio			
Capsella bursa-pastoris			
Polygonum pensylvanicum			
Veronica arvensis			
Euphorbia spp.			
Chamaesyce humistrata			
Oxalis stricta			
Abutilon theophrasti			

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

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

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

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 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**.

Mixing Instructions

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:

 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.

- 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.
- Add **Pendulum AquaCap** to the partially filled tank while agitating.
- Water-soluble Concentrate (WSC) formulations -Add the WSC formulation to the partially filled tank while agitating.
- 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.

Spraying Instructions

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.

Turfgrass

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 Control¹

Cool Season Turfgrass	Weed	Product per 1,000 sq ft (fl ozs)	Product per acre (pts)	Comment
Bluegrass, Kentucky	barnyardgrass	All Turf	f Uses:	Apply a repeat application of 2.2 to
Fescue, fine Fescue, tall Ryegrass, perennial	crabgrass evening primrose fall panicum foxtail hop clover knotweed oxalis Poa annua prostrate spurge purslane 1.1 to 1.6 3.1 to 4.2 Initial application before weed germination in spring		on before weed	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.
	goosegrass	Residential a		Apply a repeat application of 3.1 pts/A (1.1 fl ozs/1,000 sq ft) if the
		1.1 to 1.6	3.1 to 4.2	lower rate was used initially or for
		Golf Course,	Commercial onresidential	extended goosegrass control after 5 to 8 weeks.
		1.1 to 2.3	3.1 to 6.3	
		Initial application before weed germination in spring		
	chickweed corn speedwell cudweed henbit lawn burweed Poa annua	All Turf Uses:		Apply in late summer or early fall
		1.1 to 1.6	3.1 to 4.2	before weed germination. Apply a repeat application of 3.1 to 4.2 pts// (1.1 to 1.6 fl ozs/1,000 sq ft) after 5 to 8 weeks for extended Poa annua control.
Bentgrass or established <i>Poa annua</i> ³	barnyardgrass crabgrass	All Turf Uses (Non-greens and Tees):		Apply a repeat application of 2.2 to 3.1 pts/A (0.86 to 1.1 fl ozs/
(1/2-inch high or taller)	evening primrose fall panicum	1.1	3.1	1,000 sq ft) after 5 to 8 weeks for extended control or where heavy
	foxtail hop clover knotweed oxalis Poa annua prostrate spurge purslane		on before weed on in spring	weed infestations are expected.
	goosegrass	All Turf Uses (Non-greens and Tees):		Apply a repeat application of 3.1 pts/A (1.1 fl ozs/1,000 sq ft) for
		1.1	3.1	extended goosegrass control after 5 to 8 weeks.
		Initial application before weed germination in spring		
	chickweed corn speedwell	All Turf Uses (Non-greens and Tees):		Apply in late summer or early fall before weed germination.
	cudweed henbit lawn burweed <i>Poa annua</i>	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 Control¹ (continued)

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Warm Season Turfgrass	Weed	Product per 1,000 sq ft (fl ozs)	Product per acre (pts)	Comment
Bahiagrass Bermudagrass	barnyardgrass crabgrass	Residential a Turf Use		Apply a repeat application of 2.2 to 3.1 pts/A (0.86 to 1.1 fl ozs/
Buffalograss Centipedegrass	evening primrose fall panicum	1.1 to 1.6	3.1 to 4.2	1,000 sq ft) after 5 to 8 weeks if necessary.
Fescue, tall Paspalum, seashore St. Augustinegrass	foxtail hop clover knotweed	Golf Course, and Other No Turf Use	onresidential	, noossary.
Zoysiagrass	oxalis Poa annua	1.1 to 2.3	3.1 to 6.3	
	prostrate spurge purslane	Initial applicatio germinatio		
	goosegrass	All Tur (Non-green		An additional application of 3.1 pts/A (1.1 fl ozs/1,000 sq ft) may be made
52		1.1	3.1	for extended goosegrass control 8 weeks after the second
		Apply bef germinatio		application.
			d application at ozs/1,000 sq ft) eeks later.	
	chickweed	All Tur	f Uses:	Apply in late summer or early fall
	corn speedwell cudweed henbit lawn burweed <i>Poa annua</i>	1.1 to 1.6	3.1 to 4.2	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 **DO NOT** exceed a maximum of 4.2 pints (2.1 quarts)/A or 1.6 fl ozs/1,000 sq ft product **per application** for use on residential and sod farm turfgrass. **DO NOT** exceed a maximum rate of 6.3 pints (3.1 quarts)/A or 2.3 fl ozs/1,000 sq ft product **per application** for use on golf course turfgrass, commercial, or other nonresidential turfgrass.

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 uninten-

Nonturgrass 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.

² Residential is defined as turf in any residential situation as well as home lawns, schools, parks, and playgrounds.

³ **DO NOT** use on bentgrass or *Poa annua* greens or tees.

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 noted¹ (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 areawide 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 preemergence 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 Restrictions¹

Site	Application Instructions and Restrictions
Landscape plantings ²	DO NOT apply to newly transplanted ornamentals until plants have been watered and soil has been thoroughly packed and settled around roots.
	Apply as a directed or over-the-top spray.
	Use the lowest labeled rate when making applications to annuals. Repeat applications can be made for extended landscape weed control.
Ornamental bulbs ³	Pendulum AquaCap may be applied to bulb species listed on the label.
	2. Apply before bulb emergence.

(continued)

Landscape and Ornamental Plantings Instructions and Restrictions¹ (continued)

Site	Application Instructions and Restrictions	
Wildflowers ³	Pendulum AquaCap may be applied in plantings of wildflowers listed on the label. Refer to specific instructions for rate and plant tolerance.	
	 For wildflowers being established from seed, apply at 4 weeks after wildflowers have germinated, but be- fore weed seed germination. 	

- ¹ Plant only those desirable plant species listed on this label into soil treated the previous season with **Pendulum AquaCap** or injury may occur.
- ² 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.
- ³ **DO NOT** treat plants grown for food or feed. **DO NOT** 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 postemergence 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 Restrictions¹

Site	Application Instructions and Restrictions
Newly transplanted field-grown nursery stock ^{2,3}	DO NOT 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.
	2. DO NOT 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 Pendulum AquaCap could come into contact with the roots.
	3. DO NOT apply during bud swell, bud break, or at time of first flush of new growth.
	Direct sprays away from grafted or budded tissue on transplants at all times.
Ornamental bulbs ³	Pendulum AquaCap may be applied to bulb species listed on the label.
	2. Apply before bulb emergence.

(continued)

Production Ornamentals Instructions and Restrictions¹ (continued)

Site	Application Instructions and Restrictions	
Newly transplanted container- grown nursery stock ^{2,3}	 DO NOT 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 Pendulum AquaCap could come into contact with the roots. For container-grown ornamentals, delay first application of the product to bareroot liners for two (2) weeks after transplanting. DO NOT apply during bud swell, bud break, or at time of first flush of new growth. Direct sprays away from grafted or budded tissue on transplants at all 	
Established container or field-grown nursery stock ^{2,3}	 DO NOT apply during bud swell, bud break, or at time of first flush of new growth. Apply as a directed or over-the-top spray. If newly budded or grafted rootstock, apply with a shielded sprayer. Take care to ensure there are no cracks in the soil where Pendulum AquaCap could come into contact with the roots. 	
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	nadehouses, houses, or other enclosed structures. r other enclosed	
label into soil Pendulum A	se desirable plant species listed on this treated the previous season with quaCap or injury may occur.	
plants and ob before full-sca	g a large number of plants, spray a few serve for 1 to 2 months for plant damage ale application.	
	t plants grown for food or feed. DO NOT lants 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	
Bedding Plants		
Ageratum	Ageratum houstonianum	
Alyssum ¹	Alyssum saxatile	
Anemone, poppy-flowered	Anemone coronaria	
Artemesia	Artemesia spp.	
Balloonflower	Platycodon grandiflorum	
Begonia ¹	Begonia spp.	
Cabbage, ornamental	Brassica olereacea	
Caladium	Caladium spp.	
Cast-iron plant	Aspidistra elatior	
China aster ¹	Callistephus chinensis	
Crocosmia, montebretia	Crocosmia x crocosmiiflora	
Dahlia ¹	Dahlia spp.	
Dianthus	Dianthus barbatus	

Table 4. Tolerant Ornamental Species

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

¹ 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	Ajuga reptans
Baby sun rose	Aptenia cordifolia
Beach strawberry	Fragaria chiloensis
Capeweed	Arctotheca calendula
Cinquefoil, spring	Potentilla verna
Coyotebrush, dwarf	Baccharis pitularis
Daisy, trailing African	Osteospermum fruticosum
Dymondia	Dymondia margaretae
Gazania	Gazania splendens
Iceplant, large leaf	Carpobrotus edulis
Ivy, English	Hedera helix
Ivy, geranium	Pelargonium peltatum
Jasmine, Asiatic	Trachelospermum asiaticum
Jasmine, primrose	Jasminum mesnyi
Jessamine, Carolina	Gelsemium sempervirens

Table 4. Tolerant Ornamental Species

Common Name	Scientific Name
Ground Covers (continued)	
Manzanita, bearberry	Arctostaphylos uva-ursi
Miscanthus	Miscanthus spp.
Mondograss	Ophiopogon japonica
Morningglory	Convolvulus spp.
Myoporum	Myoporum parviflolium
Pachysandra	Pachysandra terminalis
Potentilla	Potentilla fruticosa
Red apple	Aptenia cordifolia
Rosemary	Rosemarinus officinalis
Rose-of-Sharon	Hypericum calycinum
St. Johnswort, creeping	Hypericum calycinum
Sand strawberry	Fragaria chiloensis
Sedum	Sedum spurium
Stonecrop	Sedum spurium
Verbena, Peruvian	Verbena peruviana
Vervain	Verbena peruviana
Vetch, crown	Vicia sativa
Vinca	Vinca minor
Wintercreeper	Euonymous fortunei
Ornamental Grasses	
Beach grass	Ammophila breviligulata
Fescue, blue	Festuca ovina
Fescue, sheep	Festuca ovina
Fountain grass	Pennisetum setaceum
Pampas grass	Cortaderia selloana
Reed canary grass	Phalaris arundinacea
Reed, giant	<i>Arundo</i> spp.
Ribbon grass	Phalaris arundinacea
Tufted hair grass	Deschampsia caespitosa
Perennials	
Acacia	Acacia redolens

Asparagus Asparagus spp. Aster, New York Aster novi-belgii Aster, Stokes Stokesia laevis

Astilibe (False spirea) Astilibe spp. Avens Geum triflorum

Baby's breath Gypsophila elegans

(continued)

Table 4. Tolerant Ornamental Species

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

Table 4. Tolerant Ornamental Species

(continued)

Common Name	Scientific Name
Perennials (continued)	
Lantana, weeping	Lantana montevidensis
Leopard's bane	Doronicum cordatum
Lily	Lillium spp.
Liriope, big blue	Liriope muscari
Liriope, creeping	Liriope spicata
Liriope, variegated	Liriope muscari
Montbretia	Crocosmia crocosmiiflora
Moonbeam	Coreopsis verticillata
Mugwort, Western	Artemesia ludoviciana
Nightshade	Solanum spp.
Orchid, peacock	Acidanthera bicolor
Oxeye daisy¹	Chrysanthemum leucanthemum
Palm, areca	Chysalidocarpus lutescens
Palm, pygmy date	Phoenix roebelence
Palm, Washington	Washington robusta
Peony, Chinese	Paeonia lactiflora
Purple coneflower ¹	Echinacea purpurea
Purple gay-feather	Liatris pycnostachya
Purple loosestrife	Lythrum virgatum
Rodgersia	Rodgersia henricie
Rosemary	Rosmarinus officinalis
Sedge	Carex spp.
Shasta daisy ¹	Chrysanthemum x superbum
Statice	Limonium latifolia
Statice, German	Goniolimon tartaricum
Sweet flag	Acorus calamus
Tickseed ¹	Coreopsis lanceolata
Texas bluebonnet	Lupinus texenis
Tulip	Tulipa spp.
Wonder flower	Ornithogalum thyrsoides
Yarrow ¹	Achillea millefolium
Zephyr lily	Zephyranthes spp.

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

(continued)

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

Table 4. Tolerant Ornamental Species *(continued)*

Common Name	Scientific Name
Shrubs	\$44444887868WKW
Abelia, glossy	Abelia grandiflora
Alder, witch	Fothergilla gardenii
Aucuba, gold	Aucuba japonica
Azalea	Rhododendron spp.
Bamboo, heavenly	Nandina domestica
Barberry	Berberis gladwynensis
Barberry, Japanese	Berberis thunbergii
Blue indigo bush	Dalea gregii
Bottlebrush, lemon	Callistemon citrinus
Boxwood, common	Buxus sempervirens
Boxwood, Japanese	Buxus microphylla
Brittlebush	Encelia farinosa
Buttonbush	Cephalanthus occidentalis
Camellia	Camellia japonica
Cape jasmine	Gardenia jasminoides
Cassia, feathery	Cassia artemisioides
Cordyline	Cordyline spp.
Correa	Correa spp.
Cotoneaster	Cotoneaster apiculatus
Cotoneaster, bearberry	Cotoneaster dammeri
Cotoneaster, rock	Cotoneaster horizontalis
Cypress, Italian	Cupressus sempervirens
Cypress, Leyland	Cupressocyparis leylandii
Deutzia, slender	Deutzia gracilis
Dogwood, red twig	Cornus sericea
Elaeagnus	Elaeagnus ebbingei
Escallonia	Escallonia fradesii
Euonymus	Euonymus fortunei
Euonymus, golden	Euonymus japonica
Euonymus, winged	Euonymus alata
Firethorn	Pyracantha coccinea
Forsythia, border	Forsythia intermedia
Fragrant olive	Osmanthus fragrans
Fuchsia, California	Zauschineria californica
Gardenia	Gardenia jasminoides
Hawthorne, Indian	Raphiolepis indica
Hibiscus	Hibiscus syriacus
Holly, Chinese	llex cornuta

Table 4. Tolerant Ornamental Species

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

(continued)

Table 4. Tolerant Ornamental Species *(continued)*

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

terminals may occur.

Trees	
Alder, European black	Alnus glutinosa
Apple	Malus spp.
Arborvitae, American	Thuja occidentalis
Arbutus	Arbutus spp.
Ash, red	Fraxinus pennsylvanica

Table 4. Tolerant Ornamental Species

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

(continued)

Table 4. Tolerant Ornamental Species *(continued)*

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

Table 4. Tolerant Ornamental Species *(continued)*

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

Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

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1. Identification

Product identifier used on the label

Pendulum Aquacap Herbicide

Recommended use of the chemical and restriction on use

Recommended use*: crop protection product, herbicide

Details of the supplier of the safety data sheet

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

Telephone: +1 973 245-6000

Emergency telephone number

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300

BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Substance number:

171005

Registration number:

EPA Registration number: 241-416

Molecular formula:

C13 H19 N3 O4

Chemical family:

aniline derivative

Synonyms:

pendimethalin

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Acute Tox.

4 (Inhalation - mist)

Acute toxicity

Skin Sens.

1B

Skin sensitization

STOT SE

3 (irritating to

Specific target organ toxicity — single exposure

^{*} The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

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respiratory system)

Aquatic Acute Aquatic Chronic 2

Hazardous to the aquatic environment - acute
Hazardous to the aquatic environment - chronic

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Label elements

Pictogram:

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Signal Word:

Warning

Hazard Statement:

H332

H317

Harmful if inhaled. May cause an allergic skin reaction.

H335

May cause respiratory irritation.

H401

Toxic to aquatic life.

H411

Toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P280

Wear protective gloves.

P271

Use only outdoors or in a well-ventilated area.

P273

Avoid release to the environment.

P260 P272 Do not breathe mist or vapour. Contaminated work clothing should not be allowed out of the workplace.

Precautionary Statements (Response):

P312

Call a POISON CENTER or physician if you feel unwell.

P304 + P340

IF INHALED: Remove person to fresh air and keep comfortable for

breathing.

P302 + P352

IF ON SKIN: Wash with plenty of soap and water.

P333 + P313

If skin irritation or rash occurs: Get medical attention.

P362 + P364

Take off contaminated clothing and wash it before reuse.

P391

Collect spillage.

Precautionary Statements (Storage):

P403 + P233

Store in a well-ventilated place. Keep container tightly closed.

P405

Store locked up.

Precautionary Statements (Disposal):

P501

Dispose of contents/container in accordance with local regulations.

Hazards not otherwise classified

Labeling of special preparations (GHS):

May produce an allergic reaction. Contains: 2-Methyl-4-Isothiazolin-3-one CONTAINS ISOCYANATES. INHALATION OF ISOCYANATE MISTS OR VAPORS MAY CAUSE RESPIRATORY IRRITATION, BREATHLESSNESS, CHEST DISCOMFORT AND REDUCED PULMONARY FUNCTION. OVEREXPOSURE WELL ABOVE THE PEL MAY RESULT IN BRONCHITIS, BRONCHIAL SPASMS AND PULMONARY EDEMA. LONG-TERM EXPOSURE TO ISOCYANATES HAS BEEN REPORTED TO CAUSE LUNG DAMAGE, INCLUDING REDUCED LUNG FUNCTION WHICH MAY BE PERMANENT. ACUTE OR CHRONIC OVEREXPOSURE TO ISOCYANATES MAY CAUSE SENSITIZATION IN SOME INDIVIDUALS, RESULTING IN ALLERGIC RESPIRATORY REACTIONS INCLUDING WHEEZING, SHORTNESS OF BREATH

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AND DIFFICULTY BREATHING. ANIMAL TESTS INDICATE THAT SKIN CONTACT MAY PLAY A ROLE IN CAUSING RESPIRATORY SENSITIZATION.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

pendimethalin

CAS Number: 40487-42-1 Content (W/W): 38.7 %

Synonym: N-(1-Ethylpropyl)-2,6-dinitro-3,4-xylidine; Pendimethalin

Isocyanic acid, polymethylenepolyphenylene ester, polymer with 1,6-hexanediamine

CAS Number: 77348-43-7 Content (W/W): 1.0 - 3.0% Synonym: No data available.

4. First-Aid Measures

Description of first aid measures

General advice:

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing. Show container, label and/or safety data sheet to physician.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention.

If on skin:

Immediately wash thoroughly with soap and water, seek medical attention.

If in eves:

Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

If swallowed:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention. Do not induce vomiting unless told to by a poison control center or doctor. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions.

Most important symptoms and effects, both acute and delayed

Symptoms: orange-red coloured urine caused by dye (not associated with methemoglobinemia) Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment:

Treat according to symptoms (decontamination, vital functions), no known specific antidote.

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5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media: foam, dry powder, carbon dioxide, water spray

Special hazards arising from the substance or mixture

Hazards during fire-fighting:

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

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.

Advice for fire-fighters

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, protective equipment and emergency procedures

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.

Methods and material for containment and cleaning up

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

Precautions for safe handling

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

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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.

Conditions for safe storage, including any incompatibilities

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

Further information on storage conditions: 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. Protect from temperatures below: -5 °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/Personal Protection

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

No substance specific occupational exposure limits known.

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.

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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.

9. Physical and Chemical Properties

Form:

Odour:

faint odour, nutty

Odour threshold:

Not determined due to potential health hazard by inhalation.

Colour: pH value: yellow to brown approx. 7 - 9

(21°C)

(measured with the undiluted

substance)

Melting point:

approx. 0 °C

Information applies to the solvent.

Flash point:

> 230 °F

Flammability:

not applicable

Lower explosion limit:

As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with

the intended use.

Upper explosion limit:

As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with

the intended use.

Autoignition:

354 °C

SADT:

> 75 °C

Density:

approx. 9.79 lb/USg

(68°F)

Vapour density:

not applicable

Partitioning coefficient noctanol/water (log Pow):

not applicable

Thermal decomposition:

235 °C, 900 kJ/kg (DSC (OECD 113))

(onset temperature)

Not a substance liable to self-decomposition according to UN

transport regulations, class 4.1.

Viscosity, dynamic:

128 mPa.s

(OECD 114)

(DIN EN 14522)

Solubility in water:

(20°C) dispersible

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Molar mass: Evaporation rate: 281.31 g/mol not applicable

Other Information:

If necessary, information on other physical and chemical

parameters is indicated in this section.

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Oxidizing properties:

not fire-propagating

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

The product is chemically stable.

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

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.

Incompatible materials

strong acids, strong bases, strong oxidizing agents

Hazardous decomposition products

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:

235 °C, 2.5 K/min (DSC (OECD 113))

(onset temperature)

Not a substance liable to self-decomposition according to UN transport regulations, class 4.1.

11. Toxicological information

Primary routes of exposure

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

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Relatively nontoxic after single ingestion. Relatively nontoxic after short-term inhalation. Relatively nontoxic after short-term skin contact.

Type of value: LD50

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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.

<u>Dermal</u>

Type of value: LD50 Species: rat (male/female)

Value: > 5,000 mg/kg (OECD Guideline 402)

Assessment other acute effects

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

The product has not been tested. The statement has been derived from the properties of the individual components.

Irritation / corrosion

Assessment of irritating effects: Not irritating to the eyes. Skin contact causes slight irritation. May cause slight but temporary irritation to the eyes. May cause slight irritation to the skin.

Skin

Species: rabbit

Result: Slightly irritating.

Eye

Species: rabbit

Result: Slightly irritating.

<u>Sensitization</u>

Assessment of sensitization: Sensitization after skin contact possible.

Mouse Local Lymph Node Assay (LLNA)

Species: guinea pig Result: sensitizing

Method: OECD Guideline 406

Aspiration Hazard

The product has not been tested. The statement has been derived from the properties of the individual components. No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: pendimethalin

Assessment of repeated dose toxicity: No substance-specific organtoxicity was observed after repeated administration to animals. Adaptive effects were observed after repeated exposure in animal studies.

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Genetic toxicity

Assessment of mutagenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

Carcinogenicity

Assessment of carcinogenicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: pendimethalin

Assessment of carcinogenicity: 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.

Reproductive toxicity

Assessment of reproduction toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity

Assessment of teratogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Experiences in humans

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.

Medical conditions aggravated by overexposure

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

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Toxic to aquatic life with long lasting effects.

Very toxic (acute effect) to aquatic organisms.

Toxicity to fish

LC50 (96 h) 20.36 mg/l, Oncorhynchus mykiss (OECD Guideline 203, static)

Aquatic invertebrates

EC50 (48 h) > 100 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)

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Aquatic plants

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EC50 (72 h) 1.49 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201)

EC10 (72 h) 0.14 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201)

EC50 (7 d) 19.25 mg/l (growth rate), Lemna gibba (OECD guideline 221)

No observed effect concentration (7 d) 1.0 mg/l (growth rate), Lemna gibba (OECD guideline 221)

Assessment of terrestrial toxicity

Acutely harmful to terrestrial organisms.

Other terrestrial non-mammals

Information on: pendimethalin LD50 1,421 mg/kg, Anas platyrhynchos Acutely harmful to terrestrial organisms. LD50 49.8 ug/bee, Apis mellifera Acutely harmful to terrestrial organisms.

Persistence and degradability

Assessment biodegradation and elimination (H2O)

Information on: pendimethalin

Not readily biodegradable (by OECD criteria).

Mobility in soil

Assessment transport between environmental compartments

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: pendimethalin

The substance will slowly evaporate into the atmosphere from the water surface. Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

Additional information

Other ecotoxicological advice:

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

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 wastecode assigments.

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: Marine pollutant: 9, EHSM YES

Proper shipping name:

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (contains PENDIMETHALIN)

Air transport

IATA/ICAO

Hazard class:

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 SDS for the RQ for this product.

15. Regulatory Information

Federal Regulations

Registration status:

Crop Protection

TSCA, US released / exempt

Chemical

TSCA, US blocked / not listed

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

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EPCRA 313:

CAS Number

Chemical name

40487-42-1

pendimethalin

State regulations

State RTK

CAS Number

Chemical name

NJ

Version: 13.0

40487-42-1

pendimethalin

Safe Drinking Water & Toxic Enforcement Act, CA Prop. 65:

BASF Risk Assessment, CA Prop. 65:

Based on an evaluation of the product's composition and the use(s), this product does not require a California Proposition 65 Warning.

NFPA Hazard codes:

Health: 1

Fire: 1

Reactivity: 1

Special:

Labeling requirements under FIFRA

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 workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

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.

16. Other Information

SDS Prepared by:

BASF NA Product Regulations SDS Prepared on: 2022/03/29

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.

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