

READ SAFETY DIRECTIONS BEFORE OPENING OR USING



syngenta®

ACTIVE CONSTITUENT: 480 g/L PRODIAMINE

GROUP **D** HERBICIDE

For pre-emergent control of weeds in established turf, garden beds and nursery pots as per the Directions for Use

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## **DIRECTIONS FOR USE**

### **Restraints**

- DO NOT blend BARRICADE onto dry fertiliser or any other granular material
- DO NOT apply with aircraft or through any type of irrigation equipment
- DO NOT apply to turf under stress
- DO NOT apply to golf course putting greens or bowling greens
- DO NOT apply to newly seeded, sodded or sprigged turf. Delay application until turf is at 100% cover and root system is developed beyond a 3 cm depth
- DO NOT apply to garden beds over the top of mulch
- DO NOT apply to recently re-potted or newly potted seeds, cuttings, divisions or plants. Allow a period of establishment within which a substantial root system can be developed
- DO NOT apply if heavy rain has been forecast within 48 hours
- DO NOT apply to waterlogged soil
- DO NOT irrigate to the point of runoff within 3 days of application
- DO NOT apply to turf which is not well established

### **Spray Drift Restraints**

- DO NOT apply with spray droplets smaller than a **COARSE** spray droplet size category according to “APVMA Compliance Instructions for Mandatory COARSE or Larger Droplet Size Categories” located under this title in the GENERAL INSTRUCTIONS section of this label
- DO NOT apply when wind speed is less than 3 or more than 20 kilometres per hour as measured at the application site
- DO NOT apply during surface temperature inversion conditions at the application site
- DO NOT apply with a nozzle height greater than 50 cm above the ground
- Users of this product **MUST** make an accurate written record of the details of each spray application within 24 hours following application, and must **KEEP** this record for at least 2 years. The spray application details that must be recorded are:
  1. Date with start and finish times of application
  2. Location address and paddock(s) sprayed
  3. Full name of this product
  4. Amount of product used per hectare and number of hectares applied to
  5. Crop or situation and weed or pest
  6. Wind speed and direction during application
  7. Air temperature and relative humidity during application
  8. Nozzle brand, type, spray angle, nozzle capacity and spray system pressure measured during application
  9. Name and address of person applying this product

Additional record details may be required by the state or territory where this product is used

### **Mandatory No-Spray Zones**

- DO NOT apply if there are aquatic and wetland areas including aquacultural ponds, surface streams and rivers within 120 metres downwind from the application area
- DO NOT apply if there are sensitive crops, gardens, landscaping vegetation, protected native vegetation or protected animal habitats within 20 metres downwind from the application area
- DO NOT apply if using Monument® Liquid Turf Herbicide and BARRICADE tank mix for control of winter grass if non-target vegetation is within 60 metres downwind from the application area

Situation	Weeds	Rate	Critical Comments
<p><b>Established turf</b>  <b>Bahia Grass</b> (<i>Paspalum notatum</i>),  <b>Buffalo Grass</b> (<i>Stenotaphrum secundatum</i>),  <b>Carpet Grass</b> (<i>Axonopus affinis</i>, <i>Axonopus compressus</i>),  <b>Common Couch</b> (<i>Cynodon dactylon</i>),  <b>Hybrid Couch</b> (<i>Cynodon dactylon</i> x <i>Cynodon transvaalensis</i>),  <b>Kikuyu</b> (<i>Pennisetum clandestinum</i>),  <b>Old Blue Couch</b> (<i>Digitaria didactyla</i>),  <b>Seashore Paspalum</b> (<i>Paspalum vaginatum</i>),  <b>Zoysia</b> (<i>Zoysia japonica</i>, <i>Zoysia matrella</i>)</p>	<p>Barnyard Grass (<i>Echinochloa crus-galli</i>),  Crab Grass (<i>Digitaria sanguinalis</i>),  Parramatta Grass (<i>Sporobolus africana</i>),  Rat's Tail Fescue (<i>Vulpia myuros</i>),  Summer Grass (<i>Digitaria sanguinalis</i>)</p>	1 to 3 L/ha	<p>Apply prior to weed emergence in early spring for residual control of up to 6 months.  A repeat application (3 to 4 months after initial application) may be needed if lower rates are used in high weed pressure situations or during extended germination periods due to environmental conditions. Refer to Application section for detailed information.</p>
	<p>Crowsfoot Grass (<i>Eleusine indica</i>)</p>		<p>Apply prior to weed emergence in early spring. For residual control of up to 4 months use 1 to 2 L/ha. For residual control of up to 6 months use 2 to 3 L/ha. A repeat application (3 to 4 months after initial application) may be needed if lower rates are used in high weed pressure situations or during extended germination periods due to environmental conditions. <b>Note:</b> Crowsfoot Grass germinates later than Crab Grass and/or Summer Grass. In situations with multiple weeds present use higher rates to ensure adequate residual control. Refer to Application section for detailed information.</p>
	<p>African Lovegrass (<i>Eragrostis curvula</i>),  Bahia Grass (<i>Paspalum notatum</i>),  Kentucky Blue Grass (<i>Poa patensis</i>)</p>	2 to 3 L/ha	<p>Apply prior to weed emergence in early spring. Residual control of up to 6 months. A repeat application (3 to 4 months after initial application) may be needed if lower rates are used in high weed pressure situations or during extended germination periods due to environmental conditions. Refer to Application section for detailed information.</p>
	<p>Paspalum (<i>Paspalum dilatatum</i>)</p>	2 to 4 L/ha	
	<p>Winter Grass (<i>Poa annua</i>)</p>	1 to 2 L/ha	<p><b>In the presence of emerged <i>Poa annua</i> plants</b>  Tank mix with 225 mL/ha of Monument Liquid and 0.25% v/v non-ionic surfactant and apply during late summer to early autumn for residual control of up to 6 months.  <b>In the absence of emerged <i>Poa annua</i></b>  Apply as solo product.  A repeat application (3 to 4 months after initial application) may be needed if lower rates are used in high weed pressure situations or during extended germination periods due to environmental conditions. Refer to Application section for detailed information.</p>
		4 L/ha	<p><b>In areas where post-emergent herbicides for <i>Poa annua</i> control may pose a high risk of tracking or off site damage (ie greens surrounds, slopes on high side of greens, etc)</b>  Apply prior to weed emergence in late summer to early autumn for residual control of up to 6 months. A repeat application (3 to 4 months after initial application) may be needed in high weed pressure situations or during extended germination periods due to environmental conditions. Refer to Application section for detailed information.</p>

Situation	Weeds	Rate	Critical Comments
Garden beds (under mulch) and potted plants in nurseries, public open spaces and residential or commercial gardens	Nursery weeds such as African Lovegrass ( <i>Eragrostis curvula</i> ), Barnyard Grass ( <i>Echinochloa crus-galli</i> ), Chickweed ( <i>Ceratium glomeratum</i> ), Crab Grass ( <i>Digitaria sanguinalis</i> ), Crowsfoot Grass ( <i>Eleusine indica</i> ), Creeping Oxalis ( <i>Oxalis corniculata</i> ), Cudweed ( <i>Gnaphalium</i> spp), Paspalum ( <i>Paspalum dilatatum</i> ), Prairie Grass ( <i>Bromus willdenowiae</i> ), Rat's Tail Fescue ( <i>Vulpia myuros</i> ), Ryegrass ( <i>Lolium perenne</i> ), Sow Thistle ( <i>Sonchus</i> spp), Summer Grass ( <i>Digitaria ciliaris</i> ), Willowherb ( <i>Epilobium ciliatum</i> ), Winter Grass ( <i>Poa annua</i> )	4 to 8 L/ha	Apply prior to weed emergence for residual control of up to 4 months in potted plants and 6 months in garden beds under mulch. Use higher rates in situations of high weed pressure or for difficult to control weeds. Apply the product to garden beds and wash in before applying mulch so that the herbicide reaches the soil. DO NOT apply using spraying equipment carried on the back of the user. DO NOT apply using low pressure hand wand. Refer to Application section for detailed information.

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION**

**WITHHOLDING PERIOD: DO NOT GRAZE TREATED TURF/LAWN OR FEED TURF/LAWN CLIPPINGS FROM ANY TREATED AREA TO POULTRY OR LIVESTOCK**

### GENERAL INSTRUCTIONS

BARRICADE is a selective pre-emergent herbicide that provides residual control of weeds in established turf, garden beds and potted plants. BARRICADE controls susceptible weeds by interfering with cell division in the root tips of newly germinated weeds.

#### **Turf**

BARRICADE is safe to use on established turf species listed in the Directions for Use.

In the case of Bahia Grass, BARRICADE will be safe to use on existing turf swards where established Bahia Grass plants can be tolerated or are desirable. BARRICADE will only control newly germinating seed of Bahia Grass after it has been sprayed. Weed control in turf is most effective when BARRICADE is activated by at least 6 mm of rainfall or irrigation before weed seeds germinate and within 7 days after application.

#### **Garden Beds under Mulch and Potted Plants**

Weed control in garden beds and potted plants is most effective when BARRICADE is activated by irrigation immediately post-application and before weed seeds germinate.

#### **Mixing**

Add the required quantity of BARRICADE directly to a spray tank containing 2/3 of the required spray volume. Add the rest of the water and ensure the mix is thoroughly agitated before application.

#### **Monument Liquid Tank Mix for Turf**

Add Monument Liquid and non-ionic surfactant after BARRICADE, then add the rest of the water and ensure the mix is thoroughly agitated before application. Refer to Monument Liquid label for specific mixing instructions.

### **Application**

#### **Turf**

DO NOT apply with aircraft or through any type of irrigation equipment.

Apply prior to weed emergence in early spring (summer weeds) or late summer to early autumn (*Poa annua*). Ensure product placement as close to soil surface as possible. Total application volume should not be lower than 500 L/ha. Use extremely coarse droplets eg Air Induction 08 nozzles, use strainers with no less than a 50-mesh rating. Wash in with at least 6 mm rain or irrigation within 7 days of application.

Spray nozzles should be uniformly spaced and of the same size, and should provide accurate and uniform application. To ensure accuracy, calibrate sprayer at the beginning of the season before use and recalibrate frequently. Apply at a volume of greater than 500 L water/ha. Observe sprayer nozzles frequently during the spraying operation to ensure that the spray pattern is uniform. Avoid overlapping of spray runs. Ensure that boom height for broadcast application does not exceed 50 cm above the leaf blades of the turf. Avoid application under conditions when uniform coverage cannot be obtained or when spray drift may occur.

### **Monument Liquid Tank Mix for Turf**

Ensure even product placement. Total application volume should be 400 to 800 L/ha. Use coarse droplets eg Air Induction 08 nozzles. Wash in with at least 6 mm rain or irrigation within 7 days after application. Refer to Monument Liquid label for specific application instructions.

### **Garden Beds and Potted Plants**

DO NOT apply with aircraft or through any type of irrigation equipment

DO NOT apply over the top of existing mulch

Apply prior to weed emergence. Ensure product placement as close to soil surface as possible. Total application volume should not be lower than 500 L/ha. For best results use extremely coarse droplets eg Air Induction 08 nozzles, use strainers with no less than a 50-mesh rating. When used on garden beds or potted plants wash in immediately with minimum 3 mm rain or irrigation. Consideration must be given to the impacts of foliage and canopy densities on placement of herbicide in the soil. Where canopy densities may pose a problem, use higher total application volumes and higher wash in volumes.

### **APVMA Compliance Instructions for Mandatory COARSE or Larger Droplet Size Categories**

These instructions inform users of this chemical product how to lawfully comply with the requirement of a COARSE or larger spray droplet size category for spray application.

Spray droplet size categories are defined in the ASAE S572 Standard (newer name may also be shown as ASABE) or the BCPC guideline. Nozzle manufacturers may refer to one or both to identify droplet size categories, but for a nozzle to comply with this requirement, the manufacturer must refer to at least one.

**Complying with the label requirement to use a specific droplet size category means using the correct nozzle that will deliver that droplet size category under the spray operation conditions being used.**

**The APVMA has approved only the following specific methods for choosing the correct nozzle. Use one of the methods specified in these instructions to select a correct nozzle to deliver a COARSE or larger droplet size category.**

#### **Mandatory instructions for ground applications for COARSE droplet size or larger categories**

USE ONLY nozzles that the nozzles' manufacturer has rated to deliver a COARSE, a VERY COARSE or an EXTREMELY COARSE droplet size category as referenced to ASAE S572 or BCPC. Choose a nozzle specified to provide the droplet size required in the label Spray Drift Restraints.

DO NOT use a higher spray system pressure than the maximum the manufacturer specifies for the selected nozzle to deliver the droplet size category required in the label Spray Drift Restraint.

### **Compatibility**

As formulations of other manufacturers' products are beyond the control of Syngenta, and water quality varies with location, all mixtures should be tested prior to mixing commercial quantities. BARRICADE is compatible with Monument Liquid.

### **Clean up**

After tank mixing with Monument Liquid refer to the Monument Liquid label for spray tank cleaning instructions.

### **Replanting interval**

#### **Turf**

DO NOT replant any crop, ornamentals or overseed with cool season grasses for winter cover to treated areas for a period of 6 months after application.

#### **Garden Beds and Nursery Pots**

DO NOT plant seeds in treated soil for 6 months after application.

### **Herbicide Resistance Warning**

**GROUP D HERBICIDE**

BARRICADE Herbicide is a member of the dinitroaniline group of herbicides and has the tubulin formation inhibitor mode of action. For weed resistance management this product is a Group D herbicide. Some naturally occurring weed biotypes resistant to BARRICADE and other Group D herbicides may exist through normal genetic variability in any weed population. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by BARRICADE or other Group D herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, Syngenta Australia Pty Ltd accepts no liability for any losses that may result from the failure of BARRICADE to control the resistant weeds. Advice as to strategies and alternative treatments that can be used should be obtained from your local supplier, consultant, local Department of Agriculture, Primary Industries Department or a Syngenta representative.

### **Integrated Pest Management**

The possible effects of BARRICADE on integrated pest management (IPM) strategies in the turf industry have not been studied at the proposed rates. However, based on available information, it cannot be ruled out that BARRICADE may have an adverse effect on non-target beneficial turfgrass invertebrates where such IPM is practised.

## PRECAUTIONS

### Re-entry Period

**General Public:** DO NOT allow public entry into treated areas until the spray has dried.

**Grounds Staff / Professional Operators:** DO NOT enter into treated areas until spray has dried, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.

## PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS

DO NOT apply or drain or flush equipment on or near native or non-target trees or other plants or on areas where their roots may extend or in locations where the chemical may be washed or moved into contact with their roots.

## PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

Very toxic to aquatic life. DO NOT contaminate wetlands or watercourses with this product or used containers.

## STORAGE AND DISPOSAL

Keep out of reach of children. Store in the closed, original container in a cool, well ventilated area. DO NOT store for prolonged periods in direct sunlight. Triple rinse containers before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. DO NOT burn empty containers or product.

## SAFETY DIRECTIONS

**Repeated exposure may cause allergic disorders. Sensitive workers should use protective clothing.**

**When opening the container, preparing spray and using prepared spray wear:**

- cotton overalls buttoned to the neck and wrist (or equivalent clothing)
- elbow-length chemical resistant gloves

**If applying by high pressure hand wand, wear:**

- cotton overalls, over normal clothing, buttoned to the neck and wrist
- a washable hat
- elbow length chemical resistant gloves

**If product on skin, immediately wash area with soap and water. Wash hands after use. After each day's use wash gloves and contaminated clothing.**

## FIRST AID

**If poisoning occurs, contact a doctor or Poisons Information Centre. Phone +65 6334 4366.**

## MATERIAL SAFETY DATA SHEET

If additional hazard information is required refer to the Material Safety Data Sheet. For a copy phone +65 6333 6400

## DISCLAIMER

This product complies with the specifications in its statutory registration. Implied terms and warranties are excluded. Syngenta's liability for breach of the express or any non-excludable implied warranty is limited to product replacement or purchase price refund. The purchaser must determine suitability for intended purpose and take all proper precautions in the handling, storage and use of the product including those on the label and/or safety data sheet failing which Syngenta shall have no liability.

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