

BroadStar® Herbicide

GRANULAR HERBICIDE
COMMERCIAL

Preemergence weed control in outdoor container-grown woody ornamentals.

GUARANTEE: Flumioxazin..... 0.25%

READ THE LABEL BEFORE USING

Warning: This product contains the allergen sulfite.

REGISTRATION NO.: 29229
PEST CONTROL PRODUCTS ACT

GROUP	14	HERBICIDE
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CAUTION - POISON

Net Contents: 22.7 kg

Valent Canada, Inc.
6-130 Research Lane
Guelph, Ontario, Canada
N1G 5G3
519-767-9262
www.valent.ca

NOTICE TO USER

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *PEST CONTROL PRODUCTS ACT* to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

FIRST AID

- IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.
- IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.
- IF INHALED:** Move the person to fresh air. If the person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.
- IF SWALLOWED:** Call a poison control centre or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION

There is no specific antidote for this product. Apply symptomatic therapy.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN. Avoid contact with skin, eyes or clothing. Harmful if inhaled. Avoid inhaling dust and spray mist.

Loaders, applicators, and other handlers must wear coveralls over long-sleeved shirt and long pants, chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride, shoes and socks. Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Do not enter or allow worker entry into treated areas until the crop has been irrigated and any plant foliage has dried.

Do not apply under circumstances where possible dispersal to unprotected persons or to food, forage or other plants that might be damaged or become unfit for sale, use or consumption.

Equipment Restrictions: The maximum amount of product handled per day for a hand-cranked spreader is 57 kg product/day. The maximum amount of product handled per day by hand dispersal is 13 kg product/day.

Do not enter or allow worker entry during the restricted entry interval (REI) of 2 days for digging, transplanting, or other manual disturbing activities of treated soil or growth media for the purposes of moving or transporting container-grown ornamentals.

ENVIRONMENTAL HAZARDS

This product is toxic to aquatic organisms, birds, and small wild mammals. Any spilled or exposed granules must be incorporated into the soil or otherwise cleaned-up from the soil. To reduce runoff from treated areas into aquatic habitats, avoid application to areas with a moderate to steep slope, compacted soil, or clay. Avoid application when heavy rain is forecast. Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

DISPOSAL/DECONTAMINATION

FOR DISPOSAL OF BAG:

1. Empty bag thoroughly.
2. Make the empty bag unsuitable for further use.
3. Dispose of the bag in accordance with provincial requirements.
4. For information on the disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

FOR DISPOSAL OF A PLASTIC CONTAINER:

DO NOT REUSE THIS CONTAINER FOR ANY PURPOSE. This is a recyclable container and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

STORAGE:

Do not contaminate water, food or feed by storage. Keep pesticide in original container. Store in a cool, dry, secure place. Do not put formulation into food or drink containers. Do not store or transport near feed or food. Not for use or storage in or around the home.

***IN CASE OF EMERGENCY INVOLVING A MAJOR SPILL OR POISONING CALL
1-800-682-5368***

RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management *BroadStar Herbicide* contains a Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to *BroadStar Herbicide* and other Group 14 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed. To delay herbicide resistance:

- Where possible, rotate the use of *BroadStar Herbicide* or other Group 14 herbicides with different herbicide groups that control the same weeds in the field.
- Use tank mixtures with herbicides from a different group when such use is permitted.
- Herbicide use should be based on an IPM program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical), cultural, biological and other chemical control practices.
- Monitor treated weed populations for resistance development.
- Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment and planting clean seed.
- Contact your local extension specialist or certified crop advisor for any additional pesticide resistance-management and/or or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information and to report suspected resistance, contact Valent Canada, Inc. at 1-800-682-5368 or at www.valent.ca.

GENERAL INFORMATION

BroadStar Herbicide is a selective preemergence herbicide that provides extended residual control of weeds listed on this label. *BroadStar Herbicide* is labelled for use in container-grown ornamentals. *BroadStar Herbicide* should not be applied in residential or commercial landscapes.

Apply *BroadStar Herbicide* before germination of target weeds or immediately after disturbing the soil surface. *BroadStar Herbicide* controls weeds by inhibiting

protoporphyrinogen oxidase, an essential enzyme required by plants for chlorophyll biosynthesis. Seedling weeds are controlled preemergence when exposed to sunlight following contact with the soil-applied herbicide. *BroadStar Herbicide* is tightly bound to soil and does not inhibit or limit root growth under normal growing conditions. Plant injury associated with volatilization of *BroadStar Herbicide* has not been observed.

BroadStar Herbicide can be safely applied over the top of many species of woody ornamental shrubs and trees. *BroadStar Herbicide* may cause leaf spotting on some tolerant species if granules are allowed to remain in contact with leaf surfaces, especially on new flush or on foliage that is wet at the time of application. However, subsequent plant growth is generally unaffected. *BroadStar Herbicide* may injure some otherwise tolerant species if not applied in accordance with the label, and may also injure ornamental species that are not listed on the label. Therefore, read all label precautions and restrictions before applying *BroadStar Herbicide* to ornamental plants.

General Restrictions and Limitations:

- DO NOT apply by air.
- Do not apply in an enclosed greenhouse structure.
- Do not apply to moist or wet plant foliage.
- Do not apply to recently transplanted liners until liners have been actively growing for at least 6 weeks after transplanting.
- Use caution when applying to plants that are producing a new flush of growth because herbicide may injure tender, newly formed leaves if granules remain in contact with leaf surfaces.
- Do not apply to pots less than 10 cm in diameter.
- Do not apply to herbaceous perennials.
- Do not apply to bedding plants or areas where bedding plants will be planted or transplanted within one year following application.
- Do not apply to plants while in propagation.
- Do not incorporate product into soil or potting media.
- Do not apply to ornamentals growing in residential or commercial landscapes.
- Do not apply to plants that are under moisture stress or stress from insects, diseases, animals, winter injury, planting shock or any other stresses.
- Do not apply more than 168 kg/ha in a single application. Do not apply more than twice in a single year.
- Do not treat the same plants more than once every 11 weeks.
- Do not place treated plants in an enclosed structure until after applying 2.5 cm of irrigation to plants and for 7 days after treatment.
- Do not apply when winds are gusty or above 16 km/h.
- To be used only on potting media containing bark, sawdust, peat moss, sand, plant residue, or any combination of these materials.
- As this pesticide is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests.
- DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

Apply *BroadStar Herbicide* with clean, well maintained drop or rotary type granular application equipment. Calibrate application equipment prior to use and according to manufacturer's directions. Check frequently to be sure equipment is working properly and distributing granules uniformly. When using a drop type spreader, a splashboard mounted under the hopper will provide more even granule distribution. When using a hand held or push type rotary applicator, walk and turn the crank at a constant rate of speed. Avoid skips and overlaps, as poor weed control or crop injury may occur. To achieve a more uniform application, broadcast half the desired amount of *BroadStar Herbicide* in one direction then apply the other half at a right angle to the first direction.

SETTINGS FOR HAND CRANKED SPREADERS

The application rate of *BroadStar Herbicide* with hand cranked spreaders will depend on the width of the area to be treated, the operator's walking speed, the speed at which the operator turns the crank and the spreader setting (opening). The walking and cranking speed with vary among operators. Therefore, hand cranked spreaders must be calibrated for individual operators in order to apply *BroadStar Herbicide* at the labelled rated of 84 or 168 kg/ha.

APPLICATION TO INDIVIDUAL CONTAINERS

BroadStar Herbicide may be applied to the soil surface of individual containers, but only at a rate that is equivalent to the amount of product that would land on the media surface of an individual container if broadcast applied at 84 or 168 kg/ha. Use the conversions in the table below to determine how much *BroadStar Herbicide* to apply to an individual container.

Application Amounts for Individual Containers (equivalent to 168 kg/ha). For control of weeds listed at 84 kg/ha, reduce the amount of *BroadStar Herbicide* in the following table by half.

Pot Diameter		Gram(s) product per pot	Teaspoon(s) product per pot
Inches	cm		
4	10	0.14	1/28
5	13	0.21	1/18
6	15	0.31	1/12
7	18	0.42	1/9
8	20	0.55	1/7
9	23	0.69	1/6
10	25	0.85	1/5
12	30	1.23	1/3
14	36	1.67	1/2
16	41	2.18	5/8
18	46	2.79	3/4
20	51	3.41	7/8

Pot Diameter		Gram(s) product per pot	Teaspoon(s) product per pot
Inches	cm		
22	56	4.12	1
24	61	4.91	1 1/4
26	66	5.76	1 1/2
28	71	6.68	1 3/4
30	76	7.67	2
32	81	8.73	2 1/4
34	86	9.85	2 1/2
36	91	11.05	3
38	97	12.31	3 1/4
40	102	13.64	3 1/2
42	107	15.03	4

One level teaspoon of *BroadStar Herbicide* weighs approximately 3.8 grams

One heaping teaspoon of *BroadStar Herbicide* weighs approximately 5.9 grams

One level tablespoon *BroadStar Herbicide* weighs approximately 11.2 grams

DIRECTIONS FOR USE IN OUTDOOR CONTAINER-GROWN WOODY
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ORNAMENTALS

For optimal preemergence control, apply *BroadStar Herbicide* before weed seeds germinate. Disturbing soil surfaces after application may reduce herbicide efficacy. Remove existing weeds, weed residues and trash before application of *BroadStar Herbicide*.

Apply to dry foliage only. To test for moisture, rub hands over plant foliage. Approximately 1-2 cm of rainfall, overhead sprinkler irrigation or hand irrigation is required to activate *BroadStar Herbicide*. Irrigate plants immediately after application (within one hour) with 1-2 cm of water to wash the particles off of the plant foliage. Inadequate irrigation or rainfall following application may reduce effectiveness of *BroadStar Herbicide*. Drip irrigation cannot be relied upon to ensure activation of *BroadStar Herbicide*.

If adequate soil moisture is maintained following application, *BroadStar Herbicide* will provide residual control of the listed weeds, except under unusual environmental conditions (excessive rainfall, irrigation or temperature).

Do not apply this product directly to freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands), estuarine/marine habitats. Do not allow effluent or run-off containing this product from the treatment area to enter lakes, streams, ponds or other waters. Do not contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

WEEDS CONTROLLED	APPLICATION RATE (kg/ha)
Hairy bittercress/snapweed (<i>Cardamine hirsuta</i>)	84
Hairy bittercress/snapweed (<i>Cardamine hirsuta</i>) Liverwort (<i>Marchantia polymorpha</i>) <i>Suppression only:</i> Common groundsel (<i>Senecio vulgaris</i>) Common chickweed (<i>Stellaria media</i>)	168

PLANT TOLERANCE INFORMATION

Woody ornamental plants vary in their tolerance to *BroadStar Herbicide* when the product is applied according to the label instructions. Only those plants listed as “tolerant” on this label have shown tolerance to this product. For the list of tolerant tree species and the list of tolerant shrubs and ground covers, refer to the tolerant container-grown ornamentals section of this label. For the list of plant species and cultivars with known susceptibility to *BroadStar Herbicide* refer to the susceptible container-grown ornamentals section of this label.

For woody ornamental species not listed on this label: *BroadStar Herbicide* is a very active herbicide and the user should exercise caution until gaining familiarity with this product. Due to variability within and among species, crop growth stage, environmental conditions

and application techniques, users should first test *BroadStar Herbicide* on a small number of actively growing plants under local conditions and their standard production practices. Prior to treating the entire crop, examine test plants for 4-8 weeks for symptoms of phytotoxicity. Testing *BroadStar Herbicide* on a small number of plants will determine whether the product is suitable for widespread application.

BroadStar Herbicide can severely injure a variety of annual bedding plants and herbaceous perennials (e.g. Hosta and Daylily). The most common symptoms of injury are small necrotic spots on leaves and temporary dieback of new growth.

BroadStar Herbicide can injure liners of several woody ornamental species that are tolerant when more mature. Injury is most likely when *BroadStar Herbicide* is applied before liners establish a vigorous root system.

TOLERANT CONTAINER-GROWN ORNAMENTALS

IMPORTANT: Injury other than temporary leaf spotting has not been observed on species listed in the following table when *BroadStar Herbicide* was applied at the labeled rate after transplanted liners had established a well developed root system.

TOLERANT TREE SPECIES	
Common Name	Scientific Name
Eastern white cedar	<i>Thuja occidentalis</i>
Amur maple	<i>Acer ginnala</i>
maple, Japanese	<i>Acer palmatum</i>
oak, red	<i>Quercus rubra</i>
spruce, blue	<i>Picea pungens</i>
spruce, white	<i>Picea glauca</i>
yew	<i>Taxus x media</i>

TOLERANT SHRUBS AND GROUND COVERS	
Common Name	Scientific Name
Boxwood tree	<i>Buxus sempervirens</i>
juniper, creeping	<i>Juniperus horizontalis</i>
juniper, sabin	<i>Juniperus sabina</i>

SUSCEPTIBLE CONTAINER-GROWN ORNAMENTALS

Plant injury has been observed on the following plant species and cultivars. Injury is mostly in the form of leaf spotting or speckling on treated leaves, especially new flushes of growth. It is recommended that *BroadStar Herbicide* not be applied to these plants.

SUSCEPTIBLE CONTAINER-GROWN ORNAMENTALS	
Common Name	Scientific Name
Azalea	<i>Rhododendron</i> spp. "Delaware Valley"
butterfly bush	<i>Buddleia davidii</i>

Sweet pepperbush	<i>Clethra alnifolia</i>
deutzia, slender	<i>Deutzia gracilis</i> “Nikko”
holly, winterberry	<i>Ilex verticillata</i>
Hydrangea	<i>Hydrangea spp.</i>
Lilac	<i>Syringa spp.</i>
Nandina	<i>Nandina domestica</i> “Firepower”
plumbago, cape	<i>Plumbago auriculata</i>
rose	<i>Rosa spp.</i>
spirea, Japanese	<i>Spiraea japonica</i>
wax myrtle, Southern	<i>Myrica cerifera</i>

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