

**Dow AgroSciences****Surflan\* A.S.****Specialty Herbicide**

A selective preemergence surface-applied herbicide for control of annual grasses and many broadleaf weeds in:

- Landscape Ornamentals
- Container Grown Ornamentals
- Field Grown Ornamentals
- Drainage Areas Under Shadehouse Benches
- Ornamental Bulbs
- Ground Covers/Perennials
- Christmas Tree Plantations
- Noncropland and Industrial Sites
- Non-bearing fruit and nut trees and non-bearing vineyards
- Established Warm Season Turf (including Bahiagrass, Bermudagrass, Buffalograss, Centipedegrass, St. Augustinegrass and Zoysiagrass)
- Tall Fescue (warm season areas)

Active Ingredient:

oryzalin: 3,5-dinitro-*N*<sup>4</sup>*N*<sup>4</sup>-dipropylsulfanilamide ..... 40.4%

Inert Ingredients ..... 59.6%

Total ..... 100.0%

Contains 4.0 pounds of active ingredient per gallon.

EPA Reg. No. 62719-113

**PRECAUTIONARY STATEMENTS****Hazards to Humans and Domestic Animals****KEEP OUT OF REACH OF CHILDREN****CAUTION/PRECAUCION**

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

**Causes Eye Irritation • Harmful If Swallowed, Inhaled, Or Absorbed Through The Skin**

**Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist. Surflan A.S. may cause skin sensitization reactions in certain individuals.**

**Personal Protective Equipment (PPE)****Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

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

**User Safety Recommendations**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

**First Aid**

**If in eyes:** Flush with plenty of water. Get medical attention if irritation develops.

**If on skin:** Wash with plenty of soap and water. Get medical attention if irritation develops.

**If swallowed:** Do not induce vomiting. Call a physician or Poison Control Center. If available, administer activated charcoal (6-8 heaping teaspoons) with a large quantity of water. Do not give anything by mouth to an unconscious person. Immediately transport to a medical care facility and see a physician.

**If inhaled:** Remove individual to fresh air. Get medical attention if breathing difficulty occurs. If not breathing, give artificial respiration, preferably cardiopulmonary resuscitation, and get medical attention immediately.

**Environmental Hazards**

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate. Cover or incorporate spills.

**Notice:** Read the entire label. Use only according to label directions. **Before buying or using this product, read "Warranty Disclaimer" and "Limitation of Remedies" elsewhere on this label.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at [www.dowagro.com](http://www.dowagro.com).

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

**DIRECTIONS FOR USE**

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

Read all Directions for Use carefully before applying.

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

**Agricultural Use Requirements**

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

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
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

**STORAGE AND DISPOSAL**

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

**Storage:** Store in original container only. In case of leak or spill, use absorbent materials to contain liquids and dispose as waste.

**Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

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

**GENERAL INFORMATION**

Surflan\* A.S. herbicide is a preemergence surface-applied product for the control of many annual grasses and broadleaf weeds in ornamental plantings, bulbs, ground covers/perennials, established warm-season turfgrass, Christmas tree plantations, non-bearing trees and vines, and noncropland and industrial sites.

Surflan A.S. is orange in color and may cause temporary discoloration of sprayed surfaces. If this discoloration is undesirable, it may be altered by using a commercially available colorant such as Blazon or removed by spraying surface with water or washing with an industrial cleaner immediately after application. Surflan A.S. may also be applied with mulch colorants, such as Mulch Magic or Nu-Mulch.

**Treatment of Plant Species Not Listed on the Label for Surflan A.S.**

Users who wish to use Surflan A.S. on plant species not recommended on this label may determine the suitability for use by treating a small number of such plants at a recommended rate. Prior to treatment of larger areas, the treated plants should be observed for any sign of herbicidal injury during 30-60 days of normal growing conditions to determine if the treatment is non-injurious to the target plant species. The user assumes responsibility for any plant damage or other liability resulting from use of Surflan A.S. on plant species not recommended on this label.

**Application****Soil Preparation**

Surflan A.S. controls weeds growing from seed. Surflan A.S. will not control emerged weeds. Surflan A.S. does not control established weeds, weeds growing from stolons, rhizomes, or root pieces. Therefore, areas to be treated should be free of emerged weeds. Weed residues, prunings, and trash should be thoroughly mixed into the soil or removed prior to treatment. In field applications, the soil should be in good till and free of clods at the time of application.

**Ground Application:** Apply Surflan A.S. as a directed spray to the soil surface or over the top of plants. Use only a properly calibrated, low-pressure, herbicide sprayer that will apply the spray uniformly. Use screens no finer than 50 mesh in nozzles and in-line strainers. Apply the appropriate rate of Surflan A.S., as outlined in "Approved Uses" section of this label. In all cases, use sufficient water volume to obtain uniform coverage and deliver the desired rate of Surflan A.S. to the treated area. The volume of water used is not critical, as long as the desired rate of Surflan A.S. is delivered uniformly across the area treated. When calibrating, determine the volume of water delivered by the sprayer to a given area (1,000 sq ft, 1 acre, etc.). Then mix the desired rate of Surflan A.S. in the amount of water required to cover the entire area to be treated. As the amount of water used (spray volume) decreases, the importance of accurate calibration and uniform application increases. Check the sprayer daily to ensure

proper calibration and uniform application. Maintain continuous agitation from mixing through application. Avoid spray pattern skips and overlaps that may result in incomplete coverage or over-application.

**Hand Held or Backpack Sprayer Application:** The amount of water used to apply Surflan A.S. herbicide is not critical, but should be sufficient for uniform coverage of the target area. Calibrate by determining the volume of water required to treat 1,000 square feet. Use this calibration volume to determine the amount of water and Surflan A.S. herbicide needed to treat the target area (see the following calibration example). **Note:** Sprayer calibration (volume of spray needed to treat 1,000 square feet) will vary with each individual operator.

Steps in Calibration:

1. Mark an area of 1,000 square feet (i.e. 20 by 50 feet, or 25 by 40 feet).
2. Place the sprayer on a level surface and add water noting the final level of water in the spray tank.
3. Spray the marked area with a sufficient volume of water to provide uniform coverage. Refill the sprayer to the same level as before measuring the amount of water added. The measured water added to the sprayer is the volume needed to cover 1,000 square feet.
4. Determine the application rate (fl oz/1,000 sq ft) for Surflan A.S. from the "Approved Uses" section of this label.
5. To each volume of water used, as measured in step 3, add the amount of Surflan A.S. as determined in step 4.

**Example:** If the sprayer used 2 gallons of water to cover 1,000 square feet and the desired application rate of Surflan A.S. is 3 fluid oz/1,000 square feet, then you would add 3 fluid ounces of Surflan A.S. to every 2 gallons of water to be used.

**Aerial Application: Do not aerially apply this product.**

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

**Precaution:** Avoid spray drift to non-target areas when applying Surflan A.S. Spray drift may result in reduced emergence of non-target plants adjacent to the treated area. Poor weed control may result if directions are not followed. Over-application may result in crop injury or excessive soil residue.

#### Mixing Directions

##### Shake Well Before Using

**Precaution:** Do not allow the spray mixture to siphon back into water source.

##### Surflan A.S.—Alone

Make sure spray tank is clean and use only clean water. Fill spray tank  $\frac{1}{2}$ - $\frac{3}{4}$  full. Start agitation and add the required amount of Surflan A.S. Continue agitation and finish filling the spray tank. Maintain continuous agitation until application is completed.

##### Surflan A.S.—Tank Mix Combinations

Prior to mixing, read and carefully follow all label instructions and precautions for each product added to the tank mixture. Vigorous, continuous agitation is required for all tank mixes of Surflan A.S. Sparger pipe agitators generally provide the best agitation in spray tanks.

**Mixing Order:** Fill the tank  $\frac{3}{4}$  full with clean water. Start agitation and add different formulation types in the order indicated below, allowing time for complete mixing and dispersion after addition of each product. Allow extra mixing and dispersion time for dry flowable products.

Add different formulation types in the following order: dry flowables (DF); wettable powders (WP); Surflan A.S. and other aqueous suspensions (AS), flowables (F), and liquids (L); solutions (S); and emulsifiable concentrates (EC).

Continue agitation and finish filling the spray tank with clean water. Maintain agitation until application is completed. If spraying and agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be completely resuspended before spraying is continued. A sparger agitator is particularly useful for this purpose.

**Premixing:** When tank mixing, initial mixing and dispersion of certain dry flowable or wettable powder products may be improved by premixing with water (slurrying). Adding the slurried material to the spray tank through a 20 or 35 mesh wetting screen will help assure good initial dispersion.

#### Equipment Cleaning

If a buildup of material occurs on the walls of the spray tank, it should be removed between fillings by washing with soap and water and rinsing thoroughly. Tanks, lines, screens, and nozzles should be cleaned thoroughly after each use.

#### Activation and Cultivation

Surflan A.S. will remain stable on the soil surface up to 21 days following application. In the absence of timely rainfall, irrigation can be used to activate Surflan A.S. A minimum of one-half ( $\frac{1}{2}$ ) inch of rain or its equivalent in sprinkler irrigation is necessary to activate Surflan A.S. If weeds begin to emerge due to lack of rainfall or irrigation, shallow cultivate 1-2 inches deep to destroy existing weeds, or remove them by hand. Shallow cultivation to a depth of 1-2 inches will enhance herbicidal effectiveness. If Surflan A.S. is not activated by rainfall, irrigation, or cultivation within 21 days of application, or existing weeds have not been removed, erratic weed control may result.

#### Weeds Controlled by Surflan A. S.

##### Annual Grasses:

**Common Name**  
barley, little  
barnyardgrass (watergrass)  
bluegrass, annual  
crabgrass, large

**Scientific Name**  
*Hordeum pusillum*  
*Echinochloa crus-galli*  
*Poa annua*  
*Digitaria sanguinalis*

crabgrass, smooth  
crowfootgrass  
cupgrass, southwestern  
foxtail, bristlegrass  
foxtail, giant  
foxtail, green (pigeongrass)  
foxtail, robust  
foxtail, yellow  
goosegrass (silver crabgrass)  
Johnsongrass (seedling only)  
jungerice  
lovegrass, Mexican  
lovegrass, orcutt  
oat, wild  
panicum, browntop  
panicum, fall (spreading panicgrass)  
panicum, Texas (buffalograss)  
(Coloradograss)  
ryegrass, Italian  
signalgrass (Brachiaria)  
sprangletop, red  
witchgrass

#### Broadleaf Weeds:

##### Common Name

bittercress  
carpetweed  
chickweed, common  
fiddleneck, coast  
filaree, redstem  
filaree, whitestem  
groundsel, common  
henbit  
knotweed, prostrate  
lambsquarters  
pigweed, prostrate  
pigweed, redroot  
pigweed, spring  
pigweed, tumble  
puncturevine  
purslane, common  
pusley, Florida (Florida purslane)  
(Mexican clover) (Pusley)  
rocket, London  
rockpurslane, desert  
shepherdspurge  
spurge, prostrate  
woodsorrel, yellow

#### Weeds Suppressed by Surflan A.S.

Control of the following weeds may be erratic, ranging from poor to excellent, depending upon soil temperature, time of germination, depth of seed in the soil, and amount and timing of soil moisture:

##### Common Name

horseweed  
ladysthumb  
lettuce, prickly  
mallow, common  
milkweed, climbing  
morningglory  
mustard, black  
mustard, wild  
nightshade, black  
ragweed, common  
smartweed  
sowthistle, annual  
spurge, spotted  
teaweed (prickly sida)  
velvetleaf  
wheat, volunteer

##### Scientific Name

*Digitaria ischaemum*  
*Dactyloctenium aegyptium*  
*Eriochloa gracilis*  
*Setaria magna*  
*Setaria faberi*  
*Setaria viridis*  
*Setaria robusta*  
*Setaria glauca*  
*Eleusine indica*  
*Sorghum halepense*  
*Echinochloa colonum*  
*Eragrostis mexicana*  
*Eragrostis orcuttiana*  
*Avena fatua*  
*Panicum fasciculatum*  
*Panicum dichotomiflorum*  
*Panicum texanum*  
  
*Cenchrus incertus*  
*Brachiaria* spp.  
*Leptochloa filiformis*  
*Panicum capillare*

##### Scientific Name

*Cardamine oligosperma*  
*Mollugo verticillata*  
*Stellaria media*  
*Amsinckia intermedia*  
*Erodium cicutarium*  
*Erodium moschatum*  
*Senecio vulgaris*  
*Lamium amplexicaule*  
*Polygonum aviculare*  
*Chenopodium album*  
*Amaranthus blitoides*  
*Amaranthus retroflexus*  
*Amaranthus hybridus*  
*Amaranthus albus*  
*Tribulus terrestris*  
*Portulaca oleracea*  
*Richardia scabra*  
  
*Sisymbrium irio*  
*Calandrinia ciliata*  
*Capsella bursa-pastoris*  
*Euphorbia humistrata*  
*Oxalis stricta*

#### Approved Uses

##### Ornamental Plantings

Surflan A.S. is recommended for use on certain landscape container- and field-grown established ornamental plants including: trees, shrubs, ground covers/perennials, flowers, non-bearing fruit and nut trees, non-bearing vineyards; and in the production of ornamental bulbs (See "Ornamental Bulbs" section for special use directions).

**Broadcast Application Rates**

Length of Control	Surflan A.S.	
	quarts/acre	fl oz/1000 sq ft
2-4 months	2	1.5
4-8 months	4	3

**Tank Mix Combinations**

Tank mix combinations of Surflan A.S. plus Roundup, and many other labeled herbicides may be used to control undesirable vegetation in ornamental areas. Surflan A.S. may also be tank mixed with Gallery\* herbicide and applied preemergence to broaden the spectrum of broadleaf weed control in ornamental areas. Applied as directed, these tank mixes of Surflan A.S. will provide control of susceptible weed species listed on the respective labels. Refer to tank mix product labels for specific use directions, precautions, and limitations before use.

**Surflan A.S. Plus Roundup:** Tank mix combinations of Surflan A.S. plus Roundup are recommended to control existing undesirable vegetation. Applied as directed, Surflan A.S. plus Roundup will provide postemergence control of susceptible weed species listed on the label for Roundup and residual preemergence control of susceptible weed species listed on the label for Surflan A.S. Refer to the label for Roundup for specific use directions, precautions, and limitations before use.

**Precautions:** Do not apply sprays containing Roundup over the top of ornamental plants. Extreme care must be exercised to prevent sprays containing Roundup from coming in contact with foliage and stems of turfgrasses, trees, shrubs, or other desirable vegetation since severe damage or death may result. If spraying with Roundup in areas adjacent to desirable plants, use a shield to prevent spray from contacting foliage and stems of desirable plants.

**Special Use Precautions:**

Apply only to established plants that have been transplanted into their growing location for a sufficient period of time to allow the soil to be firmly settled around the roots from packing and rainfall or irrigation.

Rooted liners should be removed from their original growing containers and placed in new containers at least two weeks prior to treatment or injury may occur.

To avoid possible injury, do not apply Surflan A.S. to:

- Nursery, forest, or Christmas tree: seedling beds, cutting beds, or transplant beds.
- Unrooted liners or cuttings that have been planted in pots for the first time.
- Pots less than four inches wide.
- Ground covers until they are established and well rooted.
- Ornamental plantings where there is likelihood of runoff onto lawn areas.
- Areas containing dichondra or cool season turfgrass species.

On container grown ornamentals where weed seed germination continues for extended periods of time, do not make repeat applications of Surflan A.S. for at least 90 days or crop injury may occur.

Applications of Surflan A.S. over the top of plants with newly forming buds may cause injury. In this situation a directed spray is recommended.

For soils treated with Surflan A.S. during the previous season, plant only the ornamental species listed on this label or injury may occur.

**Ice Plant:** When establishing unrooted ice plant on coarse-textured soils in landscape plantings, do not exceed the 2 quart per acre rate of Surflan A.S. or crop injury may occur.

**Note: Injury on the following plant species has been observed following applications of Surflan A.S. and use is not recommended:**

*Deutzia gracilis* (slender deutzia)

*Pseudotsuga menziesii* (Douglas-fir)

*Thuja occidentalis* 'Techny' (Techny arborvitae)

*Tsuga canadensis* (eastern hemlock)

*Begonia* spp. (begonia)

*Coleus hybridus* (coleus)

**Surflan A.S. May be Used on the Following Established Plant Species:**

(Note: Limitations on recommended treatment methods).

**Trees****Recommended Treatment Method**

**F = Field Grown**

**C = Container Grown**

Scientific Name	Common Name	
<i>Abies balsamea</i>	Fir, balsam	F
<i>Abies concolor</i>	Fir, white	F
<i>Abies fraseri</i>	Fir, fraser	F
<i>Abies grandis</i>	Fir, grand	F
<i>Abies veitchi</i>	Fir, Vietch	F
<i>Abies lasiocarpa</i>	Fir, alpine	F
<i>Abutilon hybridum</i>	Albus-flowering maple	F
	Luteus-flowering maple	F
	Roseus-flowering maple	F
	Tangerine-flowering maple	F
	Vesuvius red-flowering maple	F
<i>Acer ginnala</i>	Flame maple	F
<i>Acer rubrum</i>	Red sunset maple	F
<i>Acer saccharinum</i>	Silver maple	F

Scientific Name	Common Name	
<i>Acer</i> spp.	Maple	F
<i>Areacastrium romanoffianum</i>	Queen palm	F
<i>Betula nigra</i>	Birch, river	F
<i>Betula papyrifera</i>	Paper birch	F
<i>Betula pendula</i>	Birch, white	F
<i>Bucida buceras</i>	Black olive	F
<i>Carya</i> spp.	Pecan, ornamental	C,F
<i>Ceratonia siliqua</i>	Carob	F
<i>Cercidium floridum</i>	Palo Verde, blue	F
<i>Cercis canadensis</i>	Redbud	C,F
<i>Chamaecyparis lawsoniana</i>	Falsecypress, Lawson	F
<i>Chamaecyparis obtusa</i>	Filicoides-fernspray cypress	F
	Gracilis-slender Hinoki cypress	F
<i>Chamaecyparis pisifera</i>	Sawara-false cypress	F
	Squarrosa-moss cypress	F
<i>Chamaedorea cataractarum</i>	Cat Palm	F
<i>Chamaedorea costaricana</i>	Palm	F
<i>Chamaedorea elegans</i>	Parlor palm	F
<i>Citrus</i> spp.	Citrus, ornamental	C,F
<i>Cornus florida</i>	Dogwood, flowering	F
<i>Cryptomeria japonica</i>	Cryptomeria, Japanese	C,F
<i>Cupaniopsis anacardioides</i>	Carrot wood	F
<i>Cupressus arizonica</i> (glabra)	Cypress, Arizona	C,F
<i>Cupressus glabra</i>	Arizona cypress	C,F
<i>Cupressus sempervirens</i>	Cypress, Italian	C,F
<i>Elaeagnus angustifolia</i>	Russian olive	C,F
<i>Eucalyptus camaldulensis</i>	Red gum eucalyptus	F
<i>Eucalyptus cinerea</i>	Eucalyptus, mealy	F
	Silver dollar eucalyptus	F
<i>Eucalyptus nicholii</i>	Eucalyptus, narrow-leaved	F
<i>Eucalyptus sideroxylon</i>	Eucalyptus, red ironbark	F
<i>Ficus benjamina</i>	Ficus	F
<i>Fraxinus</i> spp.	Ash	F
<i>Ginkgo biloba</i>	Ginkgo (Maidenhair tree)	C,F
<i>Gleditsia triacanthos</i>	Honey locust	F
<i>Heteromeles arbutiflora</i>	Toyon	F
<i>Juniperus virginiana</i>	Redcedar, Eastern	F
<i>Koeleruteria paniculata</i>	Goldenrain tree	F
<i>Liquidambar styraciflua</i>	Sweetgum, American	C,F
<i>Magnolia grandiflora</i>	Magnolia, Southern	F
<i>Malus</i> spp.	Crabapple	F
<i>Morus alba</i>	White mulberry	F
<i>Picea abies</i>	Pendula-weeping Norway spruce	F
	Repens-spreading Norway spruce	F
	Spruce, Norway	F
<i>Picea englemanni</i>	Spruce, Englemann	F
<i>Picea glauca</i>	Spruce, white	F
	Conica-dwarf Alberta spruce	F
<i>Picea glauca conica</i>	Dwarf Alberta spruce	F
<i>Picea mariana</i>	Spruce, black	F
<i>Picea pungens</i>	Glaucia-Colorado blue spruce	F
	Hoopsii-Hoop's blue spruce	F
	Koster-Koster blue spruce	F
	Spruce, Colorado	C,F
<i>Pinus aristata</i>	Bristlecone pine	F
<i>Pinus canariensis</i>	Canary Island pine	F
<i>Pinus contorta</i>	Shore pine, beach pine	F
<i>Pinus eldarica</i>	Eldarica pine	F
<i>Pinus radiata</i>	Monterey pine	F
<i>Pinus</i> spp.	Pine	C,F
<i>Pinus strobus</i>	Eastern white pine	F
<i>Pinus sylvestris</i>	Scotch pine	F
<i>Pinus thunbergiana</i>	Japanese black pine	F
<i>Platanus occidentalis</i>	American sycamore	F
<i>Platanus racemosa</i>	California sycamore	F
<i>Podocarpus</i> spp.	Podocarpus	F
<i>Populus deltoides</i>	Cottonwood	F
	Cottonwood (grown for pulp)	F
<i>Prunus caroliniana</i>	Laurelcherry, Carolina	F
<i>Prunus laurocerasus</i>	Laurelcherry, English	F
<i>Prunus mahaleb</i>	Cherry, Mahaleb	F
<i>Prunus yedoensis</i>	Yoshino flowering cherry	F
<i>Pyrus communis</i>	Pear	F
<i>Quercus palustris</i>	Pin oak	F
<i>Quercus phellos</i>	Willow oak	F
<i>Quercus rubra</i>	Red oak	C,F
<i>Quercus</i> spp.	Oak	C,F
<i>Salix babylonica</i>	Babylon weeping willow	F
	Corkscrew willow	F
<i>Schinus molle</i>	California pepper tree	F
<i>Sequoia sempervirens</i>	Redwood, coast	F
<i>Sequoiadendron giganteum</i>	Giant sequoia	F
<i>Swietenia mahogani</i>	Mahogany	F
<i>Tabebuia caraiba</i>	Yellow tab	F
<i>Tilia cordata</i>	Linden, little leaf	C,F
<i>Ulmus parvifolia</i>	Chinese elm	F
<i>Umbellularia californica</i>	California laurel	F
<i>Washingtonia robusta</i>	Mexican fan palm	F

**C = Container Grown**

Scientific Name	Common Name			
<i>Abelia grandiflora</i>	Glossy abelia	F	<i>Juniperus procumbens</i>	Witch-hazel
<i>Acacia redolens</i>	Acacia, prostrate	F	<i>Juniperus prostrata</i>	Nana-dwarf Japanese garden juniper
<i>Agave americana</i>	Century plant	F	<i>Juniperus sabina</i>	Prostrate juniper
<i>Agave macroculmis</i>	Agave	F		Broadmoor juniper
<i>Arctostaphylos stanfordiana</i>	Manzanita, Stanford	F	<i>Juniperus scopulorum</i>	Foemina-Hicks juniper
<i>Astilbe chinensis</i>	Astilbe/false spirea	C,F	<i>Juniperus</i> spp.	Tamariscifolia-Tam juniper
<i>Baccharis pilularis</i>	Coyotebush	F	<i>Juniperus squamata</i>	Emerald green juniper
<i>Berberis thunbergii</i>	Aurea-golden Japanese barberry	C,F		Juniper
	Crimson pygmy barberry	C,F		Blue juniper
	Atropurea-redleaf Japanese barberry	C,F	<i>Justicia brandegeana</i>	Blue star juniper
	Barberry, Japanese	C,F	<i>Justicia spicigera</i>	Parsonii juniper
<i>Bougainvillea</i> spp.	Barbara Karst	F	<i>Kalmia latifolia</i>	Shrimp plant
	California gold	F	<i>Lagerstroemia indica</i>	Honeysuckle, Mexican
	Scarlet O'Hara	F	<i>Leucothoe axillaris</i>	Laurel, mountain
	Texas dawn	F	<i>Leucothoe fontanesiana</i>	Crape myrtle
<i>Buxus microphylla</i>	Littleleaf boxwood	F	<i>Ligustrum amurense</i>	Leucothoe, coast
<i>Buxus microphylla japonica</i>	Boxwood, Japanese	C,F	<i>Ligustrum japonicum</i>	Leucothoe, drooping
<i>Buxus sempervirens</i>	Boxwood, common	C,F		Privet, amur
<i>Callistemon citrinus</i>	Bottlebrush, lemon	C,F	<i>Ligustrum lucidum</i>	Privet, Japanese
<i>Cassia artemisioides</i>	Cassia, feathery	F	<i>Ligustrum ovalifolium</i>	yellow tip ligustrum
<i>Ceanothus americanus</i>	Jerseytea, redroot	C,F	<i>Ligustrum texanum</i>	Privet, glossy
<i>Ceanothus</i> spp.	Wild lilac	C,F		California privet
<i>Chamaecyparis obtusa</i>	Kosteri cypress	F	<i>Ligustrum vicaryi</i>	Howardi privet
	Nana-dwarf Hinoki cypress	F		Wax leaf privet
	Torulosa cypress	F	<i>Livistona chinensis</i>	Privet, golden
<i>Chamaecyparis pisifera</i>	Squarrosa Minima cypress	F	<i>Lonicera fragrantissima</i>	Vicary golden privet
<i>Chamaecyparis pisifera</i> spp.	Filifera-thread cypress	F	<i>Lonicera periclymenum</i>	Chinese fountain palm
<i>Chrysalidocarpus lutescens</i>	Areca palm	F		Winter honeysuckle
<i>Cleyera japonica</i>	Cleyera, Japanese	C,F	<i>Lonicera sempervirens</i>	Flowering woodbine
<i>Cornus alba</i>	Sibirica-Siberian dogwood	F	<i>Mahonia aquifolium</i>	Serotina woodbine
<i>Cornus kousa</i>	Dogwood, kousa	C,F	<i>Myoporum parvifolium</i>	Trumpet honeysuckle
<i>Cornus stolonifera</i>	Flaviramea-yellowtwig dogwood	F	<i>Myrtus communis</i>	Oregon grape
<i>Cotoneaster adpressus</i>	Praecox-early cotoneaster	F	<i>Nandina domestica</i>	Myoporum, prostrate
<i>Cotoneaster apiculatus</i>	Cotoneaster, cranberry	C,F		Myrtle, true
<i>Cotoneaster buxifolius</i>	Cotoneaster, brightbead	F		Compacta-dwarf heavenly bamboo
<i>Cotoneaster congestus</i>	Cotoneaster, Pyrenees	F		Harbour dwarf-heavenly bamboo
<i>Cotoneaster dammeri</i>	Cotoneaster, bearberry	C,F		Heavenly bamboo (Nandina)
<i>Cotoneaster himalayan</i>	Himalayan cotoneaster	F		Nana compacta-heavenly bamboo
<i>Cotoneaster horizontalis</i>	Cotoneaster, rock	C,F	<i>Nerium oleander</i>	Nana purpurea-heavenly bamboo
<i>Cotoneaster lacteus</i>	Cotoneaster, parney	C,F		Woods dwarf-heavenly bamboo
<i>Cotoneaster microphyllus</i>	Cotoneaster, rockspray	F		Hardy red oleander
<i>Cytisus praecox</i>	Hollandia-warminster broom	F	<i>Osmanthus heterophyllus</i>	Oleander
<i>Cytisus scoparius</i>	Lena-Scotch broom	F	<i>Philadelphus</i> spp.	Ruby lace oleander
<i>Dasyliiron wheeleri</i>	Sotol, desert spoon	F	<i>Phoenix roeloenii</i>	Osmanthus, holly-leaf
<i>Deutzia crenata</i>	Nakiana-dwarf deutzia	F	<i>Photinia fraseri</i>	Mockorange
<i>Dodonaea viscosa</i>	Hopseedbush, clammy	F		Pagisy date palm
	Hopseed bush	F	<i>Pieris japonica</i>	Fraser's photinia
<i>Escallonia exoniensis</i>	Escallonia	C,F		Photinia
<i>Euonymus alata</i>	Euonymus, winged	F		Lily-of-the-valley
<i>Euonymus fortunei</i>	Canada gold euonymus	C,F		Snowdrift lily-of-the-valley
	Emerald'n gold euonymus	C,F		Temple bells lily-of-the-valley
	Euonymus, stringybark	C,F	<i>Pittosporum</i> spp.	Valley rose lily-of-the-valley
	Wintercreeper	C,F	<i>Pittosporum tobira</i>	Andromeda
<i>Euonymus japonica</i>	Euonymus, evergreen	C,F		Pittosporum
	Silver king euonymus	F		Green pittosporum
<i>Euonymus kiatschovica</i>	Spreading euonymus	F		Japanese pittosporum
<i>Fatshedera lizei</i>	Fatshedera	C,F	<i>Platycladus orientalis</i>	Tobira
<i>Forsythia intermedia</i>	Forsythia, border	F	<i>Plumbago ariculata</i>	Wheeler's dwarf pittosporum
<i>Gardenia jasminoides</i>	Gardenia	C,F	<i>Podocarpus macrophyllus</i>	Arborvitae, Oriental
<i>Genista pilosa</i>	Woadwaxen	F	<i>Potentilla fragiformis</i>	Blue cape plumbago
<i>Hibiscus rosa-sinesis</i>	Ross Estey-hibiscus	F	<i>Potentilla fruticosa</i>	Yewpine
	Hibiscus, Chinese	F	<i>Protea nerifolia</i>	Cinquefoil
<i>Hibiscus syriacus</i>	Rose of Sharon, Red Bird	F	<i>Pyracantha coccinea</i>	Cinquefoil
	Rose of Sharon, Red Heart	F	<i>Pyracantha fortuneana</i>	Protea
	Rose of Sharon, Woodbridge	F	<i>Pyracantha fortuneana</i>	Firethorn, scarlet
	Rose-of-Sharon (Shrubalthea)	F		Lolendei Monrovia pyracantha
<i>Ilex aquifolium</i>	Balkans holly	F		Monon pyracantha
	Gold coast holly	F		Red elf hybrid pyrcantha
	Holly, English	F		Rutgers hybrid pyracantha
<i>Ilex aquipernyi</i>	San Jose holly	C,F	<i>Pyracantha skoidzumi</i>	Santa Cruz pyracantha
<i>Ilex cornuta</i>	Dwarf Burford holly	C,F	<i>Pyracantha, fortuneana</i>	Victory pyracantha
	Holly, Chinese	C,F	<i>Rhaphiolepis indica</i>	Firethorn, formosa
<i>Ilex crenata</i>	Compacta-dwarf Japanese holly	C,F		Firethorn
	Convexa holly	C,F		Enchantress-Moness rhaphiolepis
	Helleri-Heller's Japanese holly	C,F	<i>Rhaphiolepis ovata</i>	Rhaphiolepis (India hawthorn)
	Holly, Japanese	C,F	<i>Rhipsalidopsis gaertneri</i>	Springtime-Monme rhaphiolepis
<i>Ilex glabra</i>	Nordica-inkberry holly	F	<i>Rhododendron calendulaceum</i>	Roundleaf rhaphiolepis
<i>Ilex meserveae</i>	Blue boy holly	F	<i>Rhododendron campylocarpum</i>	Eastercactus
	Blue girl holly	F	<i>Rhododendron carolinianum x daurium</i>	Flame azalea
	Ebony magic holly	F		Butterfly rhododendron
<i>Ilex vomitoria</i>	Nana-dwarf yaupon holly	C,F	<i>Rhododendron catawbiense</i>	PJM rhododendron
	Pendula-weeping yaupon holly	C,F		
	yaupon holly	C,F		

Scientific Name	Common Name		Scientific Name	Common Name	
<i>Rhododendron forrestii</i> x <i>griersonianum</i>	Rocket rhododendron	C,F	<i>Liriope muscari</i>	Lilac beauty lily turf	C,F
<i>Rhododendron hybrid</i> spp.	Elizabeth rhododendron	F		Majestic lily turf	C,F
	American rhododendron	F		Monroe white lily turf	C,F
	English Roseum rhododendron	F		Silvery sunproof lily turf	C,F
	Nova Zembla rhododendron	F		Variegated liriope lily turf	C,F
<i>Rhododendron impeditum</i>	Scintillation rhododendron	F	<i>Lonicera japonica</i>	Big blue lily turf	C,F
<i>Rhododendron indica</i>	Rhododendron	F	<i>Mesembryanthemum crystallinum</i>	Honeysuckle, Japanese	F
	Formosa azalea	C,F	<i>Ophiopogon japonicus</i>	Ice plant (see label)	F
<i>Rhododendron kerume</i>	Waucabusa azalea	C,F	<i>Osteospermum fruticosum</i>	Mondo grass	F
	Coral bells azalea	C,F	<i>Pachysandra terminalis</i>	Daisy, trailing African	F
	Hino crimson azalea	C,F	<i>Sedum brevifolium</i>	Japanese spurge	F
	Hino pink azalea	C,F	<i>Vinca major</i>	Stonecrop	F
	Snow azalea	C,F	<i>Vinca minor</i>	Periwinkle, bigleaf	F
<i>Rhododendron maximum</i>	Rhodie max (rosebay)	C,F		Periwinkle, dwarf	F
<i>Rhododendron mucronulatum</i>	Rhododendron	F	<b>Flowers</b>		
<i>Rhododendron satsumi</i>	Gumpo pink azalea	F	<b>Recommended Treatment Method</b>		
	Higasa azalea	F	<b>F = Field Crop</b>		
<i>Rhododendron</i> spp.	Azalea	C,F	<b>C = Container Grown</b>		
	Rhododendron	C,F			
<i>Rhododendron</i> spp. <i>hybrids</i>	Carror azalea	C,F	<b>Scientific Name</b>	<b>Common Name</b>	
	Girard Roberta azalea	F	<i>Achillea</i> spp.	Yarrow	F
	Golden flare exbury azalea	F	<i>Antirrhinum majus</i>	Snapdragon	F
<i>Rhus lancea</i>	Sumac, African	C,F	<i>Caladium bicolor</i>	Caladium, fancy leafed	F
<i>Rosa rugosa</i>	Ramanas rose	F	<i>Chrysanthemum coccineum</i>	Daisy, painted	F
<i>Rosmarinus officinalis</i>	Rosemary	F	<i>Chrysanthemum maximum</i>	Daisy, Shasta	F
<i>Spiraea vanhouttei</i>	Bridal wreath	F	<i>Chrysanthemum morifolium</i>	Chrysanthemum	F
<i>Syringa vulgaris</i>	Lilac, common	C,F	<i>Cladium bicolor</i>	Fancy-leaved caladium	F
<i>Syzygium paniculata</i>	Brush cherry	C,F	<i>Coreopsis lanceolata</i>	Coreopsis	F
<i>Taxus cuspidata</i>	Yew, Japanese	F	<i>Dianthus barbatus</i>	Sweet William	F
<i>Taxus media</i>	Yew	F	<i>Dicentra spectabilis</i>	Bleeding heart	C,F
<i>Thuja occidentalis</i>	Arborvitae, American	C,F	<i>Dimorphotheca</i> spp.	Marigold, cape	F
	Emerald arborvitae	F	<i>Echinacea purpurea</i>	Coneflower, purple	F
	Globosa-globe arborvitae	F	<i>Geum quellyon</i>	Geum	F
	Little giant-dwarf arborvitae	F	<i>Gladiolus hortulanus</i>	Gladiolus	F
	Nigra-dark American arborvitae	F	<i>Gypsophila paniculata</i>	Baby's breath	F
	Pyramidalis arborvitae	F	<i>Impatiens wallerana</i>	Impatiens (Busy lizzie)	F
	Rheingold arborvitae	F	<i>Iris</i> spp.	Iris, bearded	F
	Woodwardii arborvitae	F	<i>Liatris spicata</i>	Blazing star	C,F
<i>Thuja orientalis</i>	Aureus nana-dwarf golden arborvitae	F	<i>Pelargonium hortorum</i>	Geranium	F
	Minima glauca-dwarf arborvitae	F	<i>Petunia</i> spp.	Petunia	F
<i>Thuja plicata</i>	Red Cedar, Western	F	<i>Portulaca grandiflora</i>	Moss, rose	F
<i>Trachelospermum jasminoides</i>	Star jasmine, Chinese	F	<i>Ranunculus asiaticus</i>	Ranunculus, Persian	F
<i>Veitchia merrilli</i>	Christmas palm	F	<i>Rosa</i> spp.	Rose	F
<i>Viburnum davidii</i>	David viburnum	F	<i>Rudbeckia hirta</i>	Daisy, gloriosa (black-eyed Susan)	F
<i>Viburnum japonicum</i>	Viburnum	F	<i>Salvia</i> spp.	Salvia (Sage)	F
<i>Viburnum opulus sterile</i>	Common snowball viburnum	F	<i>Stokesia laevis</i>	Aster, stokes	F
<i>Viburnum plicatum tomentosum</i>	Doublefile viburnum	F	<i>Strelitzia reginae</i>	Bird of paradise	F
<i>Viburnum setigerum</i>	Tea viburnum	F	<i>Tagetes</i> spp.	Marigold	F
<i>Viburnum suspensum</i>	Viburnum, Sandankwa	F	<i>Viola wittrockiana</i>	Pansy	F
<i>Viburnum tinus</i>	Viburnum, Laurustinus	C,F	<i>Zinnea elegans</i>	Zinnia, common	F
	Compactum-spring bouquet viburnum	F	<b>Non-bearing Trees &amp; Vines</b>		
<i>Viburnum tinus compactum</i>	Spring bouquet viburnum	F	<b>Recommended Treatment Method</b>		
<i>Viburnum trilobum compactum</i>	Dwarf cranberry bush	F	<b>F = Field Grown</b>		
<i>Viburnum x pragensis</i>	Viburnum	F	<b>C = Container Grown</b>		
<i>Weigela florida</i>	Bristol ruby weigela	F	almond		F
	Java red weigela	F	apple		F
	Minuet weigela	F	apricot		F
	Weigela, oldfashioned	F	avocado		F
<i>Xylosma congestum</i>	Xylosma	F	blackberry		F
<i>Yucca elata</i>	Yucca, soaptree	C,F	blueberry		F
<i>Yucca recurvifolia</i>	Yucca, pendulous	F	boysenberry		F
			cherry, sour		F
			cherry, sweet		F
			currant		F
			dewberry		F
			elderberry		F
			fig		F
			filbert		F
			gooseberry		F
			grape, American		F
			grape, European		F
			grapefruit		F
			kiwi		F
			Kumquat		C
			lemon		F
			loganberry		F
			macadamia nut		F
			nectarine		F
			olive		F
			orange		C
			peach		F
			pear		F
			pecan		C,F
			pistachio		F
			plum		F
			pomegranate		F
			prune		F
			raspberry		F
<b>Groundcovers/Perennials</b>					
<b>Recommended Treatment Method</b>					
<b>F = Field Grown</b>					
<b>C = Container Grown</b>					
<b>Scientific Name</b>	<b>Common Name</b>				
<i>Agapanthus africanus</i>	Lily-of-the-Nile	C,F			
<i>Ajuga</i> spp.	Carpet bugle	F			
<i>Arctotheca calendula</i>	Cape weed	F			
<i>Campanula elatines</i>	Bellflower	C,F			
<i>Carpobrotus edulis</i>	Ice plant, largeleaf (see label)	F			
<i>Clytostoma callistegioides</i>	Trumpet vine, violet	C,F			
<i>Cortaderia selloana</i>	Pampas grass	F			
<i>Delosperma alba</i>	White iceplant	F			
<i>Drosanthemum floribundum</i>	Trailing rosea iceplant	F			
<i>Festuca ovina glauca</i>	Blue fescue	F			
<i>Gazania rigens leucolaena</i>	Gazania, trailing	F			
<i>Gazania</i> spp.	Gazania	F			
<i>Hedera canariensis</i>	Ivy, Algerian	F			
<i>Hedera helix</i>	Ivy, English	F			
<i>Hemerocallis</i> spp.	Daylily	C,F			
<i>Hosta lancifolia</i>	Albo-marginata hosta	C,F			
<i>Hosta</i> spp.	Lily, plantain	C,F			
<i>Hypericum</i> spp.	St. Johnswort	C,F			
<i>Lampranthus spectabilis</i>	Trailing iceplant	F			
<i>Liriope gigantea</i>	White lily turf	F			

walnut, black  
walnut, English

F  
F

<sup>†</sup>Non-bearing plants are defined as those which will not bear fruit for at least one year after treatment.

### Ornamental Bulbs

Surflan A.S. may be applied for control of susceptible annual weeds in ornamental bulbs, e.g., bulbous iris, daffodil (narcissus), hyacinth, and tulip. Apply Surflan A.S. to the soil surface 2-4 weeks after planting, but prior to the emergence of annual weeds. For fall planted bulbs, apply Surflan A.S. again in late winter or early spring to weed-free soil surfaces.

Broadcast Application Rates			
Time of Application	Soil Texture	Surflan A.S.	
		quarts/acre	fl oz/1000 sq ft
Fall	Coarse	0.75	0.5
Fall	Medium and Fine	1.5	1.0
Feb.-March	All Soil Textures	0.75	0.5

### Special Use Precautions:

Do not apply to tulip plants that have emerged to a height greater than  $\frac{3}{4}$  inch.

Do not apply to gladioli corms prior to emergence or less than one (1) inch in diameter.

### Shadehouse Areas

Surflan A.S. may be applied to drainage areas under benches in open shadehouse-type structures where the natural flow of air is unimpeded. Do not apply in enclosed greenhouses or in enclosed shadehouse-type structures. Do not apply within 3 weeks prior to enclosure of greenhouse or poly-type structures.

### Christmas Tree Plantations

#### Surflan A.S. Alone

Apply Surflan A.S. as a directed spray to the soil surface or as an overtop spray to established plantings of field grown Christmas tree species, including fir (*Abies* spp.), pine (*Pinus* spp.), and spruce (*Picea* spp.). Follow all instructions provided in the "General Information" section of this label.

Broadcast Application Rates		
Length of Control	Surflan A.S.	
	quarts/acre	fl oz/1000 sq ft
2-4 months	2	1.5
4-8 months	4	3

### Tank Mix Combinations

Tank mix combinations of Surflan A.S. plus other labeled herbicides may be used as directed or overtop sprays in established Christmas tree plantings. When applied according to use directions, these tank mixes will provide control of susceptible weed species listed on the respective product labels. Refer to tank mix product labels for specific use directions, precautions, and limitations before use.

**Surflan A.S. Plus Roundup:** Apply tank mix combinations of Surflan A.S. plus Roundup only as directed sprays in Christmas tree plantings. When applied according to use directions, Surflan A.S. plus Roundup will provide postemergence control of susceptible weed species listed on the label for Roundup and residual preemergence control of susceptible weed species listed on the label for Surflan A.S. Refer to the label for Roundup for specific use directions, precautions, and limitations before use.

### Special Use Precautions:

Do not apply to Douglas-fir (*Pseudotsuga menziesii*). Do not apply to seedbeds or seedling transplant beds. Apply only to established plants that have been transplanted into their final growing location for a sufficient period of time to allow the soil to be firmly settled around the roots from packing and rainfall or irrigation.

### Noncropland Areas and Industrial Sites

#### Noncropland Areas—Tank Mix Combinations

Tank mix combinations of Surflan A.S. plus Roundup and many other labeled herbicides may be used to control undesirable vegetation in noncropland areas such as roadsides, rights-of-way, etc. When applied according to use directions, these tank mixes will provide control of susceptible weed species listed on the respective product labels. Refer to tank mix product labels for specific use directions, precautions, and limitations before use.

### Broadcast Application Rates

Length of Control	Surflan A.S.	
	quarts/acre	fl oz/1000 sq ft
2-4 months	2	1.5
4-8 months	4	3
8-12 months	6	4.5

### Industrial Sites—Tank Mix Combinations

Tank mix combinations of Surflan A.S. plus Roundup, Spike\* herbicide, and many other labeled herbicides may be used as overtop sprays to control existing vegetation on industrial sites such as utility substations, highway guard rails, sign posts, and delineators. When applied according to use directions, these tank mixes will provide control of susceptible weed species listed on the respective product labels. Refer to tank mix product labels for specific use directions, precautions, and limitation before use.

### Warm Season Turfgrasses

Surflan A.S. may be applied as a preemergence treatment for control of annual grasses and certain broadleaf weeds in established warm season turf including bahiagrass, bermudagrass, buffalograss, centipedegrass, St. Augustinegrass, zoysiagrass, and established tall fescue growing in warm season areas. Established turf is defined as a dense turf having a well-anchored root system and healthy, vigorous top growth. Use Surflan A.S. only as a part of a total turf management program that includes good fertilization practices.

Surflan A.S. may be tank mixed with Gallery\* herbicide (California registration pending) and applied preemergence to broaden the spectrum of broadleaf weed control in warm season turf. Refer to the label for Gallery for specific use directions, precautions, and limitations before use.

Any cultural practices that disturb the soil, such as aeration or verticutting, should be done prior to application of Surflan A.S.

Surflan A.S. will not control emerged weeds. Successful preemergence control of weeds listed on this label requires that Surflan A.S. be applied prior to weed germination and be activated by at least one-half ( $\frac{1}{2}$ ) inch of rainfall or irrigation within 21 days of application.

Surflan A.S. may injure turf that is not well-established or is stressed or weakened due to unfavorable winter climatic conditions, drought, nematodes, or other factors which damage or weaken turf root systems. Apply Surflan A.S. only to healthy, well-established turf that has a well-anchored root system.

Do not apply Surflan A.S. in the spring or early summer to tall fescue turfgrass reseeded the previous fall. In such cases, apply Balan\* 2.5G granular herbicide at 60-80 pounds per acre in early summer (Round 1) and Surflan A.S. at 1.5 quarts per acre approximately eight weeks later (Round 2). Do not apply Surflan A.S. at the single application rate (2 quarts per acre) to established tall fescue; in such cases, apply 1.5 quarts per acre of Surflan A.S. in an initial application, followed by a second application of 1.5 quarts per acre 8-10 weeks later.

In bermudagrass areas that have been overseeded with winter grasses, a spring application of Surflan A.S. will thin the overseeded grasses.

### Annual Grasses Controlled by Surflan A.S.

#### Summer Annuals:

**Common Name**  
barnyardgrass (watergrass)  
crabgrass, large  
crabgrass, smooth  
crabgrass  
crowfootgrass  
foxtail, bristlegrass  
foxtail, giant  
foxtail, green (pigeongrass)  
foxtail, robust  
foxtail, yellow  
goosegrass (silver crabgrass)  
Johnsongrass (seedling only)  
ryegrass, Italian  
sandbur, field

**Scientific Name**  
*Echinochloa crus-galli*  
*Digitaria sanguinalis*  
*Digitaria ischaemum*  
*Digitaria* spp.  
*Dactyloctenium aegyptium*  
*Setaria magna*  
*Setaria faberi*  
*Setaria viridis*  
*Setaria robusta*  
*Setaria glauca*  
*Eleusine indica*  
*Sorghum halepense*  
*Lolium multiflorum*  
*Cenchrus incertus*

#### Winter Annuals:

**Common Name**  
bluegrass, annual

**Scientific Name**  
*Poa annua*

### Annual Broadleaf Weeds Controlled by Surflan A.S.

#### Summer Annuals:

**Common Name**  
carpetweed  
knotweed, prostrate  
purslane, common

**Scientific Name**  
*Mollugo verticillata*  
*Polygonum aviculare*  
*Portulaca oleracea*

#### Winter Annuals:

**Common Name**  
chickweed, common  
henbit

**Scientific Name**  
*Stellaria media*  
*Lamium amplexicaule*

### Broadleaf Weeds Suppressed by Surflan A.S.

**Common Name**  
groundsel, common  
spurge, prostrate  
woodsorrel, yellow

**Scientific Name**  
*Senecio vulgaris*  
*Euphorbia humistrata*  
*Oxalis stricta*

### Application Rates, Frequency, and Timing of Application

Surflan A.S. can be applied in the spring for summer annual grass and broadleaf weed control, and in the fall for annual bluegrass (*Poa annua*) and winter annual broadleaf weed control.

#### 1. Summer Annual Grasses and Broadleaf Weeds

**Single Application Program:** Apply 2 quarts per acre of Surflan A.S. in late winter or early spring, prior to the onset of conditions favorable for annual weed germination.

**Split Application Program:** As an alternative to a single application program, Surflan A.S. may be applied in a split application. This program is desirable when the initial application is made well in advance of weed germination and where weed control is desired for a longer period of time. Apply 1.5 quarts per acre of Surflan A.S. in an initial application, followed by a second application of 1.5 quarts per acre 8-10 weeks later.

The second treatment of the split application may follow application of a different preemergence grass herbicide in place of the initial application of Surflan A.S.

## **2. Annual Bluegrass (*Poa annua*) and Winter Annual Broadleaf Weeds**

In areas of heavy annual bluegrass infestation, its elimination will result in temporary thinning of turfgrass cover. Proper fertilization, irrigation, and soil incorporated reseeding should be employed to speed the restoration of desirable turfgrass cover in areas previously occupied by annual bluegrass (see section on reseeding).

Apply Surflan A.S. as a preemergence treatment in late summer or early fall, prior to the expected germination period for annual bluegrass and winter annual broadleaf weeds. If annual bluegrass infestation is severe and its elimination will result in thinning of turfgrass cover, apply Surflan A.S. at 1.5 quarts per acre. If thinning of turfgrass cover is not a potential problem, Surflan A.S. may be applied at 2 quarts per acre.

## **Broadcast Application Rates**

Surflan A.S.	
quarts/acre	fl oz/1000 sq ft
1.5	1
2	1.5

## **Weed Control in Florida**

In Florida, apply 1.5 quarts per acre of Surflan A.S. three times per year, or every 90-100 days, in the fall, early spring, and early summer. Do not apply more than 1.5 quarts per acre of Surflan A.S. in any single application.

## **Application Equipment**

Apply Surflan A.S. evenly over the turfgrass area. Avoid spray pattern skips and overlaps that may result in incomplete coverage or over-application. For best results, use application equipment designed to uniformly broadcast liquid herbicides. Calibrate application equipment prior to use, according to manufacturer's directions. Check equipment frequently to make sure it is working properly and distributing spray uniformly.

## **Reseeding**

Herbicides that control annual weeds may also affect establishment of desirable turfgrass seedlings. Reseeding should be delayed for at least 90-120 days following application of Surflan A.S. When reseeding, it is essential that proper cultural practices such as soil cultivation and seedbed preparation, irrigation, and fertilization be followed. For satisfactory reseeding results following use of Surflan A.S., the seeding rate should be increased and equipment designed to place seed in full contact with soil (such as the Rogers Aero Seeder) should be employed.

## **Special Use Precautions:**

To avoid possible injury, do not apply Surflan A.S. to:

- Cool season turfgrass species.
- Golf course putting greens and tees or lawns containing dichondra or cool season turfgrass species.
- Newly sprigged or sodded areas of bermudagrass, St. Augustinegrass, centipedegrass, or zoysiagrass until these turfgrasses are well-established and have well-anchored root systems.
- Newly hydromulched areas of bermudagrass until such areas are well-established.
- Bermudagrass variety "Sun Turf" when tank mixed with atrazine.

## **WARRANTY DISCLAIMER**

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

## **Inherent Risks of Use**

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperature, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. All such risks shall be assumed by buyer.

## **Limitation of Remedies**

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or

2. Replacement of amount of product used

Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. In no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the "Warranty Disclaimer" above and this "Limitation of Remedies" cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the "Warranty Disclaimer" or this "Limitation of Remedies" in any manner.

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