# 'tlan' XI

**HERBICIDE** 

Contains oryzalin, the active ingredient in Surflan® herbicides.

A selective preemergence herbicide for control of certain annual grasses and broadleaf weeds in:

- Container grown ornamentals
- Landscape ornamentals
- Nursery stock
- Ground covers
- Established flowers
- Ornamental bulbs
- Non-bearing fruit and nut trees and non-bearing vineyards

- Non-bearing berries
- Christmas tree plantations
- Non-cropland
- Established tall fescue and warm season turf (including bahiagrass, bermudagrass, buffalograss, centipedegrass, St. Augustinegrass, and zovsiagrass)

# **ACTIVE INGREDIENTS:**

benefin: <i>N</i> -butyl- <i>N</i> -ethyl- $\alpha$ , $\alpha$ , $\alpha$ -trifluoro-2,6-dinitro- $p$ -toluidine	1.0%
oryzalin: 3,5-dinitro- $N^4$ , $N^4$ -dipropylsulfanilamide	1.0%
OTHER INGREDIENTS	98.0%
TOTAL	100.0%
Contains 1 pound active ingredient per 50 pound bag	

EPA Rea. No. 70506-45

# **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.)

# 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 center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For emergency medical assistance, call the Rocky Mountain Poison Control Center at 1-866-673-6671.

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300.

Notice: Read the entire label. Use only according to label directions. Before using this product, read the Conditions of Sale and Limitation of Warranty and Liability at end of label booklet. If terms are unacceptable, return at once unopened.

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



United Phosphorus, Inc. 630 Freedom Business Center, Suite 402 King of Prussia, PA 19406 • 1-800-438-6071

Net Weight:

**Pounds** 

# Precautionary Statements Hazards to Humans and Domestic Animals CAUTION

Causes moderate eye irritation. Avoid contact with eyes or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

# Personal Protective Equipment (PPE)

# Applicators, loaders and other handlers must wear:

- Long-sleeved shirt and long pants
- · Shoes plus socks

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

### **User Safety Recommendations**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then 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 pesticide is toxic to fish and aquatic invertebrates. Do not apply directly to water, or 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. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

# **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 or pets, 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 24 hours. **Exception:** If the product is soil-injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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 made of any waterproof material
- · Shoes plus socks

# **Non-Agricultural 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.

**Entry Restrictions for Non-WPS Uses:** Do not enter or allow other people or pets to enter the treated area until dusts have settled. If watering-in is required after the application, except for those people involved in the watering-in, do not enter or allow other people or pets to enter the treated areas until the watering-in is complete and the surface is dry.

# Storage and Disposal

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

**Pesticide Storage:** Store in original container only. In case of leak or spill, contain material 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:** Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Then offer for recycling if available, or dispose of empty bag 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 XL 2G herbicide is a preemergence herbicide for control of certain annual grasses and broadleaf weeds in container and landscape ornamentals, nursery stock, ground covers, established tall fescue and warm season turf, established flowers, ornamental bulbs, non-bearing fruit and nut trees and non-bearing vineyards, non-bearing berries, Christmas tree plantations, non-cropland and established tall fescue and warm season turf (including bahiagrass, bermudagrass, buffalograss, centipedegrass, St. Augustinegrass, and zoysiagrass). Apply Surflan XL 2G prior to germination of target weeds or immediately after cultivation. Length of weed control will vary with rate of Surflan XL 2G applied, weed population, potting media or soil conditions, temperature, watering regime, and other factors. Following application, user should monitor and observe level of weed control over time to determine when additional applications may be needed.

# General Use Precautions and Restrictions Do not aerially apply this product.

Do not graze or feed forage from treated areas to livestock.

<u>Landscape and field grown ornamentals:</u> maximum number of applications per year is 2.

<u>Ornamental bulbs:</u> for fall application to coarse soils – maximum number of applications per year is 2.

<u>Ornamental bulbs:</u> applications February through March, all soils – maximum number of applications per year is 3.

<u>Christmas tree plantations:</u> maximum number of applications per year is 2. <u>Noncrop areas:</u> maximum number of applications per year is 2.

Surflan XL 2G does not control established weeds. Existing weeds should be controlled by cultivation or with postemergence herbicides. Weed residues, prunings and trash should be removed or thoroughly mixed into soil prior to treatment. Soil should be in good condition and free of clods at the time of application. When applied to turf, this product must be watered in as soon as possible after application to dissolve the granules. A single rainfall or irrigation of 1/2 inch or more is required after product application.

For other applications, a single rainfall or sprinkler irrigation of 0.5 inches or more, or flood irrigation is required to activate Surflan XL 2G. If rainfall or irrigation has not occurred within 21 days of application and tillage is possible, Surflan XL 2G may be activated using cultivation equipment capable of uniformly mixing the herbicide into the upper 1-2 inches of soil. Failure to activate Surflan XL 2G may result in erratic weed control. Do not apply when wind conditions favor drift of Surflan XL 2G granules from the target area.

Users who wish to use Surflan XL 2G on plant species not recommended on this label may determine the suitability for such uses 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 to 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 XL 2G on plant species not recommended on this label.

# **Application Directions**

Apply Surflan XL 2G using a drop or rotary-type spreader designed to apply granular herbicides or insecticides. Calibrate application equipment prior to use according to manufacturer's directions. Check frequently to be sure equipment is working properly and distributing granules uniformly. Do not use spreaders that apply material in narrow concentrated bands. Avoid skips or overlaps as poor weed control or crop injury may occur. More uniform application may be achieved by spreading half of the required amount of product over the area and then applying the remaining half in swaths at right angles to the first.

### Application Techniques for Applying Surflan XL 2G

- When using a drop-type spreader, a splashboard mounted under the hopper will provide more even granule distribution.
- A chain fastened to the side of the spreader and allowed to drag on the soil surface can be used to mark the edge of the treated swath and help prevent skips or overlaps.
- For treating smaller areas or rows of nursery stock or ornamental beds, a hand held or push-type rotary applicator such as a whirlybird or cyclone unit is recommended. For hand held units, walk and turn the crank at a constant rate of speed.
- A shaker-type applicator made from a small container with holes punched in the bottom is recommended for small, difficult to treat areas. Carefully measure the amount of product needed to avoid overapplication.

# **Approved Uses**

Established† Container Grown Ornamentals, Established Tall Fescue and Warm Season Turfgrasses, Landscape Ornamentals, Nursery Stock, Ground Covers, Flowers, Ornamental Bulbs, Non-bearing Fruit and Nut Trees and Non-bearing Vineyards, Non-bearing Berries, Christmas Tree Plantations, and Non-cropland

Surflan XL 2G is recommended as a preemergence treatment for control of certain annual grasses and broadleaf weeds in container grown ornamentals, landscape ornamentals, nursery stock, ground covers, established tall fescue, warm season turfgrasses, established flowers, ornamental bulbs, non-bearing fruit and nut trees and non-bearing vineyards, non-bearing berries, Christmas tree plantations, and non-cropland. Apply Surflan XL 2G prior to germination of target weeds, or immediately after cultivation.

**†Definition of established plantings:** Apply only to established plantings. Established plants are defined as those 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. Do not apply to seedbeds or seedling transplant beds.

### **Broadcast Application Rates**

	Surflan XL 2G		Minimum Time Between	Total Amount Allowed
Labeled Use Site	(lb./acre)	(lb./1,000 sq. ft.)	Applications (months)	Per Year (lb./acre)
• Landscape Ornamentals	200	4.6	2	400
• Field-grown and containergrown ornamentals	300	6.9	4	600

**Note:** Refer to the "General Information" section of this label for general use precautions and information on application.

# **Special Use Precautions**

To avoid possible plant injury, do not apply Surflan XL 2G to:

- plants or areas in greenhouses or other enclosed structures.
- plants that will bear fruits, berries or nuts within 12 months of application.
- nursery seedbeds or forest or Christmas tree seedling 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 the likelihood of runoff onto lawn areas containing dichondra or cool season turfgrass species exists.

 Do not apply Surflan XL 2G to the following plant species or injury may occur:

Begonia spp. (begonia)

Coleus hybridus (coleus)

Deutzia gracilis (slender deutzia)

Pseudotsuga menziesii (Douglas-fir)

Thuja occidentalis 'Techny' (Techny arborvitae)

Tsuga canadensis (eastern hemlock)

**Ice Plant:** When establishing unrooted ice plant (*Mesembryanthemum crystallinum* and *Carpobrotus edulis*) on coarse soils, do not exceed the 200 lbs./acre rate of Surflan XL 2G or crop injury may occur. After the ice plant is well established, a second application may be made.

Unlisted plant species: Users who wish to use Surflan XL 2G on plant species not recommended on this label may determine the suitability for such uses 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 to 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 XL 2G on plant species not recommended on this label.

# Weeds Controlled or Suppressed by Surflan XL 2G

Weeds controlled when Surflan XL 2G is applied at a rate of 200 to 300 pounds per acre (4.6 to 6.9 pounds per 1,000 sq. ft.).

### **Annual Grasses**

Common Name	Scientific Name
barley, little	Hordeum pusillum
barnyardgrass	Echinochloa crus-galli
crabgrass	Digitaria spp.
crowfootgrass	Dactyloctenium aegyptium
cupgrass, southwestern	Eriochloa gracilis
foxtail	Setaria spp.
goosegrass	Eleusine indica
johnsongrass (seedling only)	Sorghum halepense
junglerice	Echinochloa colonum
lovegrass, Mexican	Eragrostis mexicana
lovegrass, orcutt	Eragrostis orcuttiana
oat, wild	Avena fatua
panicum, browntop	Panicum fasciculatum
panicum, fall	Panicum dichotomiflorum
panicum, Texas	Panicum texanum
ryegrass, Italian	Lolium multiflorum
sandbur, field	Cenchrus incertus
signalgrass	Brachiaria spp.
sprangletop, red	Leptochloa filiformis
witchgrass	Panicum capillare

### **Broadleaf Weeds**

Common Name	Scientific Name
bittercress	Cardamine oligosperma
carpetweed	Mollugo verticillata
chickweed, common	Stellaria media
fiddleneck, coast	Amsinckia intermedia
filaree, redstem	Erodium cicutarium
filaree, whitestem	Erodium moschatum
groundsel, common	Senecio vulgaris
henbit	Lamium amplexicaule
knotweed, prostrate	Polygonum aviculare
lambsquarters, common	Chenopodium album
pigweed	Amaranthus spp.
puncturevine	Tribulus terrestris
purslane, common	Portulaca oleracea
pusley, Florida	Richardia scabra
rocket, London	Sisymbrium irio
rockpurslane, desert	Calandrinia ciliata
shepherdspurse	Capsella bursa-pastoris
spurge, prostrate	Euphorbia humistrata
woodsorrel, yellow	Oxalis stricta

In addition to the weeds controlled, the following weeds will be partially controlled or suppressed at 200 to 300 pounds per acre (4.6 to 6.9 pounds per 1,000 sq ft).

Common Name	Scientific Name
horseweed	Conyza canadensis
ladysthumb	Polygonum persicaria
lettuce, prickly	Lactuca serriola
mallow, common	Malva neglecta
milkweed, climbing	Sarcostemma cynanchoides
morningglory	<i>lpomoea</i> spp.
mustard, black	Brassica nigra
mustard, wild	Brassica kaber
nightshade, black	Solanum nigrum
ragweed, common	Ambrosia artemisiifolia
smartweed	Polygonum pensylvanicum
sowthistle, annual	Sonchus oleraceus
spurge, spotted	Euphorbia maculata
teaweed (prickly sida)	Sida spinosa
velvetleaf	Abutilon theophrasti
wheat, volunteer	<i>Triticum</i> spp.

# Surflan XL 2G May Be Used On The Following **Established Plant Species:** (Note limitations on recommended treatment methods.)

treatment methods.) Trees		Scientific Name/ Common Name	C = Container Gro F = Field Grown
		Chamaedorea elegans	i = i iciu diuwii
Scientific Name/	Recommended Treatment Method: C = Container Grown	Parlor palm  Cornus florida Flowering dogwood	F F
Common Name	F = Field Grown	Crupaniopsis anacardioides	ı
Abies balsamea Balsam fir	F	Carrot wood  Cryptomeria japonica	F
Abies concolor White fir	F	Japanese cryptomeria  Cupressus glabra	C,F
Abies fraseri Fraser fir	F	Arizona cypress	C,F
Abies grandis Grand fir	F	Cupressus sempervirens Italian cypress	C,F
Abies lasiocarpa Alpine fir	F	Elaeagnus angustifolia Russian olive	C,F
Abies veitchi Veitch fir	, E	Eucalyptus cinerea Mealy eucalyptus Silver dollar eucalyptus	F F
Abutilon hybridum Albus flowering maple	F	Eucalyptus camaldulensis Red gum eucalyptus	F
Luteus flowering maple Roseus flowering maple Tangerine flowering maple	F F	Eucalyptus nicholii Narrow-leaved eucalyptus	F
Vesuvius red flowering maple  Acer spp.	F	Eucalyptus sideroxylon Red ironbark eucalyptus	F
maple  Arecastrum romanzoffianum	F	<i>Ficus benjamina</i> Ficus	F
Queen palm  Betula papyrifera	F	<i>Fraxinus</i> spp. Ash	F
Paper birch  Betula nigra	F	Ginkgo biloba Maidenhair tree	C,F
River birch  Betula pendula	F	Gleditsia triacanthos Honey locust	F
White birch	F	Heteromeles arbutiflora Toyon	F
Bucida buceras Black olive	F	<i>Juniperus virginiana</i> Eastern redcedar	F
Ceratonia siliqua Carob Cercidium floridum	F	<i>Kalmia latifolia</i> Mountain laurel	F
Blue palo verde	F	Koelreuteria paniculata goldenrain tree	F
Cercis canadensis Redbud	C,F	<i>Liquidambar styraciflua</i> American sweet gum	C,F
Chamaecyparis lawsoniana Lawson falsecypress	F	<i>Magnolia grandiflora</i> Southern magnolia	F
Chamaecyparis obtusa spp. Filicoides-fernspray cypress Gracilis-slender Hinoki cypress	F F	<i>Malus</i> spp. Crabapple	F
Chamaecyparis pisifera Sawara-false cypress	F	<i>Morus alba</i> White mulberry	F
Squarrosa-moss cypress Chamaedorea cataractarum	F	<i>Olea euripaea</i> Olive	F
Cat palm  Chamaedorea costaricana	F	<i>Picea abies</i> Norway spruce	F
Palm	F	<i>Picea engelmanni</i> Engelmann spruce	F

# Trees (continued)

Scientific Name/

Recommended

**Treatment Method:** 

C = Container Grown

# Trees (continued)

# **Ornamental Shrubs**

Scientific Name/ Common Name	Recommended Treatment Method: C = Container Grown F = Field Grown	Scientific Name/ Common Name	Recommended Treatment Method: C = Container Grown F = Field Grown
Picea glauca		Abelia grandiflora	
Conica-dwarf Alberta spruce	F F	Glossy abelia	F
White spruce	r	Acacia redolens	F
Picea mariana Black spruce	F	Prostrate acacia	Г
Picea pungens spp.	ı	Agave americana Century plant	F
Glauca-Colorado blue spruce	F	Agave macroculmis	•
Hoopsii-Hoop's blue spruce	F	Agave	F
Koster-Koster blue spruce	F	Arctostaphylos stanfordiana	
<i>Pinus</i> spp. Pine	C,F	Stanford manzanita	F
Platanus occidentalis	<b>С</b> ,Г	Astilbe chinensis	0.5
American sycamore	F	False spirea	C,F
Platanus racemosa	•	Baccharis pilularis Coyotebush	F
California sycamore	F	Berberis thunbergii	ı
Podocarpus spp.		Atropurea-Redleaf Japanese barberry	C,F
Podocarpus	F	Aurea golden Japanese barberry	C,F
Populus deltoides	_	Crimson pygmy barberry	C,F
Cottonwood	F	Bougainvillea spp.	_
Prunus caroliniana Carolina laurelcherry	F	Barbara Karst California Gold	F F
Prunus laurocerasus	Γ	Scarlet O'Hara	F
English laurelcherry	F	Texas Dawn	F
Prunus mahaleb	•	Buxus microphylla	
Mahaleb cherry	F	Japonica-Japanese boxwood	C,F
Prunus yedoensis		Littleleaf boxwood	F
Yoshino flowering cherry	F	Buxus sempervirens	0.5
Quercus spp.		Common boxwood  Callistemon citrinus	C,F
Oak	C,F	Lemon bottlebrush	C,F
Salix babylonica Babylon weeping willow	F	Ceanothus spp.	0,1
Corkscrew willow	F	Wild lilac	C,F
Schinus molle	·	Chamaecyparis obtusa spp.	
California pepper tree	F	Kosteri cypress	F
Sequoiadendron giganteum		Nana-dwarf Hinoki cypress	F F
Giant sequoia	F	Torulosa cypress Chamaecyparis pisifera	Г
Sequoia sempervirens	_	Filifera-thread cypress	F
Coast redwood	F	Squarrosa minima-dwarf moss cypress	F
Swietenia mahogani Mahogany	F	Chrysalidocarpus lutescens	
Tabebuia caraiba	ı	Areca palm	F
Yellow tab	F	Cleyera japonica	
Tilia cordata		Japanese cleyera	C,F
Littleleaf linden	C,F	Cotoneaster adpressus Praecox-early cotoneaster	F
Thuja plicata		Cotoneaster apiculatus	Г
Western redcedar	F	Cranberry cotoneaster	C,F
Ulmus parvifolia	г	Cotoneaster buxifolius	<del>-</del> ;-
Chinese Elm	F	Brightbead cotoneaster	F
Umbellularia californica California laurel	F	Cotoneaster congestus	
Washingtonia robusta	ı	Pyrenees cotoneaster	F
Mexican fan palm	F	Cotoneaster dammeri	0.5
·		Bearberry cotoneaster	C,F

# Ornamental Shrubs (continued)

# Ornamental Shrubs (continued)

Scientific Name/ Common Name	Recommended Treatment Method: C = Container Grown F = Field Grown	Scientific Name/ Common Name	Recommended Treatment Method: C = Container Grown F = Field Grown
Cotoneaster himalayan		Hibiscus syriacus	
Himalayan cotoneaster	F	Rose of Sharon, Red Bird	F
Cotoneaster horizontalis		Rose of Sharon, Red Heart	F
Rock cotoneaster	C,F	Rose of Sharon, Woodbridge	F
Cotoneaster lacteus		Hypericum spp. St. Johnswort	F
Parney cotoneaster	C,F		Г
Cotoneaster microphyllus	г	<i>llex aquifolium</i> Balkans holly	F
Rockspray cotoneaster	F	English holly	F
Cornus alba Sibirica-Siberian dogwood	F	Gold coast holly	F
-	Γ	Ilex aquipernyi	
Cornus florida Flowering dogwood	F	San Jose holly	C,F
Cornus kousa	ı	llex cornuta	
Kousa dogwood	C,F	Chinese holly	C,F
Cornus stolonifera	0,1	Dwarf burford holly	C,F
Flaviramea-yellowtwig dogwood	F	llex crenata	
Cryptomeria japonica	•	Convexa holly	C,F
Japanese cryptomeria	C,F	Compacta-dwarf Japanese holly	C,F
Cytisus praecox	ŕ	Helleri-Heller's Japanese holly Japanese holly	C,F C,F
Holandia-warminster broom	F	'	0,1
Cytisus scoparius		<i>llex glabra</i> Nordica-inkberry holly	F
Lena-Scotch broom	F	llex meserveae	'
Dasylirion wheeleri		Blue girl holly	F
Desert spoon sotol	F	Blue boy holly	F
Deutzia crenata		Ebony magic holly	F
Nakiana dwarf deutzia	F	Ilex vomitoria	
Dodonea viscosa		Nana-dwarf yaupon holly	C,F
Hopseed bush	F	Pendula-weeping yaupon holly	C,F
Escallonia exoniensis		Yaupon holly	C,F
Escallonia	C,F	<i>Juniperus</i> spp.	0.5
Euonymus alata	-	Juniper	C,F
Winged euonymus	F	Justicia brandegeana	0.5
Euonymus fortunei	0.5	Shrimp plant	C,F
Canadale gold euonymus Emerald'n gold euonymus	C,F C,F	Justicia spicigera Mexican honeysuckle	F
Stringybark euonymus	C,F	•	Γ
Wintercreeper	C,F	Lagerstroemia indica Crape myrtle	C,F
Euonymus japonica	-,	Leucothoe axillaris	0,1
Evergreen euonymus	C,F	Coast leucothoe	F
Silver king euonymus	F	Leucothoe fontanesiana	•
Euonymus kiautschovica		Drooping leucothoe	F
Spreading euonymus	F	Ligustrum amurense	
Fatshedera lizei		Amur privet	C,F
Fatshedera	C,F	Ligustrum japonicum	
Forsythia intermedia	_	Japanese privet	C,F
Forsythia	F	Yellow tip ligustrum	C,F
Gardenia jasminoides	0.5	Ligustrum texanum	
Gardenia	C,F	Wax leaf privet	F
Genista pilosa	г	Howardi privet	F
Woadwaxen	F	Ligustrum lucidum	0.5
Hibiscus rosa-sinensis Chinese hibiscus	F	Glossy privet	C,F
Ross Estey hibiscus	r F	Ligustrum ovalifolium	Е
11000 Lotoy Ilibioodo	1	California privet	F

# Ornamental Shrubs (continued)

# **Ornamental Shrubs** (continued)

Scientific Name/ Common Name	Recommended Treatment Method: C = Container Grown F = Field Grown	Scientific Name/ Common Name	Recommended Treatment Method: C = Container Grown F = Field Grown
Ligustrum vicaryi Vicary golden privet	C,F	Potentilla fragiformis Cinquefoil	F
Livistona chinensis Chinese fountain palm	F	Potentilla fruticosa Cinquefoil	C,F
Lonicera fragrantissima Winter honeysuckle	F	<i>Protea neriifolia</i> Protea	F
Lonicera periclymenum Flowering woodbine Serotina woodbine	F F	Pyracantha coccinea Scarlet firethorn	C,F
Lonicera sempervirens Trumpet honeysuckle	F	Pyracantha fortuneana Lalendel Monrovia pyracantha Monon pyracantha	C,F C,F
Mahonia aquifolium Oregon grape	F	Red elf hybrid pyracantha Rutgers hybrid pyracantha	C,F C,F
Myoporum parvifolium Prostrate myoporum	F	Santa Cruz pyracantha Victory pyracantha	C,F C,F
Myrtus communis True myrtle	C,F	<i>Pyracantha skoidzumi</i> Formosa firethorn	C,F
Nandina domestica Compacta-dwarf heavenly bamboo	C,F	Rhaphiolepis indica Enchantress-Moness rhaphiolepis	F
Harbour-dwarf heavenly bamboo Heavenly bamboo	C,F C,F	India hawthorn Springtime-Monme rhaphiolepis	C,F F
Nana compacta-heavenly bamboo Nana purpurea-heavenly bamboo	C,F C,F	Rhaphiolepis ovata Round-leaf rhaphiolepis	F
Woods-dwarf heavenly bamboo  Nerium oleander  Hardy red eleander	C,F C,F	Rhipsalidopsis gaetneri Easter cactus	C,F
Hardy red oleander Oleander Ruby lace oleander	0,F 0,F 0,F	Rhododendron spp. Azalea Rhododendron	C,F C,F
Osmanthus heterophyllus Holly-leaf osmanthus	F	Rhus lancea African sumac	C,F
Pachysandra terminalis Japanese spurge	F	<i>Rosa rugosa</i> Ramanas rose	F
Philadelphus spp. Mockorange	C,F	Rosmarinus officinalis Rosemary	F
Phoenix roebelenii Pygmy date palm	F	<i>Spiraea vanhouttei</i> Bridal wreath	F
Photinia fraseri Fraser's photinia	C,F	Syringa vulgaris Common lilac	F
Picea abies Repens-spreading Norway spruce	F F	Syzygium paniculata Brush cherry	C,F
Pendula-weeping Norway spruce Pieris japonica Andromeda	C,F	Taxus cuspidata Japanese yew	F
Lily-of-the-valley Snowdrift	G,F F F	Taxus media Yew	F
Temple bells lily-of-the-valley Valley rose lily-of-the-valley	F F	Thuja occidentalis American arborvitae Emerald arborvitae	F F
Pittosporum spp. Pittosporum	C,F	Globosa-globe arborvitae Little Giant-dwarf arborvitae	F F
Platycladus orientalis Oriental arborvitae	C,F	Nigra-dark American arborvitae Pyramidalis arborvitae	F F
Plumbago ariculata Blue cape plumbago	F	Rheingold arborvitae Woodwardii arborvitae	F F
Podocarpus macrophyllus Yewpine	C,F		

# Ornamental Shrubs (continued)

# **Ground Covers** (continued)

Scientific Name/ Common Name	Recommended Treatment Method: C = Container Grown F = Field Grown	Scientific Name/ Common Name	Recommended Treatment Method: C = Container Grown F = Field Grown
Thuja orientalis Aurea nana-dwarf golden arborvitae Minima glauca-dwarf arborvitae	F F	Clytostoma callistegioides Violet trumpet vine Cortaderia selloana	C,F
Trachelospermum jasminoides Chinese star jasmine	· F	Pampas grass  Delosperma alba	F
Veitchia merilli Christmas palm	F	White iceplant  Drosanthemum floribundum	F
Viburnum davidii David viburnum	F	Trailing rosea iceplant  Festuca ovina	F
Viburnum japonicum Viburnum	F	Blue fescue  Gazania spp.	F
Viburnum opulus sterile Eastern snowball viburnum	F	Gazania Gazania Hedera canariensis	F
Viburnum plicatum tomentosum  Doublefile viburnum	F	Algerian ivy  Hedera helix	F
Viburnum x pragense Virburnum	· F	English ivy Hemerocallis spp.	F
Viburnum setigerum Tea viburnum	F	Day lily	C,F
Viburnum suspensum Sandankwa viburnum	· F	Hosta spp. Plantain lily Hypericum spp.	C,F
Viburnum tinus Compactum-spring bouquet viburnum	F	St. Johnswort  Lampranthus spectabilis	F
Laurastinus viburnum  Viburnum trilobum	C,F	Red trailing iceplant  Liriope gigantea	F
Compactum-dwarf cranberry bush Weigela florida	F	White lily turf  Liriope muscari	F
Java red weigela Bristol ruby weigela	F F	Big blue lily turf Lilac beauty lily turf	C,F C,F
Minuet weigela  Xylosma congestum	F	Majestic lily turf Monroe white lily turf	C,F C,F
Xylosma Yucca elata	F	Silvery sunproof lily turf Variegated liriope lily turf	C,F C,F
Soaptree yucca Yucca recurvifolia	C,F	Lonicera japonica Japanese honeysuckle	F
Pendulous yucca  Ground Covers	F	Mesembryanthemum crystallinum lce plant	F
around bovors	Recommended Treatment Method:	Ophiopogon japonicus Mondo grass	F
Scientific Name/ Common Name	C = Container Grown F = Field Grown	Osteospermum fruticosum Trailing African daisy	F
Agapanthus africanus Lily-of-the-Nile	C,F	Sedum brevifolium Stonecrop Trachelospermum jasminoides	F
Ajuga spp. Carpet bugle	F	Chinese star jasmine	F
Arctotheca calendula Cape weed	F	Vinca major Bigleaf periwinkle Vinca minor	F
Campanula elatines Bellflower	C,F	Dwarf periwinkle	F
Carpobrotus edulis Largeleaf iceplant	F		

# **Established Flowers**

Scientific Name/ Common Name	Recommended Treatment Method: C = Container Grown F = Field Grown
Achillea spp. Yarrow	F
Antirrhinum majus Snapdragon	F
Caladium bicolor Fancy-leaved caladium	F
Chrysanthemum coccineum Painted daisy	F
Chrysanthemum maximum Shasta daisy	F
Chrysanthemum morifolium Chrysanthemum	F
Coreopsis lanceolata Coreopsis	F
Dianthus barbatus Sweet william	F
Dicentra spectabilis Bleeding heart	C,F
Dimorphotheca spp. Cape marigold	F
Echinacea purpurea Purple coneflower	F
Geum quellyon Geum	F
<i>Gladiolus hortulanus</i> Gladiolus	F
Gypsophila paniculata Baby's breath	F
Impatiens wallerana Impatiens	F
<i>Iris</i> spp. Bearded iris	F
<i>Liatris spicata</i> Blazing star	C,F
Pelargonium hortorum Geranium	F
Petunia spp. Petunia	F
Portulaca grandiflora Rose moss	F
Ranunculus asiaticus Persian ranunculus	F
Rosa spp. Rose	F
Rudbeckia hirta Gloriosa daisy/black-eyed susan	F
Salvia spp. Sage	F
Stokesia laevis Stokes aster	F
Strelitzia reginae Bird of paradise	F

# **Established Flowers (continued)**

Scientific Name/ Common Name	Recommended Treatment Method: C = Container Grown F = Field Grown
Tagetes spp. Marigold	F
Viola wittrockiana Pansy	F
Zinnia elegans Common zinnia	F
Non-bearing Fruit and Nut Trees and Non-bearing Vineyards <sup>†</sup>	

Common Name	Recommended Treatment Method: C = Container Grown F = Field Grown
Almond	F
Apple	F
Apricot	F
Avocado	F
Cherry, sour	F
Cherry, sweet	F
Fig	F
Filbert	F
Grape, American	F
Grape, European	F
Grapefruit	F
Kiwi	F
Kumquat	C,F
Lemon	F
Macadamia nut	F
Nectarine	F
Olive	F
Orange	C,F
Peach	F
Pear	F
Pecan	C,F
Pistachio	F
Plum	F
Pomegranate	F
Prune	F
Walnut, black	F
Walnut, English	F
	and non-bearing vineyards are defined

<sup>†</sup>Non-bearing fruit and nut trees and non-bearing vineyards are defined as plants that will not bear fruit for at least one year after treatment. Do not apply to plants that will bear fruits, berries or nuts within 12 months of application

# Non-bearing Berries<sup>††</sup>

Common Name	Recommended Treatment Method: C = Container Grown F = Field Grown
Blackberry	F
Blueberry	F
Boysenberry	F
Currant	F
Dewberry	F
Elderberry	F
Gooseberry	F
Loganberry	F
Raspberry	F

<sup>&</sup>lt;sup>††</sup>Non-bearing berries are defined as plants that will not bear berries for at least one year after treatment. Do not apply to plants that will bear fruits, berries or nuts within 12 months of application

# **Ornamental Bulbs**

### **Special Use Precautions**

Do not apply to tulip plants that have emerged to a height greater than 3/4 inch. Deep till prior to planting any crop after this use.

Do not apply to gladioli prior to emergence or to plants less than one inch in diameter

# Application Rates, Frequency, and Timing of Applications

Surflan XL 2G may be applied for annual weed control in ornamental bulbs such as bulbous iris, daffodil (*narcissus*), hyacinth, and tulip. Apply Surflan XL 2G to the soil surface two (2) to four (4) weeks after planting and final hilling but prior to the emergence of annual weeds. Surflan XL 2G may also be applied following bulb emergence. For fall-planted bulbs, apply Surflan XL 2G again in late winter or early spring to weed-free soil surfaces.

# **Broadcast Application Rates**

		Surflan XL 2G		Minimum Time Between	Total Amount Allowed
Time of Application	Soil Texture	(lb./ acre)	(lb./1,000 sq. ft.)	Applications (months)	Per Year (lb./acre)
Fall	Coarse	75	1.7	3	150
Fall	Medium and Fine	150	3.4	3	225
Feb March	All Soil Textures	75	1.7	3	225

# **Christmas Tree Plantations**

Apply Surflan XL 2G to established plantings of labeled field grown Christmas tree species prior to germination of target weeds. Do not apply to Douglas fir (*Pseudotsuga menziesii*) or Eastern hemlock (*Tsuga canadensis*). Do not apply to seedbeds or seedling transplant beds. Apply only to established plantings. Established plants are defined as those 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.

### **Broadcast Application Rates**

	Surflar	ı XL 2G	Minimum Time Between	Total Amount Allowed
Length of Con- trol	(lb./acre)	(lb./1,000 sq. ft.)	Applications (months)	Per Year (lb./acre)
2 - 4 months	200	4.6	2	400

**Note:** Refer to the "General Information" section of this label for general use precautions and information on application. Refer to "Approved Uses" section of this label for special use precautions and information weeds controlled.

# Noncropland Areas: Industrial Sites, Utility Substations, Highway Guardrails, Sign Posts, and Delineators

Surflan XL 2G is recommended as a preemergence treatment for control of certain annual grasses and broadleaf weeds on industrial sites, utility substations, highway guardrails, sign posts, and delineators. Apply Surflan XL 2G prior to germination of target weeds. Areas to be treated should be free of established weeds or existing weeds should be controlled with postemergence herbicides.

# **Broadcast Application Rates**

	Surflan XL 2G		Minimum Time Between	Total Amount Allowed
Length of Con- trol	(lb./acre)	(lb./1,000 sq. ft.)	Applications (months)	Per Year (lb./acre)
2 - 4 months	200	4.6	2	400

**Note:** Refer to the "General Information" section of this label for general use precautions and information on application. Refer to "Approved Uses" section of this label for special use precautions and information weeds controlled.

# **Warm Season Turfgrasses**

Surflan XL 2G 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 and zoysiagrass or 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.

Successful preemergence control of weeds listed on this label requires that Surflan XL 2G be applied prior to weed germination and be activated by at least one-half (1/2) inch of rainfall or irrigation as soon as possible after application.

# **Special Use Precautions:**

To avoid possible injury, do not apply Surflan XL 2G to:

- Cool season turfgrass species other than tall fescue.
- Lawns containing dichondra or cool season turfgrass species.
- Golf course putting greens or tees.
- Turfgrass in the spring that was planted the previous fall.
- Newly sprigged or sodded areas of bermudagrass, St. Augustinegrass, centipedegrass, zoysiagrass or tall fescue until these turfs are well established and have well anchored root systems.
- Newly hydromulched areas of bermudagrass until such areas are well established.

- This product must be watered in as soon as possible after application
  to dissolve the granules. A single rainfall or irrigation of 1/2 inch or
  more is required after product application. Watering-in must be performed by the commercial applicator or the commercial applicator must
  provide the following information to the resident or owner in writing:
- "This product must be watered in as soon as possible."
- "Do not enter or allow others (including children or pets) to enter the treated areas (except those involved in the watering) until the watering-in is complete and the surface is dry."

Surflan XL 2G will not control emerged weeds.

Surflan XL 2G 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 XL 2G only to healthy, well-established turf that has a well-anchored root system.

Do not apply Surflan XL 2G 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 pounds per acre in early summer (Round 1) and Surflan XL 2G at 100 pounds per acre approximately eight weeks later (Round 2).

In bermudagrass areas that have been overseeded with winter grasses, a spring application of Surflan XL 2G will thin the overseeded grasses.

# Weeds Controlled or Suppressed by Surflan XL 2G

Weeds controlled by Surflan XL 2G when applied at 100 to 150 lbs./acre (2.3 to 3.4 lbs./1,000 sq. ft.).

### **Annual Grasses**

### **Summer Annuals:**

Common Name	Scientific Name
Barnyardgrass	Echinochloa crus-galli
Crabgrass	<i>Digitaria</i> spp.
Crowfootgrass	Dactyloctenium aegyptium
foxtail	<i>Setaria</i> spp.
Goosegrass	Eleusine indica
Johnsongrass (seedling only)	Sorghum halepense
ryegrass, Italian	Lolium multiflorum
sandbur, field	Cenchrus incertus
Broadleaf Weeds	
Summer Annuals:	
Common Name	Scientific Name
Carpetweed	Mollugo verticillata
knotweed, prostrate	Polygonum aviculare
purslane, common	Portulaca oleracea
Winter Annuals:	
Common Name	Scientific Name
chickweed, common	Stellaria media
henbit	Lamium amplexicaule

In addition to the weeds controlled, the following weeds will be partially controlled or suppressed at 100 to 150 lbs./acre (2.3 to 3.4 lbs./1.000 sq. ft.).

, ,	
Common Name	Scientific Name
carrot, wild	Daucus carota
fleabane, dwarf	Conyza ramosissima
groundsel, common	Senecio vulgaris
mustard, Indian	Brassica juncea
spurge, prostrate	Euphorbia humistrata
woodsorrel, yellow	Oxalis stricta

# Application Rates, Frequency and Timing of Applications

Surflan XL 2G can be applied in the spring for summer annual grass and broadleaf weed control, and in the fall for winter annual broadleaf weed control.

# **Broadcast Application Rates (Warm Season Turfgrasses)**

	Surflar	ı XL 2G	Minimum Time Between	Total Amount Allowed
Use Area	(lb./acre)	(lb./1,000 sq. ft.)	Applications (months)	Per Year (lb./acre)
All regions	100 150	2.3 3.4	2 3	200 300

### 1. Summer Annual Grasses and Broadleaf Weeds

**Single Application Program:** Apply 150 pounds per acre of Surflan XL 2G in late winter or early spring, prior to the onset of conditions favorable for summer annual weed germination.

**Split Application Program:** As an alternative to a single application program, Surflan XL 2G 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 100 pounds per acre of Surflan XL 2G in an initial application, followed by a second application of 100 pounds per acre 8 to 10 weeks later.

The second treatment of the split application may follow application of a different preemergence grass herbicide in place of the initial Surflan XL 2G application.

### 2. Winter Annual Broadleaf Weeds

Apply Surflan XL 2G as a preemergence treatment in late summer or early fall, prior to the expected germination period for winter annual broadleaf weeds. Do not apply Surflan XL 2G to areas where fall overseeding will occur.

# **Application Directions**

Apply Surflan XL 2G evenly over the turfgrass area. Avoid spray pattern skips and overlaps that may result in incomplete coverage or overapplication. For best results use application equipment designed to uniformly broadcast granular herbicides. More uniform application may be achieved by spreading half the required amount of product over the area and then applying the remaining half in swaths at right angles to the first application. Calibrate application equipment prior to use, according to manufacturer's directions. Check equipment frequently to make sure it is working properly and distributing granules uniformly.

# Reseeding

Herbicides that control annual weeds may also affect establishment of desirable turfgrass seedlings. Reseeding should be delayed for at least 6 weeks following application of Surflan XL 2G at the 100 pounds per acre rate. When using Surflan XL 2G at the 150 pounds per acre rate, reseeding should be delayed 12 to 16 weeks after application. 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 Surflan XL 2G use, 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.

### **Spreader Settings**

(A guide for calibrating spreaders to apply Surflan XL 2G in one pass over turf.)

**Note:** These settings are provided as suggested starting points in calibrating each individual spreader. Since no two spreaders are alike, these settings are intended only as a guide in beginning the calibration process.

	Estimated Spreader Setting Necessary to Apply the Specified Rate of Surflan XL 2G Per Acre In One Pass	
	100 lbs./	150 lbs./
Spreader Type	acre	acre
Cyclone: Models B1, 33, 96, BSSB at 200 ft./min.	3 1/4	3 1/2
Model 100 at 200 ft./min.	3 1/4	3 1/2 6 1/4
Model 93 (based on tractor speed of 4 mph)		., .
Model 99 (based on tractor speed of 4 mph)	4 3/4	5 3/4 - 6
Model BPI (based on tractor speed of 4 mph)	4 1/2	5 1/4 - 5 1/2
<b>Gandy:</b> Model 10A series, 6, 8, 10, 11, 12, 20 and 30 ft.	31	37
(based on tractor speed of 5 mph) Model 10T series, 6, 8, 10, 11, 12, 20 and 30 ft.	33	40
(based on tractor speed of 5 mph) Turf Tender, 24, 30, 42 inch (based on tractor speed of 3 mph)	25	28
600 Series, 2, 4 and 5 ft. (based on tractor speed of 3 mph)	18	22
Lely:		
Model W and H (based on tractor speed of 4.5 mph)	3	4
Lesco: Lesco Spreader (Note: set 3rd adjustable hole 1 notch from "open")	D 1/2	F
Scott:		
Rotary Model R-8	H 1/2	l 1/4
Drop Spreader	3 7/8	4 5/8
<b>Spyker:</b> Spyker	3.2	3.6
Vicon: Model 402 (with seed ring) swath width 20 ft., 5 mph speed	24	28
Warren: Model T-7II (based on ground speed of 3.0 mph)	3 1/4	4

# IMPORTANT INFORMATION READ BEFORE USING PRODUCT

# CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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