page 1

printed October 12, 1994

(Base Label which remains on container after booklet is removed.)

(logo) DowElanco

Surflan* 85DF

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 greenhouse benches
- Ornamental bulbs
- Ground covers

- Christmas tree plantations
- Noncropland
- Non-bearing trees and vines
- · Industrial sites
- Established warm season turf (Including Bahlagrass,

Bermudagrass, Buffalograss, Centipedegrass,

St. Augustinegrass, Tall Fescue and Zoysiagrass)

. . . ,

Active Ingredient:

oryzalin: 3,5-dinitro-N ⁴ ,N ⁴ -dipropylsulfanilamide	85.0%
Inert Ingredients	
Total	
Contains 0.85 pounds of active ingredient per pound of product.	

Precautionary Statements

Hazards to Humans and Domestic Animals

Keep Out of Reach of Children

CAUTION

Causes Eye irritation - Harmful If Swallowed, Inhaled Or Absorbed Through The Skin

Avoid breathing spray mist and contact with skin, eyes or clothing.

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 slothing.

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If In eyes: Flush with plenty of 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 teaspoonfuls) 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.

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

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. Cover or incorporate spills.

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.

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 use of this product may be disposed of on site or at an

approved waste disposal facility.

Container Disposal: Empty bag into application equipment. Then 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.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to label booklet for additional precautionary information including Personal Protective Equipment (PPE) and User Safety Recommendations, and Directions for Use.

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

In case of emergency endangering health or the environment involving this product, call collect 517-636-4400.

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

EPA Reg. No. 62719-153

*Trademark of DowElanco DowElanco • Indianapolis, IN 46268 U.S.A

Specialty Herbicide

EPA Est

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[Laminated Booklet - Surflan AS (Specialty)] [Front Cover of Booklet]

(logo) DowElanco

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Precautionary Statements

Hazards to Humans and Domestic Animals

Keep Out of Reach of Children

CAUTION

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

Avoid breathing spray mist and contact with skin, eyes or clothing.

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 gurn, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

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If In eyes: Flush with plenty of 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 teaspoonfuls) 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: Pemove 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.

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

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. Cover or incorporate spills.

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 St_ndard 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 use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Empty bag into application equipment. Then 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* 85DF herbicide is a preemergence surface-applied herbicide for the control of annual grasses and many broadleaf weeds in ornamental plantings, bulbs, ground covers, established warm-season turfgrass, Christmas tree plantations, non-bearing trees and vines, non-cropland and industrial sites.

Shake Well Before Using.

General Use Precautions

Surflan 85DF will not control emerged weeds. Poor weed control may result if directions are not followed. Over-application may result in crop injury or excessive soil residue.

Surflan 85DF is orange in color and may cause temporary discoloration of sprayed surfaces. If this discoloration is undestrable, it may be altered by using a commercially available colorant/such as Elazon or removed by spraying surface with water or washing with an industrial cleaner immediately after application. Surflan 85DF may also be applied with mulch colorants, such as Mulch Magic or Nu-Mulch.

Users who wish to use Surflan 85DF 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 for 30 to

60 days 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 85DF on plant species not recommended on this label.

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

Soil Preparation

Surflan 85DF will not control emerged weeds. 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 tith and free of clods at the time of application.

Mixing Directions

Surflan 85DF Alone

Make sure spray tank is clean. Fill spray tank 1/4 full with clean water. Start agitation. Vigorous, continuous agitation throughout the spray tank is required with 85DF formulations. Add the correct amount of Surflan 85DF to the spray tank in a controlled manner to aid in mixing and dispersion and to prevent clogging of screens and outlet ports. Maintain continuous agitation from mixing through application.

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

Surfian 85DF Tank Mix Combinations

Vigorous continuous agitation is required for all tank mixes of Surflan 85DF. Sprayer pipe agitators generally provide the best agitation in spray tanks. To prevent foaming, keep the end of the fill pipe below the surface of the water in the spray tank during filling to prevent air from being stirred or splashed into the mixture.

MixIng Order: Fill the tank 1/4 full with clean water, start agitation and add the correct amount of Surflan 85DF as described above. Fill the spray tank to about 90 percent of final spray volume. Add other formulations in the order indicated below, allowing time for complete mixing and dispersion after addition of each product. Allow extra mixing and dispersion time for 85DF products. Add different formulation types in the following order: dry flowables (DF); wettable powders (WP); flowables (F), liquids (L) or aqueous suspensions (AS); solutions (S); and emulsifiable concentrates (EC). Maintain continuous agitation during mixing, final filling and throughout application. 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 sprayer agitator is particularly useful for this purpose. Settled materials may be more difficult to resuspend than when originally mixed.

Premixing: When tank mixing, initial mixing and dispersion of certain 85DF or wettable powder products may be improved by premixing with water (slurrying). Where recommended, follow product label instructions for each material. Adding the slurried material to the spray tank through a 20 or 35 mesh wetting screen will help assure good initial dispersion. Line screens in the tank should be no finer than 50 mesh (100 mesh is finer than 50 mesh).

Application Methods

Ground Application

Apply Surfian 85DF as a directed spray to the soil surface or over top of plants using a vehicle-mounted, pull-type, or backpack sprayer. Apply the appropriate rate of Surfian 85DF 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 Surfian 85DF to the treated area. The volume of water used is not critical, as long as the desired rate of Surfian 85DF 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, acre, etc.). Then mix the desired rate of Surfian 85DF in the amount of water required to cover the entire area to be freated. Use only a properly calibrated, low-pressure herbicide sprayer that will apply the spray uniformly. Use herbicide tips with screens no finer than 50 mesh in nozzles and in-line strainers. 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.

Aeriai Application

Use a standard aerial herbicide boom sprayer. Aerial spray equipment should be calibrated to apply the proper amount of Surflan 85DF alone or in tank mix combinations in 2 to 10 gallons of spray mixture per acre. Nozzle screens and in-line strainers should be no finer than 50 mesh. Surflan 85DF mixes readily with water for concentrate aerial sprays; however, constant vigorous agitation that sweeps the contents from the bottom of the spray tank up into the main body of the liquid is required to maintain a uniform suspension until the spray tank is empty. Avoid spray pattern skips and overlaps that may result in incomplete coverage or over-application. Do not apply when wind conditions favor drift from the target area.

Equipment Cleaning

(buffalograss) (Coloradograss)

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 85DF 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 85DF. A minimum of one-half (1/2) inch of rain or its equivalent in sprinkler irrigation is necessary to activate Surflan 85DF. If weeds begin to emerge due to lack of rainfall or irrigation, shallow cultivate 1 to 2 inches deep to destroy existing weeds or remove them by hand. Shallow cultivation to a depth of 1 to 2 inches will enhance herbicidal effectiveness. If Surflan 85DF 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 85DF

Annual Grasses:			
Common Name	Scientific Name		
barley, little	Hordeum pusillum		
bamyardgrass (watergrass)	Echinochioa crus-galli		
bluegrass, annual	Poa annua		
crabgrass, large	Digitaria sanguinalis		
crabgrass, smooth	Digitaria ischaemum		
crowfootgrass	Dactyloctenium aegyptium		
cupgrass, southwestern	Ericchloa gracilis		
foxtail, bristlegrass	Setaria magna		
foxtail, giant	Setaria faberi		
foxtail, green	Setaria viridis		
(pigeongrass)			
foxtail, robust	Setaria robusta		
foxtail, yellow	Setaria glauca		
goosegrass	Eleusine indica		1 , 2 , 1 , 1 +
(silver crabgrass)			1
Johnsongrass (seedling only)	Sorghum halepense		·
junglerice	Echinochloa colonum		•
lovegrass, Mexican	Eragrostis mexicana	* 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ا فال با فاق فاد فا
lovegrass, orcutt	Eragrostis orcuttiana	* * 1 7 * *	
oat, wild	Avena fatua	* * * * * * * * * * * * * * * * * * * *	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
panicum, browntop	Panicum fasciculatum	* * * * * * * * * * * * * *	' . :
panicum, fall	Panicum dichotomiflorum	a ∳ 	
(spreading panicgrass)			
panicum, Texas	Panicum texanum		

ryegrass, Italian sandbur, field signalgrass (Brachiaria) sprangletop, red witchgrass Lolium multiflorum Cenchrus incertus Brachiaria spp. Leptochloa filiformis Panicum capillare

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

shepherdspurse

spurge, prostrate

woodsorrel, yellow

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

Weeds Suppressed by Surflan 85DF

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:

Scientific Name

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

Conyza canadensis
Polygonum persicaria
Lactuca serriola
Malva neglecta
Sarcostemma cynanchoides
Ipomoea spp.
Brassica nigra
Brassica kaber
Solanum nigrum
Ambrosia artemisiifolia
Polygonum pensylvanicum
Sonchus oleraceus
Euphorbia maculata
Sida spinosa

Abutilon theophrasti

Triticum spp.

Approved Uses

Ornamental Plantings

Special Use Precautions:

Apply only to established plantings. Established plants are defined as those 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.

To avoid possible injury, do not apply Surflan 85DF to:

- Either 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.
- · Omamental plantings where there is likelihood of runoff onto lawn areas.
- Areas containing dichondra or cool season turtgrass species.

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.

On container grown ornamentals where weed seed germination continues in extended periods of time, do not make repeat applications of Surflan 85DF for at least 90 days or crop injury may occur.

For soils treated with Surflan 85DF during the previous season, plant only the ornamental species listed on this label or injury may occur.

Ice Plant: When establishing unrooted ice plant (*Mesembryanthemum crystallinum* and *Carpobrutus edulis*) on coarse soils in landscape plantings, use only the 2 quart per acre rate of Surflan 85DF or crop injury may occur. After the ice plant is well established, a second application may be made.

Broadcast Application Rates

Divadeast Application	United	
Length of Control	Surflan 85DF	
	pounds/acre	oz/1200 sq ft
2 to 4 months	2.4	1
4 to 8 months	4.7	2

Handheld or Backpack Sprayer Application

Apply Surflan 85DF at a rate of 1 to 2 ounces per 1200 square feet. The amount of water used to apply Surflan 85DF is not critical, but should be sufficient for uniform treatment of the target area. Calibrate by determining the volume of water required to treat 1200 square feet. Use this calibration volume to determine the amount of water and Surflan 85DF needed to treat the target area (see following table). Note: Sprayer calibration (volume of spray needed to treat 1,000 square feet) will vary with each individual operator.

Length of Control	Application Rate (oz/1200 sq ft)	Quantity of Water Needed
2 to 4 months	1	The amount required by your
4 to 8 months	2	sprayer to cover 1200 sq ft of area.

Sample Calculation:

Size of target area + 1200 x Application rate = Amount of Surflan 85DF required
Size of target area + 1200 x Calibration volume per 1200 sq ft = Amount of water required

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Recommended Species Including Fruit Plant Nursery Liners

Surflan 85DF is recommended for use on certain container- and field-grown established ornamental plants, trees and shrubs; established ground covers; field grown fruit tree and shrub nursery liners; and in the production of ornamental bulbs (See "Ornamental Bulbs" for special use directions).

Do not apply Surfan 85DF to the following plant species when container grown or field grown or injury may occur:

Deutzia gracilis (slender deutzia) Pseudotsuga menziesii (Douglas-fir)

Thuja occidentalis 'Techny' (Techny arborvitae)

Tsuga canadensis (eastern hemlock)

Surfian 85Dc May be Used on the Following Field- and Liner†- Grown Plants and Plants in Landscape Plantings:

†Plants transplanted for additional growth before transplanting to final growing location.

Common Name
abelia, glossy
acacia prostrate
agave
Andromeda
apple
arborvitae, American
arborvitae, Oriental
ash
aster, stokes
astilbe/false spirea

azalea
baby's breath
barberry, Japanese
beliflower
birch, river
birch, white
bird of paradise
blazing star
bleeding heart
bottlebrush, lemon
boxwood, common
boxwood, Japanese
brush cherry
caldaium, fancy leafed
California laurel

carpet bugle
cassia, feathery
cherry, Mahaleb
cherry, sweet
chrysanthemum, florists
cleyera, Japanese
coneflower, purple
coreopsis
cotoneaster, bearberry
cotoneaster, brightbead
cotoneaster, cranberry
cotoneaster, parney

cotoneaster, Pyrenees

campanula (beliflower)

cape marigold

Scientific Name
Abelia grandiflora
Acacia redolens
Agave macroculmis
Pieris japonica
Malus spp.
Thuja occidentalis

Platycladus orientalis Fraxinus spp. Stokesia laevis Astilbe chinensis and A. chinensis hybrids Rhododendron spp. Gypsophila paniculata Berberis thunbergii Campanula elatines

Betula nigra
Betula nigra
Betula pendula
Strelitzia reginae
Liatris spicata
Dicentra spectabilis
Callistemon citrinus
Buxus sempervirens
Buxus microphylla japonica
Syzygium paniculata
Caladium bicolor

Caladium olcolor
Umbellularia californica
Campanula spp.
Dimorphotheca spp.
Ajuga spp.
Cassia artemisioides

Prunus mahaleb Prunus avium

Chrysanthemum morifolium Cleyera japonica Echinacea purpurea Coreopsis lanceolata Cotoneaster dammeri Cotoneaster buxifolius Cotoneaster apiculatus Cotoneaster lacteus Cotoneaster congestus

ice plant

ice plant, largeleaf

impatiens (Busy lizzie)

(See precautions for ornamental plantings)

(See precautions for ornamental plantings)

Cotoneaster horizontalis cotoneaster, rock cotoneaster, rockspray Cotoneaster microphyllus Populus deltoides cottonwood (grown for pulp) Baccharis pilularis coyotebush, dwarf Lagerstroemia indica crape Myrtle, common Cryptomeria japonica cryptomeria, Japanese Cupressus arizonica (glabra) cypress, Arizona Cupressus sempervirens cypress, italian Rudbeckia hirta daisy, gloriosa (black-eyed Susan) daisy, painted Chrysanthemum coccineum Chrysanthemum maximum daisy, shasta Osteospermum fruticosum daisy, trailing African Hemerocallis spp. daylily Cornus florida dogwood, flowering Comus kousa dogwood, kousa Rhipsalidopsis gaertneri eastercactus Escallonia exoniensis escallonia Eucalyptus cinerea eucalyptus, mealy Eucalyptus nicholii eucalyptus, narrow-leaved Eucalyptus sideroxylon eucalyptus, red Euonymus japonica euonymus, evergreen Euonymus fortunei euonymus, stringybark Euonymus alata euonymus, winged Chamaecyparis lawsoniana falsecypress, Lawson Fatshedera lizei fatshedera fir, alpine Abies lasiocarpa fir. balsam Abies balsamea Abies fraseri fir, fraser fir, grand Abies grandis Abies veitchi fir, Vietch Abies concolor fir, white Pyracantha, fortuneana firethom Pyracantha skoidzumi firethorn, formosa Pyracantha coccinea firethorn, scarlet Forsythia intermedia forsythia, border geum Geum quellyon gardenia Gardenia jasminoides gazania, trailing Gazania rigens leucolaena Pelargonium hortorum geranium (Pelargonium) Geum quellyon geum Ginkgo biloba ginkgo Gladiolus hortulanus garden gladiolus Koelreuteria paniculata goldenrain tree Nandina domestica heavenly bamboo (Nandina) hibiscus, Chinese Hibiscus rosa-sinesis llex comuta holly, Chinese llex aquifolium holly, English llex crenata holly, Japanese Lonicera japonica honeysuckie, Japanese Justicia spicigera honeysuckle, Mexican Dodonaea viscosa hopseedbush, clammy Mesembryanthemum crystallinum

Carpobrutus edulis

Impatiens wallerana

iris, bearded ivy, Algerian ivy, English Jerseytea, redroot juniper kumquat laurel, mountain laurelcherry, Carolina laurelchemy, English leucothoe, coast leucothoe, drooping lilac, common lily, plantain lilyturi, bigblue lily-of-the-Nile linden, little leaf magnolia, Southern manzanita, Stanford maple marigoid mockorange moss, rose myoporum, prostrate myrtle, true oak oleander orange, omamental Oregon grape osmanthus, holly-leaf Palo Verde, blue pansy pear pecan, ornamental periwinkle, bigleaf periwinkle, dwarf petunia photinia pine pittosporum privet, amur privet, glossy privet, golden privet, Japanese protea ranunculus, Persian redbud redcedar, eastern redcedar, western redwood, coast rhaphiolepsis (India hawthorn) rhododendron rose rose-of-Sharon (Shrubalthea) Russian olive sage shrimp plant snapdragon

sotol, desert spoon

Iris spp. Hedera canariensis Hedera helix Ceanothus americanus Juniperus spp. Fortunella spp. Kalmia latifolia Prunus caroliniana Prunus laurocerasus Leucothoe axillaris Leucothoe fontanesiana Syringa vulgaris Hosta spp. Liriope muscari Agapanthus africanus Tilia cordata Magnolia grandiflora Arctostaphylos stanfordiana Acer spp. Tagetes spp. Philadelphus spp. Portulaca grandiflora Myoporum parvifolium Myrtus communis Quercus spp. Nerium oleander Citrus spp. Mahonia aquifolium Osmanthus heterophyllus Cercidium floridum Viola wittrockiana Pyrus communis Carya spp. Vinca major Vinca minor Petunia spp. Photinia fraseri Pinus spp. Pittosporum spp. Ligustrum amurense Ligustrum lucidum Ligustrum vicaryi Ligustrum japonicum Protea neriifolia Ranunculus asiaticus Cercis canadensis Juniperus virginiana Thuja plicata Sequoia sempervirens Rhaphiolepsis indica Rhododendron spp. Rosa spp. Hibiscus syriacus Elaeagnus angustifolia Salvia spp. Justicia brandegeana Antirrhinum majus Dasylirion wheeleri

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spruce, black spruce, Colorado spruce, Englemann spruce, Norway spruce, white star jasmine, Chinese stonecrop

sumac, African sweetgum, American sweet William tobira

trumpet vine, violet viburnum, Laurustinus virburnum, Sandankwa weigela, oktfashioned wintercreeper

xylosma, Japanese yarrow yaupon

yew, Japanese yewpine

yucca, pendulous yucca, soaptree zinnia, common Picea mariana Picea pungens Picea englemanni Picea abies Picea glauca

Trachelospermum jasminoides

Sedum brevifolium Rhus lancea

Liquidambar styraciflua Dianthus barbatus Pittosporum tobira

Clytostoma callistegioides

Viburnum tinus Virbunum suspensum Weigela florida Euonymus fortunei Xylosma congestum

Achillea spp. Ilex vomitoria Taxus media Taxus cuspidata

Podocarpus macrophyllus

Yucca recurvifolia Yucca elata Zinnea elegans

Surflan 85DF May be Used on the Following Container-Grown Plants:

Common Name

andromeda arborvitae, American arborvitae, Oriental astilbe/false spirea

barberry, Japanese beliflower blazing star bleeding heart bottlebrush, lemon boxwood, common

bottlebrush, lemon boxwood, common brush cherry cleyera, Japanese cotoneaster, bearberry cotoneaster, cranberry cotoneaster, parney cotoneaster, rock crape Myrtle, common cryptomeria, Japanese cypress, Arizona cypress, Italian

daylily dogwood, kousa eastercactus escalionia

euonymus, evergreen euonymus, stringybark

fatshedera firethorn Pieris japonica
Thuja occidentalis
Platycladus orientalis
Astilbe chinensis and
A. chinensis hybrids
Berberis thunbergii
Campanula elatines
Liatris spicata
Dicentra spectabilis
Callistemon citrinus
Buxus sen:pervirens
Syzygium paniculata
Cleyera japonica
Cotoneaster dammeri

Buxus sen:pervirens
Syzygium pariiculata
Cleyera japonica
Cotoneaster dammeri
Cotoneaster apiculatus
Cotoneaster lacteus
Cotoneaster horizontalis
Lagerstroemia indica
Cryptomeria japonica
Cupressus arizonica (glabra)
Cupressus sempervirens
Hemencallis spn

Hemerocallis spp.
Cornus kousa
Rhipsalidopsis gaertneri
Escallonia exoniensis
Euonymus japonica
Euonymus fortunei
Fatshedera lizei

Pyracantha, fortuneana

DF 85

LABELS US

firethorn, formosa Pyracantha skoidzumi firethorn, scarlet Pyracantha coccinea Gardenia jasminoides gardenia Ginkgo biloba ginkgo llex comuta holly, Chinese llex crenata holly, Japanese Jerseytea, redroot Ceanothus americanus juniper Juniperus spp. kumquat Fortuneila spp. lilac, common Syringa vulgaris lilyturf, bigblue Liriope muscari Agapanthus africanus lily-of-the-Nile Tilia cordata linden, little leaf Philadelphus spp. mockorange Myrtus communis myrtle, true Quercus spp. oak Nerium oleander oleander orange, ornamental Citrus spp. pecan, ornamental Carya spp. photinia Photinia fraseri Pinus spp. pine Pittosporum spp. pittosporum Ligustrum amurense privet, amur Ligustrum lucidum privet, glossy Ligustrum vicaryi privet, golden privet, Japanese Ligustrum japonicum redbud Cercis canadensis rnaphiolepsis (India hawthorn) Rhaphiolepsis indica rhododendron Rhododendron spp. Russian olive Elaeagnus angustifolia shrimp plant Justicia brandegeana spruce, Colorado Picea pungens sumac, African Rhus lancea sweetgum, American Liquidambar styraciflua Clytostoma callistegioides trumpet vine, violet Viburnum tinus viburnum, Laurustinus Euonymus fortunei wintercreeper Ilex vomitoria yaupon Yucca elata yucca, soaptree

Surflan 85DF May be Used on the Following Field Grown Fruit Plant Nursery Liners†:

almond apple apricot avocado cherry fig filbert grape	grapefruit kiwi lemon macadamia nut nectarine olive orange	pear pecan pistachio plum pomegranate prune walnut, English
grap e		

Small Fruits:

blackberry currant gooseberry
blueberry dewberry loganberry
boysenberry elderberry raspberry

[†]Plants transplanted for additional growth before transplanting to final growing location.

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Tank Mix Combinations

Tank mix combinations of Surflan 85DF plus Roundup, and many other labeled herbicides may be used to control undesirable vegetation in ornamental areas. Surflan 85DF may also be tank mixed with Gallery* herbicide (California registration pending) and applied preemergence to broaden the spectrum of broadleaf weed control in ornamental areas. Applied as directed, these Surflan 85DF tank mixes 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 85DF Plus Roundup: Tank mix combinations of Surflan 85DF plus Roundup are recommended to control existing undesirable vegetation. Applied as directed, Surflan 85DF plus Poundup 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 85DF. 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 contact of sprays containing Roundup with foliage and stems of turigrasses, trees, shrubs, or other desirable vegetation since severe damage or death may result. Note: If spraying with Roundup in areas adjacent to desirable plants, use a shield to prevent spray from contacting foliage and stems of desirable plants.

Ornamental Bulbs

Surflan 85DF may be applied for control of susceptible annual weeds in ornamental bulbs, e.g., bulbous iris, daffodil (narcissus), hyacinth and tulip. Apply Surflan 85DF to the soil surface 2 to 4 weeks after planting, but prior to the emergence of annual weeds. For fall planted bulbs, apply Surflan 85DF again in late winter or early spring to weed-free soil surfaces.

Special Use Precautions:

Do not apply to tulip plants that have emerged to a height greater than 3/4 inch. Do not apply to gladioli corms prior to emergence or less than one inch in diameter.

Broadcast Application Rates

		Surflan 85DF	
Time of Application	Soli Texture	pounds/acre	oz/1200 sq ft
Fall	Coarse	0.88	0.4
Fall	Medium and Fine	1.75	0.8
Feb March	All Soil Textures	0.88	0.4

Greenhouse Freas

Surflan 85DF may be app...d to drainage areas under benches in open greenhouse-type structures. Do not apply in enclosed greenhouses or in enclosed shadehouse-type structures. Do not apply within three weeks prior to enclosure in greenhouse-type structures.

Christmas Tree Plantations

Surfian 85DF Alone

Apply Surflan 85DF 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.). Do not apply to Douglas-fir (Pseudotsuga menziesii). Do not apply to 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. Follow all instructions provided in the "General Information" section of this label.

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Broadcast Application Rates

Length of Control	Surflan 85DF	
	pounds/acre	oz/1200 sq ft
2 to 4 months	2.4	
4 to 8 months	4.7	2

Tank Mix Combinations

Tank mix combinations of Surflan 85DF 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 85DF Plus Roundup: Apply tank mix combinations of Surflan 85DF plus Roundup only as directed sprays in Christmas tree plantings. When applied according to use directions, Surflan 85DF plus Roundup will provide postemergence control of susceptible weed species listed on the Roundup label and residual preemergence control of susceptible weed species listed on the label for Surflan 85DF. Refer to the Roundup label for specific use directions, precautions and limitations before use.

Precautions:

Do not apply sprays containing Roundup over the top of Christmas tree plantings.

Extreme care must be exercised to avoid contact of spray containing Roundup with foliage and stems of Christmas trees or severe damage or death may result.

Noncropland Areas and Industrial Sites

Noncropland Areas -- Tank Mix Combinations

Tank mix combinations of Surflan 85DF plus Roundup and many other labeled herbicides may be used to control undesirable vegetation in noncropland areas. 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.

Length of Control	Surflan 85DF	
	pounds/acre_	oz/1200 sq ft
2 to 4 months	2.4	1
4 to 8 months	4.7	2
8 to 12 months	7.1	3

Industrial Sites -- Tank Mix Combinations

Tank mix combinations of Surflan 85DF plus Roundup, Spike 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 85DF 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. Surflan 85DF may be tank mixed with Gallery herbicide (California registrations pending) and applied preemergence to broaden the spectrum of broadleaf weed control in warm season turf. Refer to the label for Gallery herbicide for specific use directions, precautions; and limitations before use.

Successful preemergence control of weeds listed on this label requires that Surflan 85DF be applied prior to weed germination and be activated by at least one-half (1/2) inch of rainfall or irrigation within 21 days of application.

Special Use Precautions:

To avoid possible injury, do not apply Surflan 85DF to:

Cool season turigrass species.

- Golf course putting greens or tees or lawns containing dichondra or cool season turfgrass species.
- Newly sprigged or sodded areas of bermudagrass, St. Augustinegrass, centipedegrass, or zoysiagrass until these turns 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.

Surflan 85DF will not control emerged weeds.

Any cultural practices that disturb the soil, such as aerification or verticutting, should be done prior to application of Surflan 85DF.

Surflan 85DF 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 85DF only to healthy, well-established turf that has a well-anchored root system.

Use Surflan 85DF only as a part of a total turf management program that includes good fertilization practices.

Do not apply Surflan 85DF 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 to 80 pounds per acre in early summer (Round 1) and Surflan 85DF at 1.75 pounds per acre approximately eight weeks later (Round 2). Do not apply Surflan 85DF at the single application rate (2.4 pounds per acre) to established tall fescue; in such cases, apply 1.75 pounds per acre of Surflan 85DF in an initial application, followed by a second application of 1.75 pounds per acre 8 to 10 weeks later.

In bermudagrass areas that have been overseeded with winter grasses, a spring application of Surflan 85DF will thin the overseeded grasses.

Annual Grasses Controlled by Surflan 85DF

Summer Annuals:

Common Name
barnyardgrass
(watergrass)
crabgrass, large
crabgrass, smooth

Scientific Name
Echinochloa crus-galli
Digitaria sanguinalis
Digitaria ischaemum

crabgrass Digitaria spp.
crowtootgrass Dactyloctenium aegyptium

foxtail, bristlegrass Setaria magna foxtail, giant Setaria faberi foxtail, green Setaria viridis

(pigeongrass)
foxtail, robust
foxtail, yellow
goosegrass

Setaria robusta
Setaria glauca
Eleusine indica

(silver crabgrass)
Johnsongrass Sorghum halepense

(seedling only)
ryegrass, Italian
sandbur, field

Lolium multiflorum
Cenchrus incertus

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Winter Annuals:

Common Name

Scientific Name

bluegrass, annual

Poa annua

Annual Broadleaf Weeds Controlled by Surflan 85DF

Summer Annuals:

Common Name

Scientific Name

carpetweed knotweed, prostrate

Mollugo verticillata Polygonum aviculare

pursiane, common

Portulaca oleracea

Winter Annuals:

Common Name

Scientific Name

chickweed, common

Stellaria media

henbit

Lamium amplexicaule

Broadleaf Weeds Suppressed by Surflan 85DF

Common Name

Scientific Name

groundsel, common

Senecio vulgaris

spurge, prostrate woodsorrel, yellow

Euphorbia humistrata Oxalis stricta

Application Rates, Frequency and Timing of Application

Surflan 85DF 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 2.4 pounds per acre of Surflan 85DF per acre 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 85DF 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 1.75 pounds per acre of Surflan 85DF in an initial application, followed by a second application of 1.75 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 85DF application.

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 turigrass cover. Proper fertilization, irrigation and soil incorporated reseeding should be employed to speed the restoration of desirable turigrass cover in areas previously occupied by annual bluegrass (See section on reseeding).

Apply Surflan 85DF as a preemergence treatment in late summer or early fall, prior to the expected germination period for annual bluegrass and winter annual bluegrass and electron is severe and its elimination will result in thinning turfgrass cover, apply Surflan 85DF at 1.75 pounds per acre. If thinning of turfgrass cover is not a potential problem, Surflan 85DF may be applied at 2.4 pounds per acre.

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Broadcast Application Rates

Surflan 85DF		
pounds/acre	fl oz/1200 sq ft	
1.75	0.8	
2.4	1	

Weed Control in Florida

In Florida, apply 1.75 pounds per acre of Surflan 85DF three times per year, or every 90 to 100 days, in the fall, early spring, and early summer. Do not apply more than 1.75 pounds per acre of Surflan 85DF in any single application.

Application Equipment

Apply Surflan 85DF 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 property and distributing spray uniformly.

Reseeding

Herbicides that control annual weeds may also affect establishment of desirable turigrass seedlings. Reseeding should be delayed for at least 90-120 days following application of Surflan 85DF. 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 85DF 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.

Warranty Disclaimer

DowElanco 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. DowElanco 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 DowElanco 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 DowElanco's 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

DowElanco shall not be liable for losses or damages resulting from handling or use of this product unless DowElanco is promptly notified of such loss or damage in writing. In no case shall Ccv/2lanco be liable for consequential or incidental damages or losses.

The terms of the "Warranty Disclaimer" above and this "Limitation of Remedies" carriet be varied by any written or verbal statements or agreements. No employee or sales agent of DowElanco or the seller is

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