

PM 25 62719-112

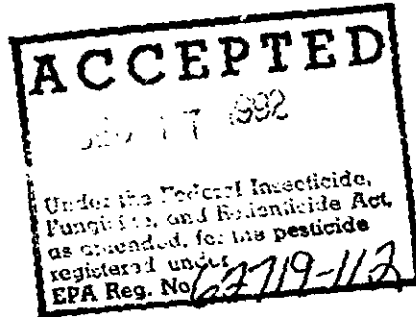
10/9

Product Data Sheet

Surlan A.S.
62719-112

Registrant:

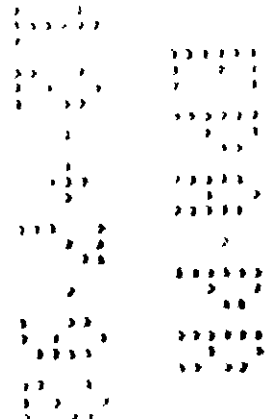
DowElanco
9002 Purdue Rd. Quad IV
Indianapolis, IN 46268



EPA Approval 04/14/92

Revisions include:

- 1) Tank mix directions revised (certain products deleted from tank mix table and tank mix table updated to reflect current approved uses by product).
- 2) Use on Christmas tree plantations added.



DowElanco **Surflan[®] A.S.**

A preemergence surface-applied herbicide for the control of most annual grasses and certain broadleaf weeds

Active ingredient:
oryzalin: 3,5-dinitro-N⁶, N⁶-dipropylsulfanilamide 40.4%
Inert ingredients 59.6%
Contains four pounds of active ingredient per gallon.

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 • Surflan A.S. May Cause Skin Sensitization Reactions in Certain Individuals

Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist. Mixer/loader/ applicators must wear eye protection. Protective clothing such as coveralls and/or a long-sleeved shirt, shoes, and impermeable gloves should be worn when handling this product. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

First Aid

If in eye: 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 (5-8 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. Cover or incorporate spots.

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. Shake Well Before Using.

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

Refer to attached label booklet for additional precautionary information 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. 62719-112 EPA Est. 37429-GA-01
20121 900-001848

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

Herbicide

Net Contents 2.5 gal



PULL HERE TO OPEN

Surflan[®]

A.S.

A preemergence surface-applied herbicide for the control of most annual grasses and certain broadleaf weeds

Active ingredient:

oryzalin, 3,5-dinitro-N,N'-dipropylsulfentamide 40.4%
 Inert ingredients 59.6%
 Contains four pounds of active ingredient per gallon.

Keep Out of Reach of Children
DANGER

Refer to inside of label booklet for additional precautionary information and Directions for Use including STORAGE AND DISPOSAL.

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

In case of emergency endangering health or the environment involving this product, call collect 517-838-4400.

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

Shake Well Before Using.

EPA Reg. No. 62719-112
 20121

EPA Est. 37429-GA-01
 800-001648

[®]Trademark of DowElanco
 DowElanco • Indianapolis, IN 46368, U.S.A.

Herbicide

Net Contents **2.5 gal**

Table of Contents	Page
Precautionary Statements	1
Hazards to Humans and Domestic Animals	1
First Aid	1
Environmental Hazards	2
Directions for Use	2
Storage and Disposal	2
General Information	2
General Use Precautions	2
Soil Preparation	2
Activation and Cultivation	2
Mixing Directions	3
Surflan A.S. - Alone	3
Surflan A.S. - Tank Mix Combinations	3
Mixing Order	3
Premixing	3
Testing for Compatibility in Liquid Fertilizers	4
Testing Procedure	4
Compatibility Agents	4
Application Methods	5
Ground Broadcast Application	5
Band Application	5
Chemigation	5
Weeds and Grasses Controlled in Fruit and Nut Crops and Vineyards	6
Approved Crops	
Fruit and Nut Crops and Vineyards (Nonbearing and Bearing)	8
Surflan A.S. - Alone	8
Surflan A.S. - Tank Mix Recommendations	8
Recommended Surflan A.S. Tank Mix Combinations	8
Surflan A.S. plus Goal plus Gramoxone Super	8
Surflan A.S. plus Gramoxone Super	8
Surflan A.S. plus Princep (amazine)	8
Surflan A.S. plus Roundup	8
Surflan A.S. plus Solticam	8
Surflan A.S. - Tank Mix Reference Table	9
Christmas Tree Plantations	11

Warranty Dis
 Inherent Ris
 Limitation of

Precau

Hazards to Humans and Domestic Animals

Keep Out of Reach of Children

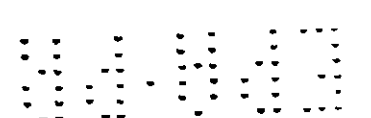
CAUTION

Causes Eye Irritation
 Inhaled Or Swallowed
 Surflan A.S. Causes Irritation

Avoid contact with skin and clothing
 Avoid breathing dust or mist
 Mixer/loader operator should wear protective coveralls and impermeable boots
 Wash hands with soap and water after handling
 Avoid contamination of food and feed

First Aid

If in eyes: Flush with water for 15 minutes. Get medical attention.
 If on skin: Wash with soap and water. Get medical attention.
 If swallowed: Do not induce vomiting. Get medical attention.
 If inhaled: Get medical attention.
 If inhaled: Get medical attention.
 If inhaled: Get medical attention.
 If inhaled: Get medical attention.



4049

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. Shake Well Before Using.

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: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or 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 herbicide for the control of most annual grasses and certain broadleaf weeds. Surflan A.S. controls susceptible annual weeds by disrupting plant growth processes during germination. Surflan A.S. may be applied in liquid sprays of water or liquid fertilizer. Surflan A.S. may be tank mixed with other herbicides to control existing vegetation or improve the spectrum of weeds controlled. Surflan A.S. alone does not control established weeds.

General Use Precautions

Do not graze or feed forage from treated fields or orchards to livestock.

Poor weed control may result if directions are not carefully followed.

Do not over-apply Surflan A.S. Over-application may result in crop injury or soil residue.

Do not plant any root crop for 12 months following a Surflan A.S. application.

Do not use Surflan A.S. on soils containing more than 5% organic matter.

Apply Surflan A.S. directly to the soil surface in orchards or vineyards.

Carefully follow label directions to avoid poor weed control or crop injury.

Chemigation: See instructions for chemigation in "Application Methods".

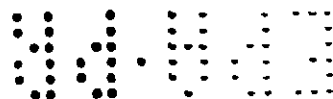
Soil Preparation

Optimum herbicidal activity occurs when Surflan A.S. is applied to the soil surface. Prior to application, existing unwanted vegetation should be destroyed by usage or use of contact or translocated herbicides. Crop or weed residues, pruning and trash should be thoroughly mixed into the soil by tillage equipment or removed before treatment. Soil should be in good tilth and free of clods at the time of application.

Activation and Cultivation

A single 1/2 to 1 inch rainfall or sprinkler irrigation is required to activate Surflan A.S. and move the herbicide into the zone of weed germination. Rainfall or irrigation of 1 inch or more is needed to activate Surflan A.S. on fine-textured, high organic matter soils. If weeds begin to emerge, a shallow cultivation to a depth of 1 to 2 inches will destroy existing weeds and place Surflan A.S. in the zone of weed germination.

NOTE:



Mixing Directions

Surflan A.S. - Alone

Surflan A.S. may be applied in water or most liquid fertilizer materials. Prior to mixing Surflan A.S. in liquid fertilizer, refer to "Testing for Compatibility in Liquid Fertilizers" for test procedures to determine compatibility with the fertilizer product to be used. The combination of Surflan A.S. with solution and suspension-type fertilizers provides annual weed control equal to Surflan A.S. applied in water. Individual state regulations relating to liquid fertilizer mixing, registration, labeling and application are the responsibility of the individual and/or company offering the fertilizer and chemical mixture for sale.

Start with a clean spray tank. Fill the tank to 1/3 to 1/2 of the required spray volume. Start agitation. Shake the container well and add the correct amount of Surflan A.S., continue agitation and fill spray tank to required spray volume. Maintain continuous agitation from mixing through application.

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

Surflan A.S. - Tank Mix Combinations

Surflan A.S. may be tank mixed with other products and applied with water or most liquid fertilizer materials. Prior to tank mixing Surflan A.S. with other herbicides, mix the products together in correct proportions in a small container of water, let stand for 5 minutes and check for compatibility. If the combination remains mixed or can be resuspended easily, the mixture is compatible.

Tank Mixing in Liquid Fertilizer: Prior to mixing Surflan A.S. with other products in liquid fertilizer, refer to the tank mix product manufacturer's label to determine if application in liquid fertilizer is recommended. Also refer to "Testing for Compatibility in Liquid Fertilizers" for testing procedures to determine tank mix compatibility with the liquid fertilizer product to be used. The

combination of Surflan A.S. with solution and suspension-type fertilizers provides annual weed control equal to Surflan A.S. applied in water. Individual state regulations relating to liquid fertilizer mixing, registration, labeling and application are the responsibility of the individual and/or company offering the fertilizer and chemical mixture for sale. Read and follow all label instructions for each material to be added to the spray tank.

Vigorous continuous agitation is required for all tank mixes. Sparger pipe agitators generally provide the best agitation in spray tank. 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 spray tank to 1/4 of the total spray volume required. Start agitation. 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 (S), flowables (F) and liquids (L); solutions (S); and emulsifiable concentrates (EC).

Finish filling spray tank. 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 suspended before spraying is resumed. A sparger 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 dry flowable 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 to 35 mesh wetting

screen will help assure good initial dispersion. Line screens in the tank through a 20 to 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).

Testing for Compatibility in Liquid Fertilizers

Surflan A.S. alone or in combination with dry flowable (DF), wettable powder (WP), aqueous suspension (AS), flowable (F), liquid (L), solution (S) or emulsifiable concentrate (EC) formulations may not combine properly with some liquid fertilizer materials. Small quantities of such mixtures should always be tested before full-scale mixing. Follow the testing procedure below to determine if a compatibility agent is needed or which compatibility agent works best in your liquid fertilizer plus herbicide mixture. Nine compatibility agents listed at the end of this section have been thoroughly tested. Other surfactant materials available may not be formulated for use with liquid fertilizers.

Testing Procedure

1. Add 1 pint of liquid fertilizer to 1 quart glass jar.
2. Add 1 to 4 teaspoonfuls of DF, WP, Surflan A.S., other AS formulations, F, or L formulations, depending on mixing ratio required, to the liquid fertilizer. Close the jar and shake until evenly dispersed after addition of each formulation. If dry flowable or wettable powder formulations do not disperse well, it may be necessary to slurry the materials in a small amount of water before addition to the liquid fertilizer.
3. After dispersing the materials in step 2, add any S formulations to the jar and shake well. Finally, add EC formulations to the mixture and shake well. Observe the jar for about 10 minutes. If materials rise to the surface and form a thick layer that will not redispense when agitated, a compatibility agent is needed

If the mixture is easily redispersed with slight agitation, a compatibility agent is not required. Good agitation, however, must be provided to maintain dispersion in the spray tank from mixing through application.

4. If the need for a compatibility agent is demonstrated in step 3, the following procedure is recommended: Using a clean clear plastic or glass container, repeat step above and add 1/2 teaspoon of the compatibility agent to the liquid fertilizer mixture. Shake well and then repeat steps 2 and 3.

An effective compatibility agent will cause a mixture to remain uniformly mixed with little or no separation for 1/2 hour or longer. If slight separation occurs, 2 to 3 inversions of container should be sufficient to uniformly redispense the mixture. If layers form which will not disperse, try adding additional compatibility agent or use an alternative compatibility agent to achieve a uniform mixture.

Use a clean jar in each test. A compatible mixture will have a uniform appearance and will be relatively easy to redispense with gentle agitation of the jar.

Compatibility Agents

The phosphate ester-type surfactants listed below are designed for use with liquid fertilizer and can be mixed at rates as low as 1 1/2 to 2 pints per ton of liquid fertilizer. They usually do not work well as compatibility agents for tank mixes in plain water. Add the compatibility agent just before adding herbicides. Read and follow label directions for the compatibility agent.

1. Sponto 168D (Wilco Chemicals Co., Chicago, IL)
2. Compat (Farm Chemicals, Inc., Aberdeen, NC)
Not for use in California.
3. Unite (Hopkins Ag Chemical, Madison, WI)
4. T-Mulz 734-2 (Thompson-Hayward Chemical Co., Kansas City, KS)
Not for use in California.

5. Rigo Compatibility Agent (Rigo Company, Buckner, KY)
Not for use in California.
6. Amoco Spray Mate (Amoco Oil Co., Chicago, IL)
Not for use in California.
7. Kem-Link (Universal Coop, Minneapolis, MN)
Not for use in California.
8. Blendax (Helena Chemical, Cayce-West, Columbia, SC)
Not for use in California.
9. Spray-Aide (Miller Chemical and Fertilizer Corp., Hanover, PA)

Applications Methods

Ground Broadcast Application

Apply Surflan A.S. directly to the soil surface of the orchard or vineyard in a total spray volume of 20 to 40 gallons per acre (broadcast basis), using any properly calibrated low pressure herbicide sprayer that will apply the spray uniformly. Use herbicide nozzle tips and screens no finer than 50 mesh for nozzle and in-line strainers. As the amount of spray volume per acre decreases, the importance of accurate calibration and uniform application increases. Check the sprayer daily to insure proper calibration and uniform application. Avoid boom overlaps that will increase rates above those recommended.

Band Application

For band application, use the following formula to calculate the required amount of product per acre.

$$\frac{\text{Band Width (inches)}}{\text{Row Width (inches)}} \times \text{Broadcast rate per acre} = \text{Amount required per acre}$$

Chemigation

Surflan A.S. may be applied through properly equipped chemigation systems for weed control in fruit and nut orchards or vineyards. Read and follow all label instructions outlined below concerning chemigation before applying Surflan A.S. by this method.

Chemigation Use Precautions: Apply this product only through solid set or hand move systems designed to distribute sprinkler irrigation beneath the tree canopy. Solid set systems utilizing tall risers for overhead application are excluded, except for dormant season applications of Surflan A.S. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration you should contact state extension specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Sprinkler Chemigation Directions: The following directions must be followed for all recommended sprinkler irrigation systems (solid set and hand move systems):

1. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back-flow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connect to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point that pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.
8. Surflan A.S. should be injected continuously throughout the chemigation period. The chemigation metering pump should be checked periodically during application to insure proper operation.
9. The injection metering pump must be calibrated as specified by the manufacturer.
10. During chemigation, maintain agitation in supply tank at all times.
11. Surflan A.S. may cause some staining of plastic hoses and tanks.
12. Apply Surflan A.S. in sprinkler irrigation equal to 1/2 to 1 inch of water.

Chemigation System Calibration: Sample calculation for use of Surflan A.S. in a chemigation system:

- Assume, in this example, 35 acres are to be covered by a chemigation treatment.
- Product required, assuming 1 quart per acre is 35 quarts (8.75 gallons).
- Prepare a mixture containing 1 part water and 1 part Surflan A.S. by adding 8.75 gallons of product to the supply tank containing an equal amount of water (total volume = 17.5 gallons).

- Adjust the injection system to deliver 17.5 gallons during the time required to apply 1 inch of water to 35 acres.
- If the irrigation system requires 5 hours to apply 1 inch of water to 35 acres, the injection rate is 3.5 gallons per hour and is calculated as follows:

$$17.5 \text{ gallons} / 5 \text{ hours} = 3.5 \text{ gallons/hour} \\ [3.5 \text{ gallons} = 448 \text{ fluid ounces (fl oz)}]$$

Proper calibration requires the injection pump to be adjusted to deliver 7.47 fl oz per minute and is calculated as follows:

$$448 \text{ fl oz per hr} / 60 \text{ min per hr} = 7.47 \text{ fl oz/min.}$$

Chemigation Mixing Directions: The injection mixture (slurry) with minimum volume may be prepared by adding the required amount of Surflan A.S. to an equal amount of water in the injection tank (ratio Surflan A.S. to water = 1:1). Meter the mixture into the irrigation system during the entire irrigation period. Additional dilution of Surflan A.S. may be necessary for accurate calibration of equipment designed to deliver a larger injection volume per hour. Maintain supply tank agitation throughout the irrigation period.

Undiluted Surflan A.S. should not be injected into chemigation systems.

Weeds and Grasses Controlled in Fruit and Nut Crops and Vineyards

Annual Grasses

Common Name	Scientific Name
barley, little	<i>Hordeum pusillum</i>
barnyardgrass (watergrass)	<i>Echinochloa crus-galli</i>
bluegrass, annual (poa)	<i>Poa annua</i>
bracharia (signalgrass)	<i>Bracharia</i> spp.
browntop panicum	<i>Panicum fasciculatum</i>

Common Name
 crabgrass
 (large crabgrass)
 (smooth crabgrass)
 crowfootgrass

Scientific Name
Digitaria spp.

Common Name
 c. grass
 downy brome
 fall panicum
 (spreading
 panicgrass)
 foxtails
 (tottlegrass)
 (bristlegass)
 (giant foxtail)
 (green foxtail)
 (pigeongrass)
 (robust foxtail)
 (yellow foxtail)
 guineagrass
 (narrowleaf
 panicum
 johnsongrass
 (seeding only)
 junglerice
 lovegrass, Mexican
 lovegrass, vcutt
 oat, wild
 ryegrass, annual
 (Italian)
 sandbur, field
 sprangletop, red
 Texas panicum
 (buffalograss)
 (Coloredgrass)
 witchgrass

Scientific Name
*Dactyloctenium
 aegyptium*
Eriochloa gracilis
Bromus tectorum
*Panicum
 dichotomiflorum*
Setaria spp.
Panicum maximum
Sorghum halepense
Echinochloa colonum
Eragrostis mexicana
Eragrostis arcuata
Avena fatua
Lolium multiflorum
Cenchrus incertus
Leptochloa filiformis
Panicum texanum
Panicum capillare

Annual Broadleaf Weeds
Common Name
 carpet weed
 chickweed
 cudweed
 fiddleneck, coast
 Florida pusley
 (Florida purslane)
 (Mexican clover)
 (pusley)

Scientific Name
Mollugo verticillata
Stellaria media
Gnaphalium chilense
Amaranthus intermedius
Richardia scabra

Common Name
 horbit
 knotweed, prostrate
 lambequarters
 pigweeds
 (cassideseed)
 (prostrate pigweed)
 (redroot pigweed)
 (rough pigweed)
 (smooth pigweed)
 (spiny pigweed)
 (tumble pigweed)
 puncturevine
 purslane, common
 rockpurslane,
 redwax
 shepherdspurse

Scientific Name
Lamium amplexicaule
Polygonum aviculare
Chenopodium album
Amaranthus spp.
Tribulus terrestris
Portulaca oleracea
Calandrinia caulescens
Capsella bursa-pastoris

Surflan A.S. provides partial control or suppression of:

Common Name
 fluree, redstem
 fluree, whitestem
 groundsel, common
 ladythumb
 lettuce, prickly
 mallow, common
 milkweed, climbing
 morningglory, annual
 mustard, black
 mustard, wild
 nightshade, black
 prickly side (tearweed)
 ragweed, common
 ragweed, giant
 rocket, London
 smartweed, annual
 sowthistle, annual
 spurge, prostrate
 spurge, spotted
 velvetleaf

Scientific Name
Erodium cicutarium
Erodium moschatum
Senecio vulgaris
Polygonum persicaria
Lactuca scariola
Melva neglecta
*Sarcostemma
 cynanchoides*
Ipomoea spp.
Brassica nigra
Sinapis arvensis
Solanum nigrum
Sida spinosa
Ambrosia artemisiifolia
Ambrosia trifida
Silybum lilo
Polygonum spp.
Sonchus oleraceus
Euphorbia humifusa
Euphorbia maculata
Abutilon theophrasti

Approved Crops

Fruit and Nut Crops and Vineyards (Nonbearing and Bearing)

Surflan A.S. - Alone
 Apply Surflan A.S. to fruit and nut crops and vineyards as a preemergence treatment to control annual grasses and broadleaf weeds listed in "General Information". Surflan A.S. is approved for use on the following crops:

- | | | |
|---------|---------------|-----------------|
| almond | grapefruit | pear |
| apple | kiwi | pecan |
| apricot | lemon | pletachio |
| avocado | macadamia nut | plum |
| cherry | nectarine | pomegranate |
| fig | olive | prune |
| hibert | orange | walnut, English |
| grape | peach | |

Small Fruits:
 blackberry
 blueberry†
 boysenberry

currant
 dewberry
 elderberry

gooseberry
 loganberry
 raspberry

† Do not apply Surflan A.S. to lowbush blueberries.

Broadcast Application Rates

Soil Texture	Length of Control	Surflan A.S. (quarts/acre)
All Soil Textures	Short Term (2-4 months)	2
	Long Term (6-8 months)	4
	(8-12 months)	6

Chemigation: Surflan A.S. may be applied through properly equipped chemigation systems for weed control in fruit and nut orchards and vineyards. Refer to "Chemigation" in "General Information" for use directions. Do not apply

Surflan A.S. by chemigation unless these use directions are carefully followed.

Apply Surflan A.S. by chemigation prior to weed germination or immediately after existing weeds have been controlled. Control existing unwanted vegetation by tillage or with a contact or translocated herbicide. Use broadcast application rates recommended for Surflan A.S. alone. Apply in sprinkler irrigation equal to 1/2 to 1 inch of water on medium to fine textured or high organic matter soils.

Surflan A.S. - Tank Mix

Recommendations
 The products listed below are compatible with Surflan A.S. when used in tank mix combination. Performance and risk of carryover from products listed below when used in combination with Surflan A.S. at recommended rates is the same as when each product is used separately. Follow tank mixing instructions provided in the "General Information" section of this label when mixing Surflan A.S. with other products.

Users should always consult the manufacturer's label for the product(s) to be tank mixed with Surflan A.S. for specific information on use rates, additional weeds controlled, rotational crop restrictions or risk of carryover, special tank mix instructions, additional use directions, precautions and limitations. Note: Some crop uses of tank mix products are limited to or excluded from certain states. Such limitations are specified in the label of the product to be tank mixed with Surflan A.S.

Recommended Surflan A.S. Tank Mix Combinations:

- Surflan A.S. plus Goal
- Surflan A.S. plus Goal plus Gramoxone Super†
- Surflan A.S. plus Gramoxone Super
- Surflan A.S. plus Princep (Simazine)
- Surflan A.S. plus Roundup
- Surflan A.S. plus Solfican

† Use of a nonionic surfactant such as Ortho X-77 or Triton AG-90 is recommended with this 3-way

Page 9

tank mix combination to improve the compatibility of these herbicides when mixed together. Fill the spray tank one-third to one-half (1/3 to 1/2) full with clean water. With agitation running, add either one (1) quart of X-77 or two (2) quarts of Triton AG-98 per 100 gallons of spray mixture. Add the recommended amount of Surflan A.S. and mix thoroughly. Continue filling the spray tank and add Goal. Then add Gramoxone Super. If a nonionic spreader is being used, add it to the tank last. Apply in at least 50 gallons of water per acre.

Surflan A.S. - Tank Mix

Reference Table:

The following table lists approved crops for Surflan A.S. and products for tank mixes with Surflan A.S.

(** = Approved Crop). Refer to the table to determine if the herbicides recommended for tank mixing can be applied to your crop. For use on a given crop, two asterisks must be indicated for Surflan A.S. and the product with which it is to be tank mixed.

	Surflan A.S.	Goal	Gramoxone Super	Pronto (Surflame)	Roundup	Solam
Almond	**	**	**	**	**	**
Apple	**	**	**	**	**	**
Apricot	**	**	**	—	**	**
Avocado	**	**	**	**	**	—
Cherry	**	**	**	**	**	—
Fig	**	**	**	—	**	—
Filbert	**	**	**	**	**	**
Grape	**	**	**	**	**	**
Grapefruit	**	—	**	**	**	**
Kiwi	**	**	**	—	**	—
Lemon	**	—	**	**	**	**
Macadamia Nut	**	**	**	**	**	—

	Surflan A.S.	Goal	Gramoxone Super	Pronto (Surflame)	Roundup	Solam
Nectarine	**	**	**	—	**	**
Olive	**	**	**	**	**	—
Orange	**	—	**	**	**	**
Peach	**	**	**	**	**	**
Pear	**	**	**	**	**	**
Pecan	**	**	**	**	**	**
Pistachio	**	**	**	—	**	—
Pituit	**	**	**	**	**	**
Pomegranate	**	**	—	—	**	—
Prune	**	**	**	—	**	**
Walnut, English	**	**	**	—	**	**

	Surflan A.S.	Goal	Gramoxone Super	Pronto (Surflame)	Roundup	Solam
Small Fruits:						
Blackberry	**	—	**	**	**	**
Blueberry	**	—	**	**	**	**
Boysenberry	**	—	**	**	**	—
Currents	**	—	—	—	**	—
Dewberry	**	—	—	—	**	—
Elderberry	**	—	—	—	**	—
Gooseberry	**	—	—	—	**	—
Loganberry	**	—	—	**	**	—
Raspberry	**	—	**	**	**	**

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.). Do not apply to Douglas-fir (*Pseudotsuga menziesii*). Do not apply to seedbeds or seedling transplant beds. Apply only to established plantings. Established plantings 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.

Broadcast Application Rates

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

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 label of the product to be tank mixed with Surflan A.S. 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.

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.

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. Crop 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 temperatures, 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 DowElanco 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 DowElanco or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.