



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 10 1993

Douglas M. Roby
DOWELANCO
Quad IV 9002 Purdue Rd
Indianapolis, IN 46268

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Subject: Label Amendment Submission of 08/17/93 in Response to PR Notice 93-7
EPA Reg. No. 62719-112
SURFLAN A.S. HERBICIDE

IMPORTANT NOTICE: This Letter Requires You to Submit a Notification to the Office of Compliance Monitoring within 20 Days.

Dear Registrant:

The labeling cited above and submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is accepted subject to the comments listed on the enclosed sheet. A copy of your proposed labeling stamped "ACCEPTED WITH COMMENTS" is enclosed.

SERIOUS ERROR(S) ON SUBMITTED LABELING:

EPA has determined that one or more of the errors on the labeling you submitted to the Agency is categorized as "serious" as defined in PR Notice 93-11. In general, serious errors are those that may create a potential for harm to workers, handlers, other persons, or the environment; or those that prevent the achievement of the basic goals of the Worker Protection Standard (WPS) or FIFRA.

YOU MUST NOT SELL OR DISTRIBUTE (INCLUDING RELEASE FOR SHIPMENT) ANY PRODUCT BEARING THE SUBMITTED LABELING. Sale or distribution of any product with the incorrect labeling is a violation of FIFRA that could result in initiation of an action for civil penalties and/or cancellation of your product. This matter has been referred to the Office of Compliance Monitoring (OCM) for further action.

YOU MUST SUBMIT A NOTIFICATION TO THE OFFICE OF COMPLIANCE MONITORING WITHIN 20 DAYS OF THE DATE OF THIS LETTER.



Recycled/Recyclable
Printed with Soy/Canada Ink on paper that
contains at least 50% recycled fiber

Each notification must include the following information:

1. Registrant's name and address.
2. EPA Registration number of the product for which the labeling was submitted.
3. Whether any product already has been sold or distributed (this includes released for shipment) bearing the submitted labeling.

In addition, the notification must include the following information, IF you have already sold or distributed any product bearing the submitted labeling:

1. Quantity of the product that has been sold or distributed.
2. EPA Producing Establishment number.
3. Location of the product, if known.
4. Proposed plan for assuring that product with the incorrect labeling in your control, as well as that in the hands of dealers/distributors/users, will be corrected. The plan must include your proposal for assuring that the labeling is corrected as soon as possible.

Submit the notification to:

Michael Wood, Director
Compliance Division, (7203)
Worker Protection Notification
Office of Compliance Monitoring
U.S. Environmental Protection Agency
401 M Street SW
Washington, DC 20460

Failure to submit a notification also may result in initiation of an action under FIFRA for civil penalties, if you sold or distributed (this includes released for shipment) product bearing the incorrect labeling.

IN ADDITION, YOU SHOULD CONTACT IMMEDIATELY THE PERSONS TO WHOM YOU SOLD OR DISTRIBUTED YOUR PRODUCT AND INFORM THEM NOT TO SELL OR DISTRIBUTE ANY PRODUCT WITH THE INCORRECT LABELING.

WHAT THIS ACCEPTANCE MEANS:

Based on your certification, the Agency has accepted the labeling changes that are necessary to comply with the WPS labeling requirements of 40 CFR part 156, subpart K, described in PR Notices 93-7 and 93-11. Any other labeling changes submitted in connection with this amendment application but not directly related to compliance with the WPS have neither been reviewed nor accepted by the Agency. If you wish to make such changes, you must submit a separate amendment application proposing them. If your product is currently suspended, the acceptance of this labeling amendment does not affect the suspension in any way.

WHAT YOU NEED TO DO NEXT:

Submit the required notification. Then by the next label printing make all the specified changes to your labeling. Send to EPA one (1) copy of the final printed labeling:

- **BEFORE** selling or distributing any product bearing the final printed labeling as amended

AND

- **WITHIN** one year from date of this acceptance.

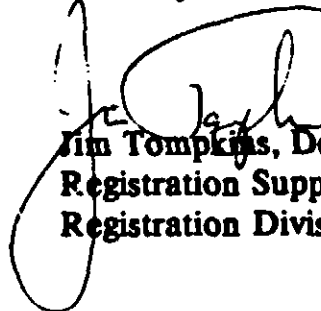
Submit the final printed labeling via the U.S. Postal Service to:

Document Processing Desk (FIN-LABEL)
Office of Pesticide Programs (7505C)
U.S. Environmental Protection Agency
401 M Street, SW
Washington, D.C. 20460-0001

Hand or courier deliveries of final labeling may be made to:

Document Processing Desk (FIN-LABEL)
Office of Pesticide Programs
Room 266A, Crystal Mall 2
1921 Jefferson Davis Highway
Arlington, VA 22202

Sincerely,



Jim Tompkins, Deputy Chief
Registration Support Branch
Registration Division (7505W)

Attachment

cc: Office of Compliance Monitoring

DOWELANCO
62719-112 08/12/93
SURFLAN A.S. HERBICIDE

The eyewear requirement for "applicators and other handlers" in the "Personal Protective Equipment" section on your proposed labeling is missing or incorrect. Remove the incorrect requirement (if any) and add "Protective Eyewear". The exact location is shown in Sections A and B on Part 1 of the Product Worksheet in Supplement Three-A to PR Notice 93-7.

You must add an Agricultural Use Requirements box to your main label that refers to the Agricultural Use Requirements box in your proposed supplemental labeling. Use the exact text and placement as shown on page 43 in Supplement Three to PR Notice 93-7.

The eyewear requirement for early entry in the Agricultural Use Requirements Box on your proposed labeling is missing or incorrect. Remove the incorrect requirement (if any) and add "Protective eyewear". The exact location is shown in Sections F and G on Part 2 of the Product Worksheet in Supplement Three-A to PR Notice 93-7.

8/9/93

WPS Labeling

(Editor's Note: Deleted text indicated by strike-through and added text underlined)

[Laminated Booklet - Surflan AS, 2.5 gal]
[Front Cover of Booklet]

[This copy revised per EPA copy of 4/11/92]
[This laminated booklet supersedes 900-001648]

(logo) **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-N⁴, N⁴-dipropylsulfanilamide . 40.4%
Inert Ingredients . 59.6%
Contains four pounds of active ingredient per gallon.

Keep Out of Reach of Children

CAUTION

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 "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.

Shake Well Before Using.

EPA Reg. No. 62719-112
20121

EPA Est. 37429-GA-01
900-001853

*Trademark of DowElanco
DowElanco • Indianapolis, IN 45268, U.S.A.

Herbicide

Net Contents 2.5 gal

ACCEPTED
with COMMENTS
in EPA Letter Dated

DEC 10 1993

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.

62719-112

8/9/93

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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 • 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.~~

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

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

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

User Safety Recommendations

Users should:

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

First Aid

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

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

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

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

Environmental Hazards

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

WPS Labeling**(Editor's Note: Deleted text indicated by strike-through and added text underlined)**[Laminated Booklet -- Surflan AS, 2.5 gal]
[Front Cover of Booklet][This copy revised per EPA copy of 4/11/92]
[This laminated booklet supersedes 900-001648](logo) **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-*N*⁴, *N*⁴-dipropylsulfanilamide . 40.4%

Inert Ingredients . 59.6%

Contains four pounds of active ingredient per gallon.

Keep Out of Reach of Children**CAUTION****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 "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.

Shake Well Before Using.EPA Reg. No. 62719-112
20121EPA Est. 37429-GA-01
900-001853*Trademark of DowElanco
DowElanco • Indianapolis, IN 46268, U.S.A.**Herbicide****Net Contents 2.5 gal**ACCEPTED
with COMMENTS
in EPA Letter Dated

DEC 10 1993

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.62719-112

8/9/83

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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 • 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.~~

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

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

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

User Safety Recommendations

Users should:

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

First Aid

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

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

If swallowed: Do not induce vomiting. Call a physician or Poison Control Center. If available, administer activated charcoal (6-8 heaping 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.

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.

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

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exemptions 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

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 tillage 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.

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 sprayer 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 3/4 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.

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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 1 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 the 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 fertilizers 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 (Witco 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-Multz 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. Blendex (Helena Chemical, Cayce-West, Columbia, SC)
Not for use in California.
9. Spray-Aide (Miller Chemical and Fertilizer Corp., Hanover, PA)

Application 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 nonuniform 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 connected 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. Surfilar 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. Surfilar A.S. may cause some staining of plastic hoses and tanks
12. Apply Surfilar A.S. in sprinkler irrigation equal to 1/2 to 1 inch of water.

Chemigation System Calibration: Sample calculation for use of Surfilar 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 Surfilar 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 Surfilar A.S. to an equal amount of water in the injection tank (ratio Surfilar A.S. to water = 1:1). Meter the mixture into the irrigation system during the entire irrigation period. Additional dilution of Surfilar 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 Surfilar A.S. should not be injected into chemigation systems.

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Weeds and Grasses Controlled in Fruit and Nut Crops and Vineyards

Annual Grasses

<u>Common Name</u>	<u>Scientific Name</u>
barley, little	<i>Hordeum pusillum</i>
barnyardgrass (watergrass)	<i>Echinochloa crus-galli</i>
bluegrass, annual (poa)	<i>Poa annua</i>
brachiaria (signalgrass)	<i>Brachiaria</i> spp.
browntop panicum	<i>Panicum fasciculatum</i>
crabgrass	<i>Digitaria</i> spp.
(large crabgrass)	
(smooth crabgrass)	
crowfootgrass	<i>Dactyloctenium aegyptium</i>
cupgrass	<i>Eriochloa gracilis</i>
downy brome	<i>Bromus tectorum</i>
fall panicum	<i>Panicum dichotomiflorum</i>
(spreading panicgrass)	
foxtails	<i>Setaria</i> spp.
(bottlegrass)	
(bristlegrass)	
(giant foxtail)	
(green foxtail)	
(pigeongrass)	
(robust foxtail)	
(yellow foxtail)	
guineagrass	<i>Panicum maximum</i>
(narrowleaf panicum)	
johnsongrass (seedling only)	<i>Sorghum halepense</i>
jungle rice	<i>Echinochloa colonum</i>
lovegrass, Mexican	<i>Eragrostis mexicana</i>
lovegrass, orcutt	<i>Eragrostis orcuttiana</i>
oat, wild	<i>Avena fatua</i>
ryegrass, annual (italian)	<i>Lolium multiflorum</i>
sandbur, field	<i>Cenchrus incertus</i>
sprangletop, red	<i>Leptochloa filiformis</i>
Texas panicum	<i>Panicum texanum</i>
(buffalograss)	
(Coloradograss)	
witchgrass	<i>Panicum capillare</i>

Approved Crops

Fruit and Nut Crops and Vineyards (Non-bearing 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	pistachio
avocado	macadamia nut	plum
cherry	nectarine	pomegranate
fig	olive	prune
filbert	orange	walnut, English
grape	peach	

Small Fruits:

blackberry	currant	gooseberry
blueberry†	dewberry	loganberry
boysenberry	elderberry	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 Solicam

†Use of a nonionic surfactant such as Ortho X-77 or Triton AG-98 is recommended with this 3-way 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.

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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	Princep (Simazine)	Roundup	Solcam
Almond	**	**	**	**	**	**
Apple	**	**	**	**	**	**
Apricot	**	**	**	-	**	**
Avocado	**	**	**	**	**	-
Cherry	**	**	**	**	**	-
Fig	**	**	**	-	**	-
Filbert	**	**	**	**	**	**
Grape	**	**	**	**	**	**
Grapefruit	**	-	**	**	**	**
Kiwi	**	**	**	-	**	-
Lemon	**	-	**	**	**	**
Macadamia nut	**	**	**	**	**	-
Nectarine	**	**	**	-	**	**
Olive	**	**	**	**	**	-
Orange	**	-	**	**	**	**
Peach	**	**	**	**	**	**
Pear	**	**	**	**	**	**
Pecan	**	**	**	**	**	**
Pistachio	**	**	**	-	**	-
Plum	**	**	**	**	**	**
Pomegranate	**	**	-	-	**	**
Prune	**	**	**	-	**	**
Walnut, English	**	**	**	-	**	**

Small Fruits:

Blackberry	**	-	**	**	**	**
Blueberry	**	-	**	**	**	**
Boysenberry	**	-	**	**	**	-
Currants	**	-	-	-	**	-
Dewberry	**	-	-	-	**	-
Elderberry	**	-	-	-	**	-
Gooseberry	**	-	-	-	**	-
Loganberry	**	-	-	**	**	-
Raspberry	**	-	**	**	**	**

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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
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.

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[Base Label of Laminated Booklet]

(logo) Dow Elanco

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-N⁴, N⁴-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.~~

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

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

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

User Safety Recommendations

Users should:

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

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First Aid

If in eyes: Flush with plenty of water. Get medical attention if irritation develops.
If on skin: Wash with plenty of soap and water. Get medical attention if irritation develops.
If swallowed: Do not induce vomiting. Call a physician or Poison Control Center. If available, administer activated charcoal (6-8 heaping 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.

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.

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
20121

EPA Est. 37429-GA-01
900-001853

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Herbicide

Net Contents 2.5 gal

Label text is based on EPA accepted copy dated 04/11/92

WPS revisions 06/10/93

Amendments:

- 1) Added labels statements required by the Worker Protections Standard (PR Notice 93-7).