

PM 23 62719-120

FILED



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

JAN 14 1994

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DOWELANCO  
Quad IV 9002 Purdue Road  
Indianapolis, IN 46268

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Subject: Label Amendment Submission of 08/18/93 in Response to PR Notice 93-7  
EPA Reg. No. 62719-120  
SONALAN E.C. HERBICIDE

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 reflected on the enclosed sheet. A copy of your proposed labeling stamped "ACCEPTED WITH COMMENTS" is enclosed.

**WHAT THIS ACCEPTANCE MEANS:**

Based on your certification, the Agency has accepted the labeling changes that are necessary to comply with the Worker Protection Standard (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 not been reviewed or 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:**

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



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

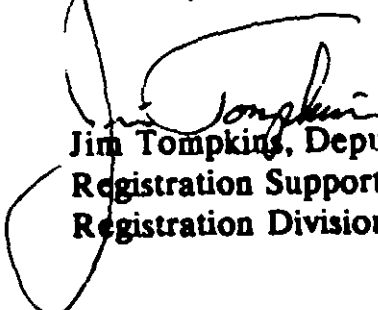
Submit the final printed labeling via the U.S. Postal Service to:

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 printed 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

8/17/93

3049

WPS Labeling: Label statements added to comply with Worker Protection Standard as per PR Notice 93-7.

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

EPA accepted text dated: 06-18-93

[Label Booklet]

(logo) DowElanco

# Sonalan\* E.C.

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

Active Ingredient:

ethan...uralin: *N*-ethyl-*N*-(2-methyl-2-propenyl)-2, 6-dinitro-4-(trifluoromethyl)benzenamine ..... 36.1%

Inert Ingredients ..... 63.9%

Contains 3 pounds active ingredient per gallon.

**Keep Out Of Reach Of Children**

## WARNING

## AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

(If you do not understand the label, find someone to explain it to you in detail.)

Refer to inside of label booklet for additional precautionary information including Personal Protective Equipment (PPE), and Directions for Use including Agricultural Use Requirements and 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 an emergency endangering health or the environment involving this product, call collect 517-636-4400.

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

Avoid Freezing - Store Above 40°F

EPA Est. 1471-IN-2

EPA Reg. No. 62719-120

\*Trademark of DowElanco

DowElanco • Indianapolis, IN 46268, U.S.A.

**Herbicide**

**Net Contents 2.5 gal**

ACCEPTED  
with COMMENTS  
in EPA Letter Dated

JAN 14 1994

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

62719-120

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**Precautionary Statements****Hazards to Humans and Domestic Animals****WARNING****AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

(If you do not understand the label, find someone to explain it to you in detail.)

Precaucion al usuario: Si usted no lee inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

**Sonalan E.C. Herbicide Is Irritating To The Eyes And Skin. Harmful If Swallowed Or Absorbed Through The Skin.**

**Avoid breathing vapors. Avoid contact with skin, eyes, or clothing. Do not contaminate foodstuffs or feed. ~~Use protective clothing such as coveralls, long-sleeved shirt and impermeable gloves when handling or using this product.~~**

**Personal Protective Equipment (PPE)**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category F on an EPA chemical resistance category selections chart.

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as Barrier Laminate, Butyl Rubber, Nitrile Rubber, or Viton
- Shoes plus socks
- Protective eye/ear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. 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**

In case of contact, immediately flush eyes or skin with plenty of water. For eyes, call a physician. Remove and wash contaminated clothing before reuse.

**Environmental Hazards**

This pesticide is toxic to fish. 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 by cleaning of equipment or disposal of wastes. Runoff or erosion from treated areas may be hazardous to fish in neighboring areas.

**BEST AVAILABLE COPY**

## Directions for Use

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

Read all Directions for Use carefully before applying.

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

### Agricultural Use Requirements

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

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

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

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves such as Barrier Laminate, Butyl Rubber, Nitrile Rubber, or Viton
- Shoes plus socks
- Protective eyewear

### Storage and Disposal

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

**Storage:** Avoid freezing. Store above 40°F (5°C). If frozen, poor weed control may result. Do not use or store near heat or open flame. Store in original container only. In case of leak or spill, use absorbent materials to contain liquids and dispose as waste.

**Pesticide Disposal:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of according to label instructions, contact your state pesticide or environmental control agency, or the hazardous waste representative at the nearest EPA Regional Office for guidance.

**Plastic 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.

**Metal Container Disposal:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

**Bulk/Mini-bulk Tank Handling:** Tanks that have been used for phenoxy-type herbicides should not be used for Sonalan E.C. To clean, triple rinse (or equivalent) and wash with appropriate cleaners before reusing.

BEST AVAILABLE COPY

## General Information

Sonalan E.C. is a preemergence herbicide that controls many annual grasses and broadleaf weeds. Sonalan E.C. controls weeds as they germinate. Sonalan E.C. will not control established weeds.

### **General Use Precautions**

Poor weed control and/or crop injury may result if directions are not followed. Uneven application, over application or improper incorporation can result in erratic weed control or injury to the treated or rotational crops.

Do not graze or forage crop grown in treated soil or cut for hay or silage.

Do not apply Sonalan E.C. to soils which are wet, cloddy, or subject to prolonged periods of flooding because poor weed control or crop injury may result.

Do not apply to any area not specified on the label.

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

### **Rotation Crop Restrictions**

#### **Replanting**

If replanting is required, replant only crops listed on the label for Sonalan E.C.

#### **Sugar Beets or Red Beets**

Do not plant sugar beets or red beets within 13 months following an application of three (3) pints per acre or more of Sonalan E.C. Where less than three (3) pints per acre of Sonalan E.C. have been applied, sugar beets or red beets may be planted no earlier than eight (8) months after an application and then only if the soil treated with Sonalan E.C. is moldboard plowed to a depth of at least 12 inches prior to planting.

#### **Spinach or Oats**

In California and Arizona, do not plant spinach or oats within eight (8) months following an application of three (3) pints per acre or more of Sonalan E.C.

#### **Special Rotational Crop Restrictions for the State of Montana**

Plant only spring seeded barley (grown under irrigated conditions), rapeseed (canola), safflower or sunflower as rotational crops in the crop year following the crop treated with Sonalan E.C. If one of these specified crops is not planted, the land should be left idle or fallow for the entire year following the crop treated with Sonalan E.C.

### **Mixing Directions**

#### **Sonalan E.C. - Alone**

Start with a clean spray tank. Fill sprayer one-third (1/3) to one half (1/2) full with clean water or liquid fertilizer. Start agitation. Add correct quantity of Sonalan E.C., continue agitation and finish filling the tank.

#### **Sonalan E.C. In Tank Mix**

Vigorous continuous agitation is required for all tank mixes. Sparger pipe agitators generally provide the best agitation in spray tanks.

**Mixing Order:** Fill the tank one-fourth (1/4) to one-third (1/3) full with clean water or liquid fertilizer. (See page X for additional liquid fertilizer mixing instructions). Start the agitation. Add different formulation types to the spray tank in the following order: dry flowables (DF), wettable powders (WP), aqueous suspensions (AS), flowables (F), or liquids (L). Allow each product type to completely disperse before adding another. Allow additional mixing and dispersion time when using dry flowable (DF) products. Continue agitation and fill tank to three-fourths (3/4) full, add the Sonalan E.C. or other emulsifiable concentrates (EC) and mix thoroughly. Then add any solution (S) formulations, agitate and finish filling. Maintain agitation during filling and through application. If spraying and agitation must be

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stopped before the tank is empty, the materials may settle to the bottom. In this case, it is important to resuspend all of the material in the bottom of the tank before continuing the spray application. A sparger agitator is particularly useful for this purpose. Sometimes it is more difficult to resuspend settled material than it is to suspend it originally.

Carefully follow all mixing instructions for each material added to the tank. Initial dispersion of dry or flowable formulations can be improved by mixing with a small amount of water (slurrying) and pouring the slurry through a 20 or 35 mesh wetting screen in the top of the spray tank. Line screens in the tank should be no finer than 50 mesh (100 mesh is finer than 50 mesh).

If a buildup of material on the walls of the spray tank is observed, wash the tank with soapy water between fillings. Rinse and continue the spraying operation. Clean the tank, lines and screens thoroughly after use. Check the sprayer daily to ensure proper calibration and uniform application. Do not apply Sonalan E.C. under wind conditions which may cause spray drift to nontarget areas or non-uniform application.

### Application Directions

**Ground Application:** Apply Sonalan E.C. in at least five (5) gallons of water or liquid fertilizer per acre (broadcast basis), using any properly calibrated, low pressure herbicide sprayer that will apply the spray uniformly.

#### Application with Liquid Fertilizer

Sonalan E.C. may be mixed with most liquid fertilizer materials. Combinations of Sonalan E.C. with solutions and suspension type fertilizers provide weed and grass control equal to the same rates of Sonalan E.C. applied in water. For application in liquid fertilizer, follow label recommendations regarding crops, application rates, incorporation directions and precautions for Sonalan E.C. alone.

Compliance with 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.

**Liquid Fertilizer Mixing Instructions:** Emulsifiable concentrates, such as Sonalan E.C., can be mixed with liquid fertilizers. In all cases, continuous agitation is required to prevent the Sonalan E.C. from rising to the surface as an oily layer. When necessary, (see "Testing for Tank Mix Compatibility in Liquid Fertilizers") a compatibility agent can be used to ensure that the Sonalan E.C. emulsifies properly (i.e. forms a uniform mixture with a milky appearance rather than an oily layer). The use of compatibility agents is especially important when tank mixing emulsifiable concentrates (EC) with dry flowables (DF), wettable powders (WP), flowables (F), liquids (L), aqueous suspensions (AS), or solutions (S) in liquid fertilizer. If the emulsion is not properly formed and the EC rises to the surface of the fertilizer as an oil ("oils out"), the oil may combine with the wettable powder, flowable, or suspension to form oily curds (viscous phase) which are difficult to disperse.

Any one of the following compatibility agents is helpful in causing emulsifiable concentrates to form non-oily mixtures with liquid fertilizers. These compatibility agents can be used at rates as low as one and one-half (1 1/2) to two (2) pints per ton of liquid fertilizer and should be mixed well with the fertilizer before adding the emulsifiable concentrate.

Read the label on the compatibility agent and follow the directions.

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-Mutz 734-2 (Thompson-Hayward Chemical Co., Kansas City, MO). Not for use in California.
5. Rigo Compatibility Agent (Rigo Company, Buckner, KY).
6. Amoco Spray Mate - (Amoco Oil Co., Chicago, IL). Not for use in California.
7. Kern-Link (Universal Coop, Minneapolis, MN).
8. Blendex (Helena Chemical Co., Cayce-West Columbia, SC).
9. Spray-Aide (Miller Chemical and Fertilizer Corp., Hanover, PA).



Each of the above is a phosphate ester type surfactant designed to be used with liquid fertilizers. They usually do not work well as compatibility agents in tank mixtures in water.

**Testing for Tank Mix Compatibility in Liquid Fertilizers:** Emulsifiable concentrates alone or in tank mixture with dry flowables (DF), wettable powders (WP), liquids (L), flowables (F), aqueous suspensions (AS), or solutions (S) may not combine properly with some fluid fertilizer materials. Small quantities should always be tested before full-scale mixing. This will determine whether a compatibility agent is needed and which agent does the best job. The nine (9) agents listed above have been thoroughly tested. There are many other surfactants on the market which were not designed for use with liquid fertilizers.

Use the following test to select the correct agent for your mixture.

1. Add one (1) pint of the liquid fertilizer to a quart jar.
2. Add one (1) to four (4) teaspoonful(s) of the DF, WP, L, F, or AS formulations (depending on the recommended rate per acre) to the liquid fertilizer. Close jar and agitate until dispersed evenly in the fertilizer. If the materials do not disperse well, it may be necessary to slurry the chemicals in water before adding to the fertilizer.
3. After dispersing the materials (Step 2), add three (3) to four (4) teaspoonfuls of the Sonalan E.C. to the jar and shake well. Add solution herbicides to the mixture last and agitate. Observe the jar for about 10 minutes. If the materials rise to the surface and form a thick layer (oily curds) which will not disperse when agitated, a compatibility agent is needed. If the mixture is easily dispersed to its original state with slight agitation, no agent is needed, but good agitation must be provided in the fertilizer spray tank.
4. If the need for a compatibility agent is shown in Step 3, use a clean quart jar, and starting at Step 1 above, add one-half (1/2) teaspoonful of the compatibility agent to the liquid fertilizer. Mix well. Repeat Steps 2 and 3.

An effective compatibility agent will cause the mixture to remain uniformly mixed with little or no separating or oil rising to the surface for one-half (1/2) hour or longer. If slight separation does occur, two (2) to three (3) inversions of the jar should give a uniform remix. If oily curds form which will not disperse, more agent or another agent should be tried.

Use a clean jar for each test. The compatible mixture will have a uniform appearance and will be relatively easy to keep mixed with gentle agitation of the jar.

#### **Application with Dry Bulk Fertilizer**

Dry bulk fertilizer may be impregnated or coated with Sonalan E.C. Application of dry bulk fertilizer impregnated with Sonalan E.C. provides weed and grass control equal to the same rates of Sonalan E.C. applied in liquid carriers. Follow label recommendations regarding crops, application rates, and precautions for Sonalan E.C. alone.

**Application and Incorporation:** Spread the fertilizer/chemical mixture with properly calibrated application equipment. Be certain the material is applied uniformly to the soil surface. Sonalan E.C. should be incorporated 2 times when impregnated on dry bulk fertilizer. The first incorporation should occur within 24 hours after application. The second incorporation should be delayed 3 to 5 days after the first and be completed prior to planting.

Compliance with individual state regulations relating to dry bulk fertilizer blending, registration, labeling and application are the responsibility of the individual and/or company offering the fertilizer and chemical mixture for sale.

**Limitations:** Apply a minimum of 200 pounds per acre of dry fertilizer impregnated with Sonalan E.C. at the recommended rate. Most dry fertilizers can be used for impregnation with Sonalan E.C. When coated ammonium nitrate and/or limestone are used alone, do not impregnate with Sonalan E.C. These materials will not absorb the herbicide. Blends containing a mixture of these materials can be impregnated.

**Impregnation:** Use any closed drum, belt, ribbon or other commonly used dry bulk fertilizer blender. Nozzles used to spray the Sonalan E.C. onto the fertilizer should be placed to provide uniform spray coverage. Add water to the Sonalan E.C. to give a total volume of at least six (6) pints per ton of fertilizer.

### Grasses and Broadleaf Weeds Controlled by Sonalan E.C.

Sonalan E.C. applied preplant soil incorporated will control the following weeds:

#### Grasses:

##### Common Name

##### Scientific Name

annual bluegrass

*Poa annua*

barnyardgrass

*Echinochloa crus-galli*

crabgrass

*Digitaria* spp.

(large crabgrass)

(small crabgrass)

Cupgrass, woolly

*Eriochloa villosa*

foxtail

*Setaria* spp.

(giant foxtail)

(green foxtail)

(foxtail millet)

(pigeongrass)

(yellow foxtail)

johnsongrass (from seed)

*Sorghum halepense*

junglerice

*Echinochloa coloum*

oat, wild†

*Avena fatua*

panicum, fall

*Panicum dichotomiflorum*

panicum, Texas

*Panicum texanum*

(buffalograss)

(Colorado grass)

ryegrass, Italian

*Lolium multiflorum*

(annual ryegrass)

sandbur, field

*Cenchrus incertus*

shattercane

*Sorghum bicolor*

(wild cane)

signalgrass, broadleaf

*Brachiaria platyphylla*

(brachiaria)

witchgrass

*Panicum capillare*

**Broadleaf Weeds:**

<u>Common Name</u>	<u>Scientific Name</u>
buckwheat, wild	<i>Polygonum convolvulus</i>
carpetweed	<i>Mollugo verticillata</i>
catchfly, conical	<i>Silene conica</i>
chickweed, common	<i>Stellaria media</i>
fiddleneck tarweed	<i>Amsinckia lycopsoides</i>
groundcherry†† (annual)	
(lanceleaf	<i>Physalis lanceifolia</i>
groundcherry)	
(Wright's	<i>Physalis wrightii</i>
groundcherry)	
henbit	<i>Lamium amplexicaule</i>
kochia	<i>Kochia scoparia</i>
lambquarters, common	<i>Chenopodium album</i>
nightshade†† (annual)	<i>Solanum</i> spp.
(black nightshade)	
(eastern black	
nightshade)†††	
(hairy nightshade)	
pigweed	<i>Amaranthus</i> spp.
(prostrate pigweed)	
(redroot pigweed)	
(smooth pigweed)	
(tumble pigweed)	
purslane, common	<i>Portulaca oleracea</i>
pusley, Florida	<i>Richardia scabra</i>
rockpurslane, redmaids	<i>Calandrinia caulescens</i>
thistle, Russian	<i>Salsola kali</i>

†Sonalan E.C. will provide wild oat control except those germinating below the zone treated with Sonalan E.C.

††See special instructions for control in dry bean.

†††See special instructions for partial control in soybean.

### Soil Preparation

Factors that influence uniform application and incorporation of Sonalan E.C. are:

**Crop Residues or Existing Weeds:** Ground cover, such as crop residues or existing weeds can interfere with the incorporation of Sonalan E.C. into the soil. A manageable level of such ground cover will allow the Sonalan E.C. to be uniformly mixed into the top two (2) to three (3) inches of soil. If the level of the ground cover is such that this cannot be done, the soil must be tilled prior to the application of Sonalan E.C.

**Soil Roughness:** The soil surface should be smooth enough so that you can operate a sprayer and incorporation equipment efficiently and at speeds which ensure a uniform application and incorporation of Sonalan E.C.

**General Soil Conditions:** To assure uniform incorporation of Sonalan E.C., soil moisture conditions should be such that large clods can be broken up during the incorporation process.

### Soil Incorporation Directions

Use incorporation equipment that thoroughly and uniformly mixes Sonalan E.C. into the top two (2) to three (3) inches of the seedbed, or erratic weed control and/or crop injury may result.

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**Incorporation Before Planting**

Sonalan E.C. may be applied and incorporated up to three (3) weeks prior to planting. Thoroughly and uniformly mix Sonalan E.C. into the top two (2) to three (3) inches of the seedbed within two (2) days after application.

**Incorporation In Bedded Culture**

**Application prior to bedding:** Apply Sonalan E.C. and mix thoroughly into the top two (2) to three (3) inches of soil. The bedding operation provides additional mixing. Do not expose untreated soil during post-bedding operations.†

**Application after bedding:** Knock off beds to planting height before applying Sonalan E.C. Apply Sonalan E.C. and mix thoroughly with equipment that will conform to the bed shape. Do not expose untreated soil during the incorporation process.†

†Avoid removal of treated soil from the seedbed before or during the planting operation. Exposure of untreated soil during planting will allow weeds to germinate in the drill row.

**Cultivation after Planting**

Soil treated with Sonalan E.C. may be shallowly cultivated without reducing the weed control activity of Sonalan E.C. Do not cultivate deeper than the treated soil since weeds may germinate where untreated soil is brought to the surface.

**Soil Texture Guide for Application Rates**

Rate recommendations for Sonalan E.C. are based on "Soil Texture Class" (coarse, medium or fine) and soil organic matter content. A fine textured soil (e.g., clay loam) will require higher application rate than a coarse textured soil (e.g., loamy sand). In the table below, find the "Soil Texture Class" (coarse, medium or fine) corresponding to the "soil texture classification of the soil to be treated". Choose the proper rate for each application based on the "soil texture classification" and specific crop recommendations. Do not exceed recommended rates required to control target weed species as determined by soil texture and organic matter.

Soil Texture Group	Soil Texture Classification of the Soil to be Treated
Coarse soils: (Light)	Sand, loamy sand, sandy loam
Medium soils:	Loam, silty clay loam†, silt loam, silt, sandy clay loam†
Fine soils: (Heavy)	Clay, clay loam, silty clay loam†, silty clay, sandy clay, sandy clay loam†

†Silty clay loam and sandy clay loam soils are transitional soils and may be classified as either medium or fine textured soils. If silty clay loam or sandy clay loam soils are predominantly sand or silt they are usually classified as medium textured soils. If they are predominantly clay, they are usually classified as fine textured soils.

Where a rate range is shown for Sonalan E.C., use the lower rate in the rate range for coarser textured soils within the "soil texture group" or for soils with lower organic matter. Use the higher rate in the rate range for finer textured soil within the "soil texture group" or for soils with more than five percent (5%) organic matter. Where soil texture is variable within the same field use the higher recommended rate of Sonalan E.C. for the most coarse "soil texture group" represented within the field. Sonalan E.C. is not recommended for use on soils containing more than 10% organic matter.

## Approved Crops

### SOYBEANS

#### Sonalan E.C. - Alone

General weed control, except groundcherry and nightshade: Apply Sonalan E.C. as a preplant incorporated treatment. Follow soil preparation, application, and incorporation procedures recommended in the "General Information" section of this label.

#### Broadcast Rates/Acre

Soil Texture	Sonalan E.C. (pints)
Coarse	1 1/2 - 2
Medium	2 - 2 1/2
Fine	2 1/2 - 3

General weed control and partial control of eastern black nightshade: Apply Sonalan E.C. as a preplant incorporated treatment for partial control of eastern black nightshade on medium and fine textured soils. Follow soil preparation, application, and incorporation procedures recommended in the "General Information" section of this label. Two incorporation passes are required for partial control of eastern black nightshade.

#### Broadcast Rates/Acre

Soil Texture	Sonalan E.C. (pints)
Medium	3
Fine	3 1/2

**Precaution:** Soybeans should be planted no more than two (2) inches deep after early season adverse weather conditions have passed, especially when using higher rate programs. Excessively deep planting or cool, wet weather early in the growth cycle causes additional stress to the soybean plant. These factors may result in reduced stands, delayed maturity and reduced yields.

#### Sonalan In Tank Mix Combination

For broader spectrum weed control, Sonalan E.C. may be used in tank mix combination with Canopy, Command, Dual, Lasso, Lasso Micro-Tech, Lexone, Preview, Sencor or Vernam herbicides. Consult each manufacturer's label for additional weeds controlled, directions for use, cautions and limitations before use.

Refer to supplemental labeling for Sonalan E.C. for tank mixing instructions for Sonalan E.C. plus Command, Sonalan E.C. plus Command and Lexone, or Sonalan E.C. plus Command and Sencor.

Do not use Scepter in tank mix combination with Sonalan E.C.

#### Overlay Treatments Following Application of Sonalan E.C. (Do Not Use In California)

Apply Sonalan E.C. as a preplant incorporated treatment. For broader spectrum weed control, Sonalan E.C. preplant incorporated treatment may be followed by preemergence overlay treatments with products registered for use on soybeans. Consult each manufacturer's label for additional weeds controlled, directions for use, cautions and limitations before use. Do not use Scepter as an overlay preemergence treatment following a preplant incorporated treatment with Sonalan E.C.

### Postemergence Treatments Following Application of Sonalan E.C. (Do Not Use in California)

Apply Sonalan E.C. as a preplant incorporated treatment. For broader spectrum weed control, Sonalan E.C. preplant incorporated treatment may be followed by postemergence or layby treatments using products registered for use on soybeans. Consult each manufacturer's label for additional weeds controlled, directions for use, cautions and limitations before use. Do not use Scepter as a postemergence treatment following a preplant incorporated treatment with Sonalan E.C.

#### DRY BEAN

(Does not include soybean)

#### Sonalan E.C. - Alone

General weed control, except groundcherry and nightshade: Apply Sonalan E.C. as a preplant incorporated treatment. Follow soil preparation, application, and incorporation procedures recommended in the "General Information" section of this label.

#### Broadcast Rates/Acre

Soil Texture	Sonalan E.C. (pints)
Coarse	1 1/2-2
Medium	2-2 1/2
Fine	2 1/2-3

General weed control and control of annual groundcherry and nightshade from seed: Apply Sonalan E.C. as a preplant incorporated treatment. Two incorporation passes are required for control of ground cherry and eastern black nightshade.

#### Broadcast Rates/Acre

Soil Texture	Sonalan E.C. (pints)
Coarse	3-3 1/2
Medium	3 1/2-4
Fine	4-4 1/2

#### Sonalan In Tank Mix Combination

For broader spectrum control, Sonalan E.C. may be used in tank mix combination with Dual, Eptam/EPTC, Lasso or Lasso Micro-Tech. Consult each manufacturer's label for additional weeds controlled, directions for use, cautions and limitations before use.

#### Overlay Treatments Following Application of Sonalan E.C.

Apply Sonalan E.C. as a preplant incorporated treatment. For broader spectrum weed control, Sonalan E.C. preplant incorporated treatment may be followed by preemergence overlay treatments with products registered for use on dry beans. Consult each manufacturer's label for additional weeds controlled, directions for use, cautions and limitations before use.

#### Postemergence Treatments Following Application of Sonalan E.C.

Apply Sonalan E.C. as a preplant incorporated treatment. For broader spectrum weed control, Sonalan E.C. preplant incorporated treatment may be followed by postemergence or layby treatments using products registered for use on dry beans. Consult each manufacturer's label for additional weeds controlled, directions for use, cautions and limitations before use.

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**PEANUT****Sonalan E.C. - Alone**

Apply Sonalan E.C. as a preplant incorporated treatment. Follow soil preparation, application, and incorporation procedures recommended in the "General Information" section of this label.

**Broadcast Rates/Acre**

Soil Texture	Sonalan E.C. (pints)
Coarse	1 1/2-2
Medium	2-2 1/2
Fine	2 1/2-3

Do not graze or forage crop grown in treated soil or cut for hay or silage.

**Sonalan In Tank Mix Combination**

For broader spectrum control, Sonalan E.C. may be used in tank mix combination with Dual, Lasso, Lasso Micro-Tech, Pursuit or Vernam herbicides. Consult each manufacturer's label for additional weeds controlled, directions for use, cautions and limitations before use.

**Overlay, At-cracking and Postemergence Treatments Following Application of Sonalan E.C.**

Apply Sonalan E.C. as a preplant incorporated treatment. For broader spectrum weed control, Sonalan E.C. preplant incorporated treatment may be followed by preemergence overlay, at cracking and postemergence treatments with products registered for use on peanuts. Consult each manufacturer's label for additional weeds controlled, directions for use, cautions and limitations before use.

**SUNFLOWER****Sonalan E.C. - Alone**

General weed control - except groundcherry and nightshade: Apply Sonalan E.C. as a preplant incorporated treatment. Follow soil preparation, application, and incorporation procedures recommended in the "General Information" section of this label.

**Broadcast Rates/Acre**

Soil Texture	Sonalan E.C. (pints)
Coarse	1 1/2-2
Medium	2-2 1/2
Fine	2 1/2-3

Precaution: Do not graze or forage crop grown in treated soil or cut for hay or silage.

**Sonalan In Tank Mix Combination**

For broader spectrum control, Sonalan E.C. may be used in tank mix combination with Eptam/EPTC in the states of North Dakota, South Dakota and Minnesota. Consult the manufacturer's label for additional weeds controlled, directions for use, cautions and limitations before use.

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### Overlay Treatments Following Application of Sonalan E.C.

Apply Sonalan E.C. as a preplant incorporated treatment. For broader spectrum weed control, Sonalan E.C. preplant incorporated treatment may be followed by preemergence overlay treatments with products registered for use on sunflowers. Consult each manufacturer's label for additional weeds controlled, directions for use, cautions and limitations before use.

### DRY PEAS

(Not for Use in California)

#### Sonalan E.C. - Alone

General weed control - except groundcherry and nightshade: Apply Sonalan E.C. as a preplant incorporated treatment. Follow soil preparation, application, and incorporation procedures recommended in the "General Information" section of this label.

#### Broadcast Rates/Acre

Soil Texture	Sonalan E.C. (pints)
Coarse	1 1/2-2
Medium	2

**Precaution:** Do not exceed these Sonalan E.C. rates for weed control in dry peas or crop injury may occur. Not all varieties of peas have been tested for tolerance to Sonalan E.C. Consult your seed contractor before applying Sonalan E.C. to determine the tolerance of a particular pea variety. Application of Sonalan E.C. to non-tolerant pea varieties may result in crop injury and reduced yields. Do not graze or forage crop grown in treated soil or cut for hay or silage.

### 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



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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 remains on container after label booklet is removed.)

(logo) DowElanco

## Sonalan\* E.C.

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

**Active Ingredient:**

ethalfuralin: N-ethyl-N-(2-methyl-2-propenyl)-2, 6-dinitro-4-(trifluoromethyl)benzenamine . 36.1%

Inert Ingredients . 63.9%

Contains 3 pounds active ingredient per gallon.

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### Precautionary Statements

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#### Hazards to Humans and Domestic Animals

Keep Out Of Reach of Children

#### WARNING

#### AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

(If you do not understand the label, find someone to explain it to you in detail.)

Precaucion al usuario: Si usted no lee inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

Sonalan E.C. Herbicide Is Irritating To The Eyes And Skin. Harmful If Swallowed Or Absorbed Through The Skin

Avoid breathing vapors. Avoid contact with skin, eyes, or clothing. Do not contaminate foodstuffs or feed. ~~Use protective clothing such as coveralls, long-sleeved shirt and impermeable gloves when handling or using this product.~~

#### Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category F on an EPA chemical resistance category selections chart.

#### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as Barrier Laminate, Butyl Rubber, Nitrile Rubber, or Viton
- Shoes plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. 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**

In case of contact, immediately flush eyes or skin with plenty of water. For eyes, call a physician. Remove and wash contaminated clothing before reuse.

**Environmental Hazards**

This pesticide is toxic to fish. 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 by cleaning of equipment or disposal of wastes. Runoff or erosion from treated areas may be hazardous to fish in neighboring areas.

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**Directions for Use**

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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:** Avoid freezing. Store above 40°F (5°C). If frozen, poor weed control may result. Do not use or store near heat or open flame. Store in original container only. In case of leak or spill, use absorbent materials to contain liquids and dispose as waste.

**Pesticide Disposal:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of according to label instructions, contact your state pesticide or environmental control agency, or the hazardous waste representative at the nearest EPA Regional Office for guidance.

**Plastic 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.

**Metal Container Disposal:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

**Bulk/Mini-bulk Tank Handling:** Tanks that have been used for phenoxy-type herbicides should not be used for Sonalan E.C. To clean, triple rinse (or equivalent) and wash with appropriate cleaners before reusing.

Refer to label booklet for Directions for Use including Agricultural Use Requirements.

**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 an emergency endangering life or property involving this product, call collect 517-636-4400.

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

**Avoid Freezing - Store Above 40°F**

EPA Est. 1471-IN-2

EPA Reg. No. 62719-120

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**Herbicide**

**Net Contents 2.5 gal**