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59639-33

5/18/98

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ACCEPTED  
MAY 18 1998  
Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, for the pesticide  
registered under  
EPA Reg. No. 59639-33

# ORTHENE® 90 S

(INSECTICIDE)  
[INSECTICIDE IN A WATER-SOLUBLE BAG]

Active Ingredient	By Wt.
*Acephate (O,S-Dimethyl acetylphosphoramidothioate) . . . . .	90%
Inert Ingredients . . . . .	10%

\*ORTHENE®, Acephate U.S. Pat. No. 3,914,417

KEEP OUT OF REACH OF CHILDREN

## CAUTION

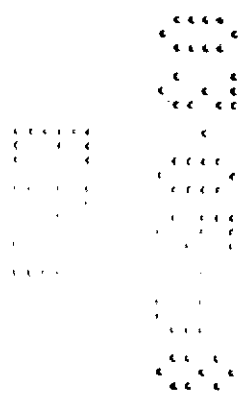
SEE BELOW FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

THIS PRODUCT MAY NOT BE REFORMULATED, REPACKAGED OR RELABELED.

Formulation for Eggs/DEADHATCH®

NET WEIGHT [5] [20] POUNDS

[Contains Two 2½ Lb. WSP Packets]  
[Contains One 20 Lb. WSP Packet]



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## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS & DOMESTIC ANIMALS

#### CAUTION

Harmful if swallowed. Causes eye irritation. Avoid contact with eyes, skin and clothing. Avoid breathing dust or spray mist. Wash hands thoroughly after handling.

#### STATEMENT OF PRACTICAL TREATMENT: Acephate is an organophosphate, cholinesterase inhibitor.

**If swallowed:** Drink 1 or 2 glasses of water (or milk) and induce vomiting by touching the back of the throat with finger. If possible contact a physician, Poison Control Center, or emergency center before inducing vomiting. Do not induce vomiting or give anything by mouth to an unconscious person. Take person and product container to the nearest emergency treatment center.

**If in eyes:** Wash eyes with fresh water for 15 minutes. If irritation continues, see a doctor.

**If on skin:** Wash skin with plenty of soap and water.

**If inhaled:** Remove person from exposure area.

**Note to Physicians:** Emergency Information - call 1-800-892-0099. Acephate is a cholinesterase inhibitor. If signs of cholinesterase inhibition appear, atropine is antidotal. 2-PAM may also be used in conjunction with atropine but should not be used alone.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE):

**Applicators and other handlers must wear:** long-sleeved shirt and long pants, waterproof gloves, shoes plus socks and chemical-resistant headgear for overhead exposure.

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.
- \* Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

#### ENVIRONMENTAL HAZARDS

This pesticide is toxic to birds. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Cover or soil - incorporate spills.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting treatment area.

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## DIRECTIONS FOR USE

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

**READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.**

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 24 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 and chemical-resistant headgear for overhead exposure.

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**DISCLAIMER, CONDITIONS OF SALE,  
LIMITED WARRANTY  
AND LIMITATION OF LIABILITY**

**IMPORTANT:** Read the entire Label including this Disclaimer, Limited Warranty and Limitation of Liability before using this product. If the terms are not acceptable, return the unopened product within 15 days of purchase.

**RISKS OF USING THIS PRODUCT**

It is impossible to eliminate all risks associated with the use of this product. Such risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, moisture conditions, irrigation practices, presence of other materials, cultural practices or the manner of use or application, all of which are factors beyond the control of Valent. All such risks shall be assumed by the Buyer. Valent shall not be responsible for losses or damages resulting from use of this product in any manner not set forth on the label. User assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

**LIMITED WARRANTY**

Valent warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the label, under average use conditions, when used strictly in accordance with the label and subject to the Risks of Using This Product described above.

**DISCLAIMER OF ALL OTHER WARRANTIES**

VALENT MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR OF MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. No agent or representative of Valent or Seller is authorized to make or create any other express or implied warranty.

**LIMITATION OF LIABILITY**

In no event shall Valent or Seller be liable for any incidental, consequential, indirect or special damages resulting from the use or handling of this product. THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE MAXIMUM LIABILITY OF VALENT OR SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT SHALL BE THE RETURN OF THE PURCHASE PRICE OF THIS PRODUCT OR, AT THE ELECTION OF VALENT OR SELLER, THE REPLACEMENT OF THIS PRODUCT.

**NO AMENDMENTS**

Valent and Seller offer this product, and Buyer and User accept it, subject to the foregoing Disclaimer, Conditions of Sale, Limited Warranty and Limitation of Liability, which may not be modified by any oral or written agreement.

**PROMPT NOTICE OF CLAIM**

Valent must have prompt notice as soon as Buyer or User has reason to believe they may have a claim (not to exceed twenty-one days from date of application) so that an immediate inspection of the affected property and growing crops can be made. Unless Buyer and Users shall promptly notify Valent of any claims, they shall be barred from obtaining any remedy.

**TANK MIXES**

**NOTICE:** Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor.

Read and follow the entire label of each product to be used in the tank mix with this product.

## WATER SOLUBLE PACKAGING

(To Be Included on WSP Formulation Only)

### MULTIPLE PACKAGING

This bag contains multiple water soluble packets of ORTHENE 90 S. Do not handle the packets with wet gloves or allow the packets to become wet prior to addition to spray tank. If all packets are not used, close and reseal outer container to protect remaining packet(s).

### SINGLE PACKAGING

This bag contains one soluble packet ORTHENE 90 S. Do not handle the packet with wet gloves or allow the packet to become wet prior to addition to spray tank. Open outer bag by pulling perforated tearstrip and drop the unopened inner packet of ORTHENE 90 S into spray tank.

### PREPARATION OF SPRAY SOLUTION

To prepare spray solution, drop the unopened packet(s) of ORTHENE 90 S into a spray tank containing at least one-half the total quantity of water required. Direct water at the floating bag and continue to add water with the agitator running until the spray volume is reached. Do not add any liquid fertilizers, micronutrients or adjuvants to the spray solution until after the bag and its contents have completely dissolved. Water soluble packet(s) should completely dissolve in approximately five minutes. Dissolution rate may be slowed by cold water, lack of agitation, or water containing high concentrations of boron or sulfur.

## TABLE OF EQUIVALENTS

(To Be Included on WSP Formulation Only)

Rate of ORTHENE 90 S Per Acre	Acres Treated by a 2.5 lb. WSP Packet	Acres Treated by a 20 lb. WSP Packet
2.5 oz.	16	128
3.2 oz.	12.5	100
3.25 oz.	12.3	98.5
0.25 lb.	10	80
0.28 lb.	8.9	71.4
0.5 lb.	5	40
0.56 lb.	2.5	20
0.8 lb.	3.1	25
1.0 lb.	2.5	20
1.1 lb.	2.3	18.2

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## GENERAL INFORMATION

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

ORTHENE 90 S is an insecticide which controls a wide range of important pests in cotton. The active ingredient in ORTHENE 90 S is acephate, a water-soluble insecticide readily absorbed by plant roots and foliage to give systemic control of feeding insects. Insect pests are generally controlled more effectively by ORTHENE through ingestion than by contact. ORTHENE 90 S can be applied as [hopper-box,] in-furrow and foliar treatments in cotton. Application of ORTHENE 90 S to maintain control should be repeated only as directed.

## COTTON

### GENERAL USE PRECAUTIONS

Do not use treated seed for food or feed purposes or process for oil.

Do not feed gin trash to livestock.

Do not allow animals to graze on treated areas.

Do not apply more than 6 lbs. ai/A per season. This includes the use of Payload\* 15 G as an in-furrow at planting treatment, all foliar spray, liquid in-furrow application and seed treatment uses.

TABLE 1. Cotton - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS	DAYS TO HARVEST
<p>COTTON SEED HOPPER BOX</p> <p>AT-PLANTING APPLICATION</p> <p>[HOPPER BOX USE NOT INCLUDED ON WSP PACKAGED PRODUCT]</p>	<p>Black (Greasy) Cutworm</p> <p>Cotton Aphids</p> <p>Thrips</p>	2.5 to 3.25 oz.	<p>Add dry ORTHENE 90 S to seed in the planter box to achieve an application rate of 3 to 4 oz./A.</p> <p>Even coverage of seed is required for acceptable insect control. Plants grown from improperly treated seed may not exhibit insect control. To obtain even coverage, fill planter box 1/2 full of seed, add 1/2 of required ORTHENE 90 S and mix thoroughly. Add remainder of seed and ORTHENE 90 S to the hopper box and thoroughly mix.</p> <p>Improved distribution of ORTHENE 90 S on seed can be achieved by premixing both in a separate container and then transferring treated seed to hopper box.</p> <p>Use of ORTHENE 90 S with air planters is not recommended since loss of product will occur.</p>	<p>At-Planting Application</p> <p>• • • • •</p> <p>• • • • •</p> <p>• • • • •</p> <p>• • • • •</p> <p>• • • • •</p>

### USE PRECAUTIONS:

Do not use treated seed for food or feed purposes or process for oil.

ORTHENE 90 S cotton seed hopper box treatment is not permitted in Arizona, California and the Black Lands of Texas.

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS	DAYS TO HARVEST
<b>IN FURROW</b> By Ground: 3 to 5 gals./A of spray. <b>AT-PLANTING APPLICATION</b>	Aphids* Black (Greasy) Cutworm (Except CA) Thrips * Excluding Cotton Aphids in AZ & CA.	0.56 to 1.1 lb. <b>NOTE: For the Blacklands of Texas use 1.1 lb./A ORTHENE 90 S.</b>	Use flat-fan nozzles for in-furrow application. Align nozzles to ensure good spray deposition into the seed furrow. Cone type nozzles are not recommended since unacceptable spray deposition may occur. Securely fasten spray-system tubing to furrow opener and check frequently to ensure proper positioning and operation. ORTHENE 90 S can be mixed with fungicides that are sprayed in-furrow for disease control.	At-Planting Application
<b>FOLIAR</b> By Ground: 10 to 25 gals./A of spray. By Air: 3 to 10 gals./A of spray (minimum of 5 gals./A in AZ & CA)	Thrips	3.2 oz.	Apply when eggs or insects first appear. Repeat as necessary to maintain control.	21
	Plantbugs (Lygus)	0.25 to 1.0 lb. 0.5 to 1.0 lb. (AZ & CA)	Apply when eggs or insects first appear. Use highest rate for Lygus adults that have migrated into cotton. Repeat as necessary to maintain control.	21
	Fleahopper	0.25 lb.	Apply when eggs or insects first appear. Repeat as necessary to maintain control.	21
	Cotton Aphids (excluding AZ and CA)	0.5 to 1.0 lb.	This insect may develop resistance to various classes of insecticides. Consult your local Agricultural Extension Service for current control recommendations. Repeat as necessary to maintain control.	21
	Whitefly (excluding Sweetpotato Whitefly/Silverleaf Whitefly)	0.5 to 1.0 lb.	Repeat as necessary to maintain control.	21

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b>  By Ground: 10 to 25 gals./A of spray.  By Air: 3 to 10 gals./A of spray (minimum of 5 gals./A in AZ & CA)	Armyworms (excluding Beet Armyworm)  Cabbage Looper	1.0 lb.	Apply when eggs appear and repeat at 3 to 7 day spray intervals.	21
	Bollworm Tobacco Budworm Adults Larvae	0.5 to 1.0 lb. (East of Rockies)  1.0 lb. (AZ & CA)	Early Season: Use 0.5 lb./A for light infestation.  Mid and Late Season: Use 0.8 to 1.0 lb./A for moderate to severe infestations.  Apply when eggs appear and repeat at 3 to 7 day spray intervals.  Moths of budworm larvae are controlled by direct contact with spray. Moth kill is most likely to occur when late evening applications are made.	21
	Eggs (DEADHATCH <sup>1</sup> )	0.25 to 0.5 lb.	DEADHATCH: control of emerging larvae by consumption of treated egg casings.	
	Stinkbugs	0.8 lb.	Apply when eggs appear and repeat at 3 to 7 day spray intervals.	21
	Pink Bollworm (AZ & CA)	1.0 lb.	Apply when insects appear and repeat at 5 to 7 day spray intervals.	21
	Cutworms	0.8 lb.	Ground application is recommended.  Aerial applications are less effective, but may be used.  Control is most effective when ground application is made in the evenings and sprays are directed toward the base and lower portion of plant.  Apply when insects first appear or damage is first noted and repeat as necessary to maintain control.	21



## COTTON TANK MIXES

### GENERAL USE PRECAUTIONS:

Do not feed gin trash or treated forage to livestock.  
Do not allow livestock to graze on treated areas.

Do not apply more than 6 lbs. ai/A per season. This includes the use of Payload<sup>®</sup> 15 G as an in-furrow at planting treatment, all foliar spray, liquid in-furrow application and seed treatment uses.

Synthetic Pyrethroids should be used within the guidelines of state and/or regional resistance management programs and recommendations.

Always read and follow all label directions when using any pesticide alone or in tank mix combinations. Observe all restrictions and precautions which appear on all product labels. The most restrictive labeling applies when using a tank mix.

**TABLE 2. Cotton Tank Mixes - Recommendations for Use**

APPLICATION METHOD	PESTS CONTROLLED	ORTHENE 90 S SOLUBLE POWDER AND TANK MIX PARTNER	AMOUNT OF ORTHENE 90 S SOLUBLE POWDER + TANK MIX PARTNER PER ACRE	REMARKS
<b>FOLIAR</b>  By Ground: 10 to 25 gals./A spray.  By Air: 3 to 10 gals./A of spray (minimum 5 gals./A in CA).	Sweetpotato Whitefly (Silverleaf Whitefly)	ORTHENE 90 S + DANITOL 2.4 EC Spray	0.5 to 1.0 lb. + 10 3/4 to 16 fl. oz.	User should comply with all applicable directions, restrictions and precautions on the EPA registered label for Danitol 2.4 EC Spray.
	Armyworms (excluding Beet Armyworm) Bollworm Cabbage Looper Cotton Aphid Cutworms Fleahopper Grasshoppers Pink Bollworm Plantbugs (Lygus, Mirids) Salt Marsh Caterpillar Thrips Tobacco Budworm Whitefly (Excluding Sweetpotato/Silverleaf Whitefly)	ORTHENE 90 S + LORSBAN <sup>®</sup> 4E	0.28 to 1.1 lb. + 1 to 2 pts.	<b>Cutworms:</b> Use of 0.8 lb./A ORTHENE 90 S  <b>By Ground:</b> Ground application is recommended.  Control is most effective when ground application is made in the evenings and sprays are directed toward the base and lower portion of plant.  <b>By Air:</b> Aerial applications are less effective, but may be used.  Apply when insects first appear or when damage is first noted and repeat as necessary to maintain control.

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APPLICATION METHOD	PESTS CONTROLLED	ORTHENE 90 S SOLUBLE POWDER AND TANK MIX PARTNER	AMOUNT OF ORTHENE 90 S SOLUBLE POWDER + TANK MIX PARTNER PER ACRE	REMARKS
<b>FOLIAR</b>  By Ground: 10 to 25 gals./A spray.  By Air: 3 to 5 gals./A spray (minimum 5 gals./A in CA). See remarks for Cutworms.	Aphids Bollworm Cabbage Looper Cotton Leaf Perforator Cutworms Fall Armyworm Fleahoppers Pink Bollworm (AZ & CA) Plantbugs Stinkbugs Sweetpotato/Silverleaf Whitefly Thrips Tobacco Budworm Whitefly	ORTHENE 90 S	0.5 to 1.0 lb.	Apply when eggs or insects first appear.  Repeat as necessary to maintain control.  <b>Stinkbugs:</b> Use 0.8 lb/A of ORTHENE 90 S.  <b>*Cutworms:</b> Use 0.8 lb./A of ORTHENE 90 S.  By Ground: Ground application is recommended.  Control is most effective when ground application is made in the evenings and sprays are directed toward the base and lower portion of plant.  By Air: 3 to 10 gals./A spray (minimum 5 gals./A in CA)  Aerial applications are less effective, but may be used.  Apply when eggs or insects first appear or damage is first noted.  Repeat as necessary to maintain control.
		+	+	
		one of the following:	one of the following:	
		AMBUSH <sup>®</sup> 2 EC	Refer to the AMBUSH 2 EC approved label for use instructions.	
		AMMO <sup>®</sup> 2.5 EC*	Refer to the AMMO 2.5 EC approved label for use instructions.	
		ASANA <sup>®</sup> XL*	Refer to the ASANA XL approved label for use instructions.	
		BAYTHROID <sup>®</sup> 2 EC	Refer to the BAYTHROID 2 EC approved label for use instructions.	
		CAPTURE <sup>®</sup> 2 EC	Refer to the CAPTURE 2 EC approved label for use instructions.	
		KARATE <sup>®</sup> 1 E (Except CA)	Refer to the KARATE 1 E approved label for use instructions.	
		POUNCE <sup>®</sup> 3.2 EC*	Refer to the POUNCE 3.2 EC approved label for use instructions.	
		SCOUT <sup>®</sup> X-TRA (Except CA)	Refer to the SCOUT X-TRA approved label for use instructions.	

#### RESISTANCE-MANAGEMENT

Cotton pest control programs, especially those for control of silverleaf whitefly populations, should employ a properly designed resistance-management strategy. Such resistance-management strategies include mixture or rotation of alternative classes of chemistry including organo-phosphates, carbamates, pyrethroids or insect growth regulators. Consult your state or area agricultural extension service for local resistance management strategies and advice on alternative insecticides.

## **STORAGE AND DISPOSAL**

### **PROHIBITIONS**

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment.  
Open dumping is prohibited.

### **STORAGE**

Keep pesticide in original container.

Do not put concentrate or dilute into food or drink containers.

Store in cool, dry place. Protect from excessive heat.

Do not contaminate food or foodstuffs.

Do not store or transport near feed or food.

For help with any spill, leak, fire or exposure involving this material, call day or night 1-800-892-0099.

### **PESTICIDE DISPOSAL**

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

### **CONTAINER DISPOSAL**

Completely empty bag into application equipment. Do not reuse container.

Dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning.

If burned, stay out of smoke.

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AMBUSH® - Reg. TM of Zeneca Agricultural Products for permethrin insecticide.

AMMO® - Reg. TM of FMC Agri Chemical Group for cypermethrin insecticide.

ASANA® - Reg. TM of E. I. duPont de Nemours & Co., Inc. for esfenvalerate insecticide.

BAYTHROID® - Reg. TM of Bayer Corp. for cyfluthrin synthetic pyrethroid.

CAPTURE® - Reg. TM of FMC Agri Chemical Group for bifenthrin insecticide miticide.

DANITOL® - Reg. TM of Sumitomo Chemical Company, LTD for fenpropathrin insecticide-miticide.

KARATE® - Reg. TM of Zeneca Agrochemicals Co. U.K. for lambda-cyhalothrin insecticide.

LORSBAN® - Reg. TM of Dow Chemical Company for chlorpyrifos insecticide.

ORTHENE® - Reg. TM of Monsanto Company for acephate insecticide.

POUNCE® - Reg. TM of FMC Agri Chemical Group for permethrin insecticide.

SCOUT® - Reg. TM of Hoechst - Roussel Agri - Vet Co. for tralomethrin pyrethroid insecticide.

Manufactured for

Valent U.S.A. Corporation

Walnut Creek CA 94596 - 8025

Made in U.S.A.

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