



010163-00200-051099

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Systems Integration Group, Inc.

Prefar® 4-E

Selective Herbicide

emulsifiable liquid for control of annual grasses and broadleaf weeds

ACTIVE INGREDIENT: Bensulide
S-(O-isopropyl)phosphorothioate ester of N-(2-mercaptoethyl) benzenesulfonamide

ADVERTISED

MAY 10 1999

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 10163-200

	% By Wt.
S-(O-isopropyl)phosphorothioate ester of N-(2-mercaptoethyl) benzenesulfonamide	46.0%
INERT INGREDIENTS	54.0%
TOTAL	100.0%

Contains 4 pounds of active ingredient per gallon

KEEP OUT OF REACH OF CHILDREN CAUTION

STATEMENT OF PRACTICAL TREATMENT
Organophosphate Pesticide

FIRST AID: If a known exposure occurs or is suspected, immediately start the procedures given below and simultaneously contact a Poison Center, a physician, or the nearest hospital.

NOTE: Be sure to advise the person contacted that the active ingredient in this compound is a cholinesterase inhibitor. Describe the type of exposure, the victim's symptoms, and follow the advice given.

NOTE TO MEDICAL PERSONNEL: Should cholinesterase inhibition occur, atropine by injection is antidotal. 2-PAM (Protopam Chloride) is also antidotal when administered early and in conjunction with atropine.

IF SWALLOWED: Immediately give several glasses of water but do not induce vomiting. If vomiting does occur, give fluids again. Have a physician determine if condition of patient will permit induction of vomiting or evacuation of stomach. Do not give anything by mouth to an unconscious or convulsing person.

FOR SKIN CONTACT: Flush all affected areas with plenty of water for several minutes. Remove and clean contaminated clothing and shoes. Seek medical attention if irritation occurs.

FOR EYE CONTACT: Flush eyes with large amounts of running water for at least 15 minutes. Hold eyelids apart to ensure rinsing of the entire surface of the eye and lids with water. Get medical attention immediately.

IF INHALED: Remove to fresh air. Seek medical attention if respiratory irritation occurs or if breathing becomes difficult.

FOR EMERGENCY MEDICAL RESPONSE AND HAZARD COMMUNICATIONS ONLY, CALL HAZARD INFORMATION SERVICES AT 1-800-228-5635 EXT. 283.

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Harmful if swallowed, inhaled, or absorbed through the skin. Avoid breathing spray mist. Causes moderate eye irritation. Do not get in eyes, on skin, or on clothing.

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 G on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate or Viton ≥14mils
- 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.

ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not apply directly to water, or 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. Do not apply when weather conditions favor drift from area treated.

PHYSICAL HAZARDS

Combustible. Do not use, store, pour, or spill near heat or open flame. Keep container closed when not in use.

NET CONTENTS _____ GALLONS



GENERAL USE PRECAUTIONS

- READ ALL DIRECTIONS BEFORE USING.
- MIX PREFAR 4-E WELL BEFORE DILUTING WITH WATER.
- Prefar 4-E should be used only for recommended purposes and at recommended rates. (DO NOT OVERDOSE.)
- USE ON MINERAL SOILS ONLY.
- Application of Prefar 4-E to soil that is cold and/or wet for an extended period of time due to rains or poorly drained soil during the germination period may result in reduction of crop stand or yields.
- Combining Prefar 4-E with fertilizers or other agricultural chemicals could result in incompatibility, reduced efficacy, or reduced crop safety. It is recommended that the user test the response of combination treatments with other products on a small scale prior to commercial scale use.
- Vary the rate of Prefar 4-E you apply depending on the soil texture. Apply the higher recommended label rates to heavier, fine textured soils. Apply lower rates to lighter, coarse textured soils with lower organic matter.

WEEDS CONTROLLED

ANNUAL GRASSES

Crabgrass	(<i>Digitaria spp.</i>)
Fall Panicum	(<i>Panicum dichotomiflorum</i>)
Foxtail	(<i>Setaria spp.</i>)
Goosegrass	(<i>Elyusine indica</i>)
Jungle Rice	(<i>Echinochloa colonum</i>)
Sprangletop	(<i>Leptochloa spp.</i>)
Barnyardgrass	(<i>Echinochloa crusgalli</i>)
(Watergrass)	

ANNUAL BROADLEAF WEEDS

(AZ, NM, TX and CA only)

Lambsquarters	(<i>Chenopodium album</i>)
Purslane	(<i>Portulaca oleracea</i>)
Redroot Pigweed	(<i>Amaranthus retroflexus</i>)
(AZ and CA only)	
Burning Nettle	(<i>Urtica urens</i>)
Nettleleaf Goosefoot	(<i>Chenopodium murale</i>)

DIRECTIONS FOR USE

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

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 or Viton ≥14mils
- Shoes plus socks

GENERAL RECOMMENDATIONS

Prefar 4-E is a selective preemergent herbicide that controls weeds by interfering with their normal germination and seedling development. Tests deemed reliable demonstrate that when Prefar is applied to labeled crops according to label directions under normal growing conditions, it is safe to the crop. Normal crop conditions include soil with good water drainage, acceptable soil fertility, and soil temperatures conducive to timely seed germination and plant emergence. Any deviation from normal growing conditions resulting from adverse environmental conditions or changes in production practices may alter a crop's response to Prefar.

The user should strictly comply with the soil preparation and application instructions on this label. Questions concerning the use of the product should be directed to Gowan Company or local extension agents or university specialists.

SOIL PREPARATION: Prepare the soil according to good agricultural practice. Prefar 4-E does not control emerged weeds. All weed growth and crop stubble must be thoroughly worked into the soil prior to application.

APPLICATION INSTRUCTIONS: Spray equipment should be carefully calibrated before use and checked frequently during application to be sure nozzles are free from clogging and are delivering a uniform spray pattern. Apply uniformly the recommended rate of Prefar 4-E in 10 to 50 gallons of water per acre. See comments for specific crop use directions.

PREPLANT INCORPORATION: Apply to well-worked soil that is dry enough to permit thorough incorporation. Incorporate to a depth of 1-2 inches before planting. One-inch incorporation is optimum, while incorporating deeper than 2 inches will result in reduced weed control or crop injury.

PREEMERGENCE APPLICATION: Apply Prefar 4-E preemergence only on crops where the application is followed by immediate irrigation. Delaying irrigation more than 36 hours may result in poor weed control. For sprinkler irrigation wet the soil at least 2 to 4 inches deep. For furrow irrigation thoroughly wet the entire bed top (completely black out bed top).

ROTATIONAL CROP INSTRUCTIONS: Carrots, cotton and crops on this label (or crops from labeled crop groupings) may be replanted following applications of Prefar 4-E without restriction. All other crops should not be planted for 120 days and the soil must be tilled to a minimum depth of 4 inches prior to replanting. Prefar 4-E may be used on labeled crops grown through or under plastic.

CHEMIGATION USE INSTRUCTIONS

Apply this product only through sprinkler, including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set or hand move; or drip (trickle), including surface and subsurface drip irrigation systems. 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 Service Specialists, equipment manufacturers, or other experts.

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.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

For chemigation systems connected to public water systems:

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the

outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. Before beginning chemigation, always make sure that the air gap exists and that there is no blockage of the overflow of the reservoir tank.

In addition, all directions and requirements specified for Sprinkler and Drip (trickle) Chemigation must be followed.

Sprinkler and Drip (Trickle) Chemigation:

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 backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

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.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

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 where pesticide distribution is adversely affected.

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.

Do not apply when wind speed favors drift beyond the area intended for treatment.

For best results, application should be made at the beginning of the irrigation cycle, injecting over a 60 to 90 minute period after all lines and sprinklers have been cleared and are operating with correct pressure. Shut off injection equipment at the end of the application and continue to irrigate until soil is wetted to a depth of 2 to 4 inches.

CROP USE DIRECTIONS

All Prefar 4-E rates are given on a broadcast rate per acre basis. For banded applications reduce proportionately the amount of Prefar 4-E applied according to the area to be treated. Do not make applications to any crop not on this label unless the supplemental labeling for Prefar 4-E supplied by Gowan Company is followed.

CROP	BROADCAST RATE qts./ acre	COMMENTS
CUCURBIT VEGETABLE GROUP , including but not limited to: Chayote, Chinese Waxgourd (Chinese Preserving Melon), Citron Melon, Cucumbers, Gherkin, Edible Gourd (Hechima, Chinese Okra), Muskmelons (including Muskmelon, True Cantaloupe, Cantaloupe, Casaba, Crenshaw Melon, Golden Pershaw Melon, Honeydew Melon, Honey Balls, Mango Melon, Persian Melon, Pineapple Melon, Santa Claus Melon, Snake Melon), Pumpkins, Summer Squash (Crookneck Squash, Straightneck Squash, Zucchini, Scallop Squash, Vegetable Marrow, Spaghetti Squash, Hyotan, Cucuzza, Balsam Apple, Balsam Pear, Bitter Melon, Chinese Cucumber), Winter Squash (Including Butternut Squash, Calabaza, Hubbard Squash, Acorn Squash), Watermelons	5 - 6	Apply preplant or preemergence to flat-planted or bedded crops. Follow application instructions given on this label.
BRASSICA (COLE) LEAFY VEGETABLE GROUP , including but not limited to: Broccoli, Broccolini, Broccoflower, Chinese Broccoli, Broccoli Raab (Rapini), Brussels Sprouts, Cabbage, Chinese Cabbage (Bok Choy, Napa), Chinese Mustard Cabbage (Gai Choy) Cauliflower, Cavalo Broccolo, Collards, Kale, Kohlrabi, Mizuna, Mustard Greens, Mustard Spinach, Rape Greens	5 - 6	Apply preplant or preemergence. Follow application instructions given on this label.
FRUITING VEGETABLES Eggplant, Ground Cherry, Pepinos, Peppers (Bell Peppers, Chili Peppers, Cooking Peppers, Pimentos, Sweet Peppers), Tomatillo	5 - 6	Apply preplant or preemergence. Follow application instructions given on this label.
LEAFY VEGETABLES (EXCEPT BRASSICA VEGETABLE) GROUP , including but not limited to: Arugula (Roquette), Cardoon, Celery, Chinese Celery, Celtuce, Chervil, Chrysanthemum (Edible Leafed Garland), Corn Salad, Cress (Garden, Upland) Dandelion, Dock (Sorrel), Endive (Escarole), Florida Fennel, Lettuce (Head Or Leaf), Orach, Parsley, Radicchio (Red Chicory), Swiss Chard	5 - 6	Apply preplant or preemergence. Follow application instructions given on this label. Do not use Prefar 4-E on spinach, as severe phytotoxicity will occur.
CARROTS (Texas Only)	5 - 6	Apply preplant or preemergence. Follow application instructions given on this label. Do not feed treated carrots to livestock.
DRY BULB VEGETABLES: Garlic, Bulb Onions, Shallots	5 - 6	Apply preplant or preemergence. Follow application instructions given on this label. Onions germinate and grow best when planted in fine-textured soil with good water drainage where the soil salinity value is less than 4 ECe* and soil temperature is between 55° and 75°. Use of Prefar on onions under less favorable soil and environmental conditions may reduce stand and vigor resulting in lower yield. To avoid injury, do not incorporate by mechanical methods in Colorado, Washington, Idaho, California or Arizona as crop injury may occur. Consult your local extension agent or university specialist for further information. (*ECe is the electrical conductivity extract.)

CROP	BROADCAST RATE qts./acre	COMMENTS
DRY BULB VEGETABLES: Garlic, Bulb Onions, Shallots (Idaho and Oregon only)	5 - 6	For control of redroot pigweed and common lambsquarters, prepare a good, flat seed bed by standard cultural practices. Apply Prefar 4-E in the fall in 10 - 50 gals. of water in a 10 - 12 inch band and bed-up, throwing soil from the furrows over the sprayed band of Prefar 4-E. Allow to remain undisturbed until spring. Prior to planting in spring, drag-off the bed tops being careful not to drag off soil below the level of Prefar 4-E application. Plant in the center of the beds.

PREFAR 4-E/ALANAP® TANK MIX DIRECTIONS

A tank mix combination of Prefar 4-E and ALANAP can be mixed (incorporated) into the soil before planting for weed control in cantaloupes, cucumbers, muskmelons and watermelons. This combination will control a broader spectrum of weeds than will either material used alone.

IMPORTANT: Follow all general directions for use and use precautions that appear on the ALANAP label and elsewhere on this label.

Weeds controlled by PREFAR 4-E/ALANAP combinations:

Annual Grasses: Barnyardgrass (watergrass), Crabgrass, Fall Panicum, Foxtail, Goosegrass, Sprangletop.

Annual Broadleaf Weeds: Field and hedge bindweed, Carpetweed, Chickweed, Cocklebur, Galinsoga, Groundcherry,

Lambsquarters, Mustard, Pigweed, Purslane, Ragweed, Shepherd's purse, Velvetleaf.

Soil Preparation: Prepare the soil according to good agricultural practice. All weed growth and crop stubble must be thoroughly worked into the soil.

Tank Mixing Directions: Combine Prefar 4-E and ALANAP in the spray tank in the recommended dosage proportions using 10 to 40 gallons of water per acre of area to be treated.

Spray equipment should be carefully calibrated before use and checked frequently during application to be sure nozzles are free from clogging and are delivering a uniform spray pattern.

CROP	BROADCAST RATE qts./acre	COMMENTS
Cantaloupes, Cucumbers, Muskmelons, Watermelons	4-6 qts. Prefar 4-E plus 4-8 qts. ALANAP	Apply preplant in sufficient water (10-40 gals.) to provide thorough coverage. Incorporate lightly (1/2 to 1 inch) into the soil using suitable equipment just prior to planting. Use lower rates on light (sandy) soils and higher rates on heavier (clay) soils. Reduce the rate proportionately for band applications. Incorporation is not necessary if the application is followed by immediate irrigation.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.
STORAGE: Protect from temperatures below 42° F. At temperatures below 42° F product may crystallize. Dissolve crystals with quiet storage at warm temperatures (75° F). Redissolution rate: 40 - 48°F (40-60 days); 60° F (1-3 weeks); 70 - 80° F (1-3 days). Roll container and agitate contents to provide a uniform product prior to use.

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: 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.

SPILL OR LEAK: Small spills can be handled routinely. Use adequate ventilation and wear an air-supplied respirator to prevent inhalation. Wear suitable protective clothing to prevent skin and eye contact. Use the following procedures:

1. Spread a suitable absorbent such as clay, sawdust or kitty litter on the spilled material.
2. Place sweepings in an appropriate chemical waste container.
3. Generously cover the contaminated areas with a common household detergent. Using a stiff brush and small amounts of water, work the detergent into the spill material forming a slurry. Do not splatter on yourself or bystanders and completely avoid skin or eye contact with this material. Brush the slurry into cracks and crevices and allow to stand for 2-3 minutes.
4. Spread absorbents on the slurred liquid and shovel the absorbed material into the container.

STORAGE AND DISPOSAL (continued)

5. Repeat if necessary.
6. Flush the area with water while observing proper environmental considerations.
7. Seal container and dispose of in approved pesticide landfill. Large spills should be handled according to a predetermined plan. For assistance in developing a plan, contact Gowan Company.

FOR 24-HOUR EMERGENCY ASSISTANCE (SPILL, LEAK OR FIRE), CALL CHEMTREC®(800) 424-9300.

For other product information, contact Gowan Company or see Material Safety Data Sheet.

NOTICE ON CONDITIONS OF SALE

Our recommendations for use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice. The buyer must assume all responsibility including injury or damage, resulting from its misuse as such, or in combination with other materials.

This product is sold only for uses stated on its label. No expressed or implied license is granted to use or sale of this product under any patent in any country except as specified: Country: United States of America.

Prefar® is a registered trademark of ZENECA Inc.

ALANAP® is a registered trademark of Uniroyal Chemical.

EPA Text Pending: Prefar 4-E (to EPA 4-22-99)

Supplemental Labeling

Prefar 4-E

Selective Herbicide

EPA Reg. No. 10163-200

emulsifiable liquid for control of annual grasses and broadleaf weeds

For Field Grown Flowers, Bulbs and Ornamentals*

CROP	RATE qts / acre	COMMENTS
<p>Herbaceous Plants: Including but not limited to: Alyssum, Aster, Bachelor's Button, Calendula, Candy-tuft, Coral Bell, Daisy, Marigold, Pansy, Primrose, Stock, Sweet Pea, Wallflower.</p> <p>Bulbs: Including but not limited to: Daffodil, Dahlia, Freesia, Gladiolus, Narcissus, Ranunculus, Tulip</p>	<p>5 - 9</p>	<p>Apply preplant or preemergence to flatplanted or bedded crops. Follow application instructions given on this label.</p> <ul style="list-style-type: none"> • Prior to treating new species or varieties, treat a few plants and observe results to reduce the possibility of crop injury.