

407-429

PM 23

1 of 7

September 24, 1987  
(Front Panel)

IMPERIAL

2,4-D  
380 LO VOL ESTER  
WEED KILLER

ACTIVE INGREDIENT:

Isocetyl Ester of 2,4-Dichlorophenoxyacetic acid*	66.2%
INERT INGREDIENTS:	33.8%
Total	100.0%

\*Isomer Specific by AOAC Method No. 6.275 13th Edition 1980  
 \*2,4-Dichlorophenoxyacetic acid equivalent ... 44.0%  
 Contains 3.8 lb. 2,4-Dichlorophenoxyacetic acid per gallon

ACE  
OCT 6 1987  
407-429

KEEP OUT OF REACH OF CHILDREN (12 pt. type size)

CAUTION (18 pt. type size)

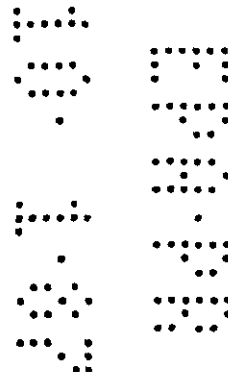
SEE SIDE PANELS FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No. 407-429  
 EPA Est. No. 407-IA-1<sup>S</sup>, 407-MN-1<sup>A</sup>  
 Superscript corresponds to  
 letter in lot number

H-87-84-1

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Manufactured By  
**IMPERIAL INC.**  
 SHENANDOAH, IA 51601



(Side Panel)

PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Harmful if swallowed. Do not get in eyes, on skin or clothing. In case of contact, wash with soap and water. Avoid inhaling spray or mist. In case of contact with eyes wash with plenty of water.

Do not forage or graze treated grain fields within 2 weeks after treatment with 2,4-D. Do not feed treated straw to livestock. Do not graze pastures to dairy animals within seven days after treatment.

ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not apply directly to water. Do not contaminate water by cleaning of equipment or disposal of wastes. Do not contaminate waters used for irrigation or domestic purposes.

DON'T OVERDOSE! Follow directions carefully. Do not let spray drift to sensitive plants such as vegetables, legumes, grapes, flowers or other 2,4-D susceptible plants. Use coarse spray to reduce "wind drift". Local spray conditions will vary. Check local recommendations first. Use separate spray equipment for insecticides and fungicides. Do not make aerial application near cotton or sensitive plants. Under certain high temperature conditions, vapors from this product will injure nearby susceptible plants.

DIRECTIONS FOR USE

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

RE-ENTRY STATEMENT

Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons. Do not enter treated areas without protective clothing until sprays have dried.

Because certain states may require more restrictive reentry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.

Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. The PRECAUTIONARY STATEMENTS should be read to workers as well as the instruction not to enter until sprays have dried. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written warnings must include the following information: "CAUTION: Area treated with 2,4-D on (date of application). Do not enter without appropriate protective clothing until sprays have dried."

STORAGE AND DISPOSAL (12 pt. type size)

STORAGE: Store in a secure area, in original container only, away from fertilizers, food, or feed. Do not store near insecticides or fungicides.

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

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.

When stored at temperatures below freezing, it may be necessary to warm contents to 45° F and mix thoroughly before using.

This product will control the listed plants and other 2,4-D susceptible species: Alligatorweed, tall and devil's beggarticks, blueweed (Texas), boxelder, broomweed, buckbrush, buckhorn plantain, burdock, burhead, buttercup, carpetweed, catnip, chamise, chickweed, chicory, cocklebur, coffeeweed, common mullein, cornflower, coyotebrush, croton, curly indigo, dandelion, docks, dog fennel, common duckweed, elderberry, annual fleabane, fanweed, galinsoga, wild garlic, goatsbeard, goldenrod, halogeton, hemp, henbit, jewelweed, jimsonweed, lambsquarters, locoweed, mallow (Venice), manzanita, marshelder, milkvetch, morning-glory (annual), nettles, nutgrass, onion (wild), Parrot feather, pennycress, pepperweed (field), redroot and smooth pigweed, plantain, poorjoe, poison ivy, pokeweed, prickly lettuce, puncturevine, common purslane, rabbitbrush, radish (wild), ragweed (common and giant), rape (wild), redstem, rush, sagebrush (costal, big, sand), salsify, sand shinnery oak, sheep sorrel, shepherdspurse, sicklepod, sneezeweed (bitter), sowthistle (annual), Spanishneedles, stinkweed, sumac, sunflower, sweetclover, tansymustard, tansy ragwort, tumbleweed, velvetleaf, Virginia creeper, Waterprimrose, willow, wild sweet potato, witchweed, wormwood, yellow rocket, yellow starthistle.

Partial control can be expected on the following less susceptible species: artichoke, bindweeds (hedge, field, and European), buckwheat (wild), creeping jenny, ground ivy, kochia, climbing milkweed, smartweed, thistle (bull, Canadian, musk and Russian). Deep-rooted perennials such as Canadian thistle and field bindweed and woody plants may require repeat applications.

Apply when weather is warm and plants are rapidly growing. Cold weather or dry conditions may cause poor results. DO NOT apply if rain is expected within one hour.

Consult your Extension Service or Agricultural Experiment Station for local use and crop tolerance situations.

This product may be applied as a water, oil, or adjuvant based spray. Use coarse sprays to minimize drift. DO NOT apply where spray may come in contact with any desirable plants or susceptible crops other than those listed on this label.

DO NOT apply this product through any type of irrigation system.

When using ground equipment, keep boom or nozzles close to crop, apply 3 or more gallons of spray per acre using flooding or flat fan nozzles with 20 pounds or less of pressure. If wind exceeds 7 miles per hour, spraying should stop. DO NOT apply with hollow cone or any other mist producing nozzle.

When using aerial equipment, apply a minimum of 3 to 5 gallons of spray per acre at 20 pounds or less nozzle pressure using nozzles that produce a coarse spray pattern. Spray only when wind is blowing less than 5 miles per hour.

Apply the recommended amount of 2,4-D per acre regardless of the amount of diluent used.

Application by any means should take place only when there is no danger of spray drift. Do not apply near cotton, grapes, tomatoes, or other 2,4-D susceptible crops or vegetables. Do not apply when the wind is blowing toward these crops or plants.

**MIXING INSTRUCTIONS: WATER-BASED SPRAY** -- Fill the equipment half full of water, agitate while adding this product, then add rest of water.

**WATER AND SOYBEAN OIL OR PETROLEUM OIL-BASED SPRAY** -- First mix this product with the oil then add to water. If vigorous agitation is possible, the oil can be added last. **DO NOT ADD OIL FIRST!**

**SOYBEAN OIL OR PETROLEUM OIL-BASED SPRAY** -- Add this product to straight oil to form a solution. Do not allow water to get into this mixture, if it does an invert emulsion will occur.

**NITROGEN FERTILIZER** -- The compatibility of this product must be tested with the fertilizer before its use in application equipment. This is done by means of a quart jar test as follows: The amount of this product to add to one pint of liquid nitrogen fertilizer is determined by using this table --

AMOUNT OF 2,4-D PER ACRE	GALLONS OF FERTILIZER PER ACRE				
	10	20	30	40	50
1/2 pint	2/3	1/2	1/3	1/4	1/8
1 pint	1-1/4	1	3/4	1/2	1/4
2 pints	2-1/2	2	1-1/2	1	1/2
4 pints	5	4	3	2	1

The amount in the table is based on gallons of finished spray per acre. Different spray volumes will require appropriate changes in the amount of this product added to one pint of fertilizer. Add the required amount of this product to one pint of fertilizer in a quart jar and shake to mix well. Let the mixture stand and examine it after 5 minutes and again after 30 minutes. The product is incompatible if it balls up, forms flakes, sludges, gels, oily films, layers, or other precipitates. If the precipitate can be suspended with agitation the combination can be used if the equipment has vigorous agitation throughout mixing and spraying operations.

In some cases, when incompatibility occurs, the addition of 1/4 teaspoon of a compatibility agent to the jar before adding this product may solve the problem (1/4 teaspoon is equal to 2 pints per 100 gallons of fertilizer). **IF THIS DOES NOT WORK, DO NOT ATTEMPT THE ADDITION OF THIS PRODUCT TO THE FERTILIZER.**

--Fertilizer Mixing Sequence: If a compatibility agent is not required, add half the fertilizer to the tank, make a premix of 1 part this product and 4 parts water and add premix to tank with agitation ON. Then add balance of fertilizer. Apply at once with agitation ON. --If a compatibility agent is required add it to half full tank before premix addition. Then proceed as above. **MAKE SURE TO FOLLOW ALL DIRECTIONS ON THIS AND THE FERTILIZER AND COMPATIBILITY AGENT LABELING.**

**CORN** -- Use the lower rate for small annual weeds. Use the higher rate for perennial or hard to kill weeds. To avoid injury, do not use with atrazine, oil, or other adjuvants. --Preemergence: Apply 1 to 2 quarts per acre after planting but before corn emerges. **DO NOT** apply to sandy soils.

--Emergence: Apply 1/2 pint per acre just as corn plants are breaking ground.

--Postemergence: Apply 1/2 pint per acre after corn is up. Three-fourths to 1 pint per acre may be needed to control some weeds, but this rate may injure the corn. If corn is over 8 inches tall, use drop nozzles to keep spray off corn foliage as much as possible. **DO NOT** apply from tasseling to dough stage. **DO NOT** apply to open whorls. High moisture and temperature conditions may cause injury or brittleness. **DO NOT** cultivate for a week to 10 days after treatment.

--Late Season Weed Control (To reduce weeds that interfere with harvest and reduce weed seed production): After silks are completely brown apply 1 to 2 pints per acre.

**SMALL GRAINS** (Not underseeded with a legume) -- NOTE: Do not let dairy animals or animals being finished for slaughter forage or graze treated fields within 2 weeks after treatment. Use the lower dose rate for small annual or biannual weeds. Use the higher dose rate for perennial or hard to kill weeds.

--Spring Wheat, Barley, and Rye: Apply 1/2 to 1 pint per acre when grain is in full tiller stage (4 to 8 inches high) but before boot stage when weeds are small and actively growing. Up to 2 pints per acre may be used to control difficult weed problems, but do not use unless some crop damage is acceptable.

--Winter Wheat and Rye: Apply 1/2 to 1 pint per acre only in spring before grain is in boot stage.

--Spring-seeded Oats: Apply 1/2 to 2/3 pint per acre at full tiller, but before early boot stage.

--Fall-seeded Oats Grown For Grain (Southern): Apply 2/3 to 1-1/2 pints per acre at full tiller, but before early boot stage. Difficult weeds may require higher rate, but some injury may occur since oats are less tolerant to 2,4-D than wheat or barley. DO NOT spray during or just after cold weather.

--Preharvest Treatment: Apply 1 to 1-2/3 pints per acre when grain is in hard dough stage to control weeds that will interfere with harvest. Apply when soil moisture is adequate for weed growth for best results. NOTE: DO NOT feed treated straw to livestock.

**MILO (GRAIN SORGHUM)** -- NOTE: Some varieties and hybrids are 2,4-D sensitive. Crop injury may also be increased by high moisture and temperature conditions. Check with your seed company and Extension Service for advice. Apply 1/2 pint per acre when plants are 5 to 15 inches tall. A higher rate of 2/3 to 1 pint per acre may be needed for some weeds, but chances of crop injury may increase. DO NOT use oil. DO NOT treat crop less than 5 inches tall or from boot to early dough stage. Use drop nozzles when crop is over 8 inches tall.

**CONSERVATION RESERVE PROGRAMS AND SET-ASIDE ACRES** -- NOTE: DO NOT use on alfalfa, clover, other legumes or newly seeded areas.

--Broadleaf Weeds: Apply 1-1/2 quarts per acre in sufficient water for good coverage. Deep-rooted perennial weeds may require a higher rate or repeated treatments.

--Brush: Apply 2-1/4 to 3 quarts in 5 to 10 gallons of water plus 1 gallon of oil or the labeled amount of crop oil concentrate or other adjuvant per acre for Buckbrush, Rabbitbrush, Sagebrush, Coyotebrush and other Chaparral Species. Apply 2-1/4 to 3 quarts in 5 gallons of oil or 4 gallons of water plus 1 gallon of oil or the proper amount of crop oil concentrate per acre for Sand Shinnery Oak.

**FOR SET-ASIDE ACRES** - Once the Agricultural Stabilization & Conservation Service has released Set-Aside Acres for grazing, do not allow dairy animals or animals being finished for slaughter to forage or graze treated fields within 2 weeks after treatment. DO NOT feed treated straw to livestock.

**FOR CONSERVATION RESERVE PROGRAMS** - DO NOT harvest or graze at any time.

**PASTURES AND RANGE LAND** -- NOTE: DO NOT apply after heads form or when grass is in boot to milk stage when a seed crop is desired. DO NOT use on alfalfa, clover, other legumes, or newly seeded pastures. DO NOT allow dairy animals to graze treated areas within 7 days of application.

--Broadleaf Weeds: Apply 1-1/2 quarts per acre in sufficient water for good coverage. Deep-rooted perennial weeds may require a higher rate or repeated treatments.

--Brush: Apply 2-1/4 to 3 quarts in 5 to 10 gallons of water plus 1 gallon of oil or the labeled amount of a crop oil concentrate or adjuvant per acre for Buckbrush, Rabbitbrush, Sagebrush, Coyotebrush and other Chaparral Species. Apply 2-1/4 to 3 quarts in 5 gallons of oil or 4 gallons of water plus 1 gallon of oil or the proper amount of a crop oil concentrate per acre for Sand Shinnery Oak.

**NON-CROP AREAS** -- To control plants susceptible to 2,4-D in drainage ditchbanks, fencerows, roadsides, and rights-of-way apply 3 quarts for woody plants or 1 quart for broadleaf weeds in 100 gallons of water. Oils or adjuvants may be added to increase effectiveness. Spray woody plants to run-off when fully leafed out and growing. Avoid spraying when plants are not actively growing, such as mid-summer. Reseeding the treated areas should be delayed until the following season. Deep-rooted perennials may require repeated treatments.

**SPOT TREATMENT** -- For weeds in non-crop areas, use 4 ounces to 3 gallons of water, mix thoroughly, and spray to run-off. This high dosage rate may only be used where injury can be tolerated.

Refer to product labeling for use restrictions to protect **ENDANGERED SPECIES**.

#### ENDANGERED SPECIES RESTRICTIONS

The following restrictions apply to use of this product after February 1, 1988.

Before use of this pesticide on range and/or pastureland, corn, wheat, sorghum, oats, barley, or rye in the counties listed below, you must obtain the **PESTICIDE USE BULLETIN FOR PROTECTION OF ENDANGERED SPECIES** for the county in which the product is to be used. The bulletin is available from your County Extension Agent, State Fish and Game Office, or your pesticide dealer. Use of this product in a manner inconsistent with the PESTICIDE USE BULLETIN FOR PROTECTION OF ENDANGERED SPECIES is a violation of Federal laws.

#### **RANGE AND PASTURELAND USES:**

**ALABAMA:** Cherokee, DeKalb, Etowah, Jackson, and Marshall. **ARIZONA:** Cochise, Coconino, Gila, Graham, Maricopa, Mohave, Navajo, Pima, Pinal, and Yavapai. **CALIFORNIA:** Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Inyo, Lake, Los Angeles, Mendocino, Merced, Nevada, Orange, Sacramento, San Benito, San Bernardino, San Clemente Island, San Diego, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Barbara Island, Solano, Sutter, Tehama, Ventura and Yolo. **COLORADO:** Delta, Jackson, La Plata, Mesa, Montezuma and Montrose. **FLORIDA:** Charlotte, Franklin, Jefferson, Lee, Liberty, and Orange. **GEORGIA:** Brantley, Towns, and Wayne. **HAWAII:** Islands of Hawaii and Maui and the District of Lahaina. **IDAHO:** Idaho. **ILLINOIS:** DuPage, Lee, McHenry, Ogle, and Winnebago. **IOWA:** Butler, Clarke, Dickinson, Emmet, Howard, Kossuth, Lucas, Osceola, Story, and Winneshiek. **KENTUCKY:** Fleming, Nicholas, and Robertson. **MINNESOTA:** Cottonwood, Goodhue, Jackson, and Renville. **MISSOURI:** Christian, Dade, and Green. **NEBRASKA:** Cherry, Garden, and Hooker. **NEVADA:** Nye. **NEW MEXICO:** Catron, Chaves, Dona Ana, Eddy, Lincoln, McKinley, Otero, San Juan, and Sierra. **NORTH CAROLINA:** Henderson. **OREGON:** Harney and Wallowa. **SOUTH CAROLINA:** Greenville and McCormick. **TENNESSEE:** Davidson, Rutherford, and Wilson. **TEXAS:** Bandera, Brazos, Brewster, Burleson, Culberson, Edwards, El Paso, Grimes, Harris, Hays, Hudspeth, Jim Wells, Kerr, Kimble, Kleburg, Nueces, Pecos, Presidio, Real, Refugio, Robertson, Runnels, San Augustine, Starr, Terrell, Uvalde, Val Verde, and Zapata. **UTAH:** Beaver, Cache, Carbon, Duchesne, Emery, Garfield, Grand, Iron, Kane, Piute, San Juan, Sanpete, Sevier, Uintah, Utah, Washington, and Wayne. **WISCONSIN:** Dane, Pierce, Rock, and Sauk.

#### **CROP USES (corn, sorghum, wheat, barley, oats, & rye):**

**ALABAMA:** Colbert, Greene, Jackson, Lamar, Lauderdale, Limestone, Madison, Marshall, Morgan, Pickens, and Sumter. **ARKANSAS:** Clay, Clark, Cross, Lawrence, Lee, Poinsette, Randolph, Sharp, and St. Francis. **CALIFORNIA:** Solano. **FLORIDA:** Broward, Dade, Glades, and Palm Beach. **KENTUCKY:** Ballard, Butler, Edmundson, Green, Hart, Jackson, Laurel, Livingston, Marshall, McCracken, McCreary, Pulaski, Rockcastle, Taylor, Warren, and Wayne. **MISSISSIPPI:** Itawamba, Lowndes, Monroe, and Noxubee. **NORTH CAROLINA:** Edgecombe, Nash, and

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Pitt. **TENNESSEE:** Bedford, Blount, Claiborne, Decatur, Franklin, Hancock, Hardin, Hickman, Knox, Lincoln, Loudon, Marshall, Maury, Meigs, Monroe, Rhea, Roane, Scott, Sequatchie, Smith, Sullivan, and Wayne. **VIRGINIA:** Lee, Russell, Scott, Smyth, Tazewell, Washington, and Wise.

**NOTICE OF WARRANTY:** Buyer assumes all risk of use, storage, or handling of this product when not in strict accordance with directions given herewith.

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