

U.S. ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF PESTICIDES PROGRAMS  
REGISTRATION DIVISION (75-767)  
WASHINGTON, DC 20460

EPA REGISTRATION NUMBER	407-431
TERM OF ISSUANCE	Conditional
NAME OF PESTICIDE PRODUCT	Imperial 2,4-D 560 Lo Vol Ester Weed Killer

**NOTICE OF PESTICIDE:**  REGISTRATION  
 REREГИSTRATION  
(Under the Federal Insecticide, Fungicide,  
and Rodenticide Act, as amended)

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

Imperial, Inc.  
P.O. Box 98  
Shenandoah, IA 51601

**NOTE:** Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A) provided that you:

1. Submit/cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) when the Agency requires all registrants of similar products to submit such data.

2. Make the labeling changes listed below before you release the product for shipment:

- a. Add the phrase "EPA Registration No. 407-431."
- b. Under Environmental Hazards, change "Keep out of lakes, ponds, or streams" to read "Do not apply directly to water."

3. Submit one (1) copy of final printed labeling before you release the product for shipment. Refer to the A-79 Enclosure for a further description of final printed labeling.

ATTACHMENT IS APPLICABLE

**BEST AVAILABLE COPY**

SIGNATURE OF APPROVING OFFICIAL

DATE

APR 8 1987

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Richard F. Mountfort *RFM*  
Product Manager (23)  
Fungicide-Herbicide Branch  
Registration Division (TS-767C)

Enclosures

BEST AVAILABLE COPY

3/8  
October 15, 1986  
(Front Panel)

IMPERIAL

2,4-D  
560 LO VOL ESTER  
WEED KILLER

ACTIVE INGREDIENT:

Isocetyl Ester of 2,4-Dichlorophenoxyacetic acid*	88.8%
INERT INGREDIENTS:	11.2%
Total	100.0%

\*Isomer Specific by AOAC Method No. 6.275 13th Edition 1980  
2,4-Dichlorophenoxyacetic acid equivalent ... 59.1%  
Contains 5.6 lb. 2,4-Dichlorophenoxyacetic acid per gallon

KEEP OUT OF REACH OF CHILDREN

(12 pt. type size) ✓

CAUTION

(18 pt. type size)

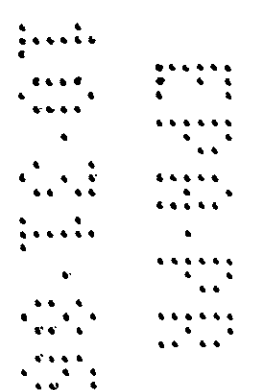
SEE SIDE PANELS FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No. 407-UGR  
EPA Est. No. 407-IA-1S, 407-MN-1A  
Superscript used corresponds to  
letter in lot number

*with comment*  
APR 3 1987  
407-431

NET CONTENTS

Manufactured By  
IMPERIAL INC.  
SHELANDOAH, IA 51601



BEST AVAILABLE COPY

(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. Keep out of lakes, ponds, or streams. Do not contaminate water by cleaning of equipment or disposal of wastes. Do not contaminate waters used for irrigation or domestic purposes. Do not apply directly to water.

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.

BEST AVAILABLE COPY

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, artichoke, bindweeds (hedge, field, and European), tall and devil's beggarticks, blueweed (Texas), boxelder, broomweed, buckbrush, buckhorn plantain, buckwheat (wild), burdock, burhead, buttercup, carpetweed, catnip, chanise, chickweed, chicory, cocklebur, coffeeweed, common mullein, cornflower, coyotebrush, creeping jenny, croton, curly indigo, dandelion, docks, dog fennel, common duckweed, elderberry, annual fleabane, fanweed, galinsoga, wild garlic, goatsbeard, goldenrod, ground ivy, halogeton, hemp, henbit, jewelweed, jimsonweed, kochia, lambsquarters, locoweed, mallow (Venice), manzanita, marshelder, milkvetch, climbing milkweed, 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, smartweed, sneezeweed (bitter), sowthistle (annual), Spanishneedles, stinkweed, sumac, sunflower, sweetclover, tansymustard, tansy ragwort, thistle (bull, Canadian, musk, and Russian), tumbleweed, velvetleaf, Virginia creeper, Waterprimrose, willow, wild sweet potato, witchweed, wormwood, yellow rocket, yellow starthistle. 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 two hours.

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.

When using ground equipment, keep boom or nozzles close to crop, apply 20 gallons or more 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.

BEST AVAILABLE COPY

**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
	TEASPOONS OF 2,4-D PER PINT OF FERTILIZER				
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: Add this product to liquid fertilizer for weed and feed applications at the rates specified on this label. Fill the equipment half full of fertilizer, make a pre-mix of 1 part this product and 4 parts water and add to fertilizer with agitation ON. Then add balance of fertilizer and apply immediately with agitation ON. **DO NOT** leave spray mixture in tank overnight.

**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 1/3 - 2 2/3 pints per acre after planting but before corn emerges. **DO NOT** apply to sandy soils.

--Emergence: Apply 2/3 pint per acre just as corn plants are breaking ground. --Postemergence: Apply 1/3 pint per acre after corn is up. If corn is over 8 inches tall, use drop nozzles to keep spray off corn foliage as much as possible. 2/3 pint per acre may be needed to control some weeds, but this rate may injure the corn. **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 2/3 - 1 1/3 pints per acre.

BEST AVAILABLE COPY

**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 1/3 pint per acre when grain is in full tiller stage (4 to 8 inches high) but before dough stage when weeds are small and actively growing. 1 1/3 pint 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 1/3 - 1/2 pint per acre only in spring before grain is in boot to dough stage.

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

--Fall-seeded Oats Grown For Grain (Southern): Apply 1/2 - 1 pint per acre at full tiller, but before early dough 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 2/3 - 1 1/3 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.

**MILK (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 1/3 pint per acre when plants are 5 to 15 inches tall. A higher rate of 1/2 - 2/3 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.

**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 - 3 pints per acre in sufficient water for good coverage. Deep-rooted perennial weeds may require a higher rate or repeated treatments.

--Brush: Apply 1 1/2 - 2 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 1 1/2 - 2 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 4 pints for woody plants or 2 2/3 pints 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 1/6 pint 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.

**NOTICE OF WARRANTY:** Buyer assumes all risk of use, storage, or handling of this

BEST AVAILABLE COPY