

# HIVOL<sup>®</sup>-44

Plant Growth Regulator  
Do Not Use As A Herbicide  
FOR USE IN AZ, CA, FL, AND TX

**ACTIVE INGREDIENT:**

Isopropyl Ester of 2,4-Dichlorophenoxyacetic Acid\* .....44%

**INERT INGREDIENTS:\*\*** .....56%

**Total:** .....100%

\*Equivalent to: 37% (w/w) 2,4-Dichlorophenoxyacetic Acid (2,4-D) or 3.07 lb 2,4-D/gal Hivol-44

\*\*Contains Petroleum Distillate

**KEEP OUT OF REACH OF CHILDREN**

## CAUTION

PRECAUCION AL USARIO: SI USTED NO LEE INGLES, NO USE  
ESTE PRODUCTO HASTA QUE LE ETIQUETA HAYA SIDO EXPLICADO AMPLIAMENTE.

<b>FIRST AID</b>	
<b>If swallowed:</b>	<ul style="list-style-type: none"><li>• Immediately call a poison control center or doctor.</li><li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li><li>• Do not give any liquid to the person.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 – 20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If in eyes:</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15 – 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If inhaled:</b>	<ul style="list-style-type: none"><li>• Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>
<b>NOTE TO PHYSICIAN</b>	
Contains petroleum distillate –May pose an aspiration pneumonia hazard.	
<b>EMERGENCY INFORMATION</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. <b>FOR THE FOLLOWING EMERGENCIES, PHONE 24 HOURS A DAY:</b> For Medical Emergencies phone:.....1-888-681-4261 For Transportation Emergencies, including spill, leak or fire, phone: CHEMTREC.....1-800-424-9300 For Product Use Information phone : AMVAC.....1-888-462-6822	

EPA Reg. No. 5481-509  
EPA Est. No. 64864-WA-1

Net Contents:  
As Marked on Container

Lot #  
Made in USA



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## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Harmful if swallowed, inhaled or absorbed through skin. Avoid inhaling fumes or spray. Avoid contact with skin, eyes, or 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 E on an EPA chemical resistance category selection chart.

All mixers, loaders, applicators, flaggers and other handlers must wear:

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks
- Protective eyewear
- Chemical-resistant apron when applying to citrus, mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.
- See engineering controls for additional requirements

#### USER SAFETY REQUIREMENTS

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables **exist**, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### ENGINEERING CONTROLS STATEMENT:

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS. Pilots must use an enclosed cockpit that meets the requirements listed in the WPS for agricultural pesticides [40CFR 170.240 (d)(6)].

#### ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment wash waters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

#### PHYSICAL OR CHEMICAL HAZARDS

Combustible. Do not use or store the product near heat or open flame.

#### Spray Drift Management

A variety of factors including weather conditions (e.g., wind directions, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial, airblast, chemigation) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

#### Droplet Size

When applying sprays that contain 2,4-D as the sole active ingredient, or when applying sprays that contain 2,4-D mixed with active ingredients that require a coarse or coarser spray, apply only as a coarse or coarser spray (ASAE standard 572) or a volume mean diameter of 385 microns or greater for spinning atomizer nozzles.

When applying sprays that contain 2,4-D mixed with other active ingredients that require a medium or more fine spray, apply only as a medium or coarser spray (ASAE standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

### **Wind Speed**

Do not apply at wind speeds greater than 15mph. Only apply this product if the wind direction favors on-target deposition and there are not sensitive areas (including, but not limited to, residential areas, bodies of water, known habitat for nontarget species, nontarget crops) within 250 feet downwind. If applying a medium spray, leave on swath unsprayed at the downwind edge of the treated field.

### **Temperature Inversions**

If applying at wind speeds less than 3 mph, the applicator must determine if: a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or instable atmospheric conditions.

### **Susceptible Plants**

Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption. Susceptible crops include, but are not limited to, cotton, okra, flowers, grapes (in growing stage), fruit trees (foliage), soybeans (vegetative stage), ornamentals, sunflowers, tomatoes, beans, and other vegetables, or tobacco. Small amounts of spray drift that might not be visible may injure susceptible broadleaf plants.

### **Other State and Local Requirements**

Applicators must follow all state and local pesticide drift requirements regarding application of 2,4-D herbicides. Where states have more stringent regulations, they must be observed.

### **Equipment**

All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

2,4-D esters may volatilize during conditions of low humidity and high temperatures. Do not apply during conditions of low humidity and high temperatures.

#### For aerial application:

The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.

Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. This requirement does not apply to forestry or rights-of-way applications

When applications are made with a crosswind, the swath will be displaced downwind. The applicator must compensate for this by adjusting the path of the aircraft upwind.

#### For ground boom application:

Do not apply with a nozzle height greater than 4 feet above the crop canopy.

### **USER SAFETY RECOMMENDATIONS**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/**PPE** 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.

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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.

### **TO BE USED AS A PLANT GROWTH REGULATOR ON CITRUS.**

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.

#### **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.

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 made of any waterproof material,
- Shoes plus socks.

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

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### **A Copy Of This Labeling Must Be In The Possession Of The User At The Time Of Application.**

Use of this product in certain portions of California, Oregon, and Washington is subject to the January 22, 2004 Order for injunctive relief in Washington Toxics Coalition, et. al. v. EP, C01-0132C, (W.D. WA). For further information, refer to <http://www.epa.gov/espp>.

**Attention:** DO NOT use equipment used in spraying Hivol-44 to spray 2,4-D sensitive plants. Use caution in disposing of solutions as they can kill or cause extreme injury to sensitive plants. Dispose of residues in a manner to avoid contamination of underground water supplies.

**Avoid spray drift to susceptible plants** as this product may injure cotton, bean, peas, alfalfa, ornamentals, etc. (Coarse sprays are less likely to drift.) Thoroughly clean spray equipment, using hot soap suds followed by soaking and washing with ammonia or baking soda before using for other purposes. DO NOT store near fertilizers, seeds, insecticides or fungicides. Vapors from this product may injure susceptible plants in the immediate vicinity. Protect from freezing.

**PRE-HARVEST FRUIT DROP CONTROL:** Add the specified quantity of Hivol-44 to spray tank and spray to give adequate coverage. See charts below for spray solution volume per acre. A minimum of 100 gallons water per acre is recommended for mature trees. **DO NOT USE ON CITRUS TREES YOUNGER THAN SIX YEARS. DO NOT APPLY WITHIN 7 DAYS OF HARVEST.**

<b>PRE-HARVEST FRUIT DROP CONTROL: SPRAY SOLUTIONS OF 500 GALLONS PER ACRE OR LESS</b>				
Variety/Species	Time	gram acid equivalent/a (gac/a)	Application Rates of Hivol-44 Per Acre	
			ml/acre	oz./acre
<b>Navel Orange</b> <sup>1</sup>	Sept.-Nov.*	30	75	2.5
	Sept.-Nov (in hydrated lime)	45	112	3.75
	Dec.-Jan.**	15	37.5	1.25
<b>Valencia Orange</b> <sup>1</sup>	Young fruit at least ½" dia.	15	37.5	1.25
<b>Grapefruit</b> <sup>1</sup> (Summer Drop)	Young fruit at least ¾" dia.	30	75	2.5
<b>Grapefruit</b> <sup>1</sup> (Winter Drop)	Sept.- Jan.**	30	75	2.5
	Sept. - Jan.** (in hydrated lime)	45	112	3.75
<b>Lemon</b> ***	Oct.-Dec.	15	37.5	1.25
<b>Tangelo, Minneola</b>	Sept.-Nov.	30	75	2.5

<sup>1</sup> Limited to one application per crop cycle.

<b>PRE-HARVEST FRUIT DROP CONTROL : SPRAY SOLUTIONS ABOVE 500 GALLONS PER ACRE</b>						
Variety/Species	Time	ppm	Amount of Hivol-44 Per 100 Gallons			
			ml	Maximum rate per acre (ml)****	fl. oz.	Maximum rate per acre (fl.oz)****
<b>Navel Orange</b> <sup>1</sup>	Sept.-Nov.*	16	15.2	(122)	0.51	(4.1)
	Sept.-Nov (in hydrated lime)	24	22.8	(182)	0.77	(6.2)
	Dec.-Jan.**	8	7.6	(61)	0.26	(2.1)
<b>Valencia Orange</b> <sup>1</sup>	Young fruit at least ½" dia.	8	7.6	(61)	0.26	(2.1)
<b>Grapefruit</b> <sup>1</sup> (Summer Drop)	Young fruit at least ¾" dia.	16	15.2	(122)	0.51	(4.1)
<b>Grapefruit</b> <sup>1</sup> (Winter Drop)	Sept.- Jan.**	16	15.2	(122)	0.51	(4.1)
	Sept. - Jan.** (in hydrated lime)	24	22.8	(182)	0.77	(6.2)
<b>Lemon</b> *** <sup>1</sup>	Oct.-Dec.	8	7.6	(61)	0.26	(2.1)
<b>Tangelo, Minneola</b> <sup>1</sup>	Sept.-Nov.	16	15.2	(122)	0.51	(4.1)

\* Sept./Oct. May be too early to provide good control when conditions favor fruit drop (i.e. warm winter, protracted harvest). A second application in Nov./Dec. may be needed. Consult your local Hivol-44 dealer, local farm advisor, or AMVAC representative.

\*\* January sprays may be somewhat risky, especially when environmental factors favor and earlier-than-usual Spring flush of growth. Consult your local Hivol-44 dealer, local farm advisor, or AMVAC representative.

\*\*\* Applications to coastal lemons are risky because of their everbearing nature. Before use, consult with your local Hivol-44 dealer, local farm advisor, or AMVAC representative.

\*\*\*\* Maximum amount of Hivol-44 recommended per acre, regardless of water volume used.

<sup>1</sup> Limited to one application per crop cycle.

**AERIAL APPLICATION AND CONCENTRATE SPRAYS:**

September through January. Apply in a minimum of 20 gallons of water per acre. DO NOT exceed a concentration of 200 ppm (38 ml. or 1.28 fl. oz. in 20 to 200 gallons of water). DO NOT apply within 7 days of harvest. Air and concentrate sprays may not provide adequate coverage.

**PREVENTION OF LEAF AND FRUIT DROP CAUSED BY A PESTICIDE OIL SPRAY:**

For use in pesticide oil sprays to counteract leaf drop and fruit drop caused by the oil. Add 2.2 ml (0.07 fl. oz.) to 3.8 ml (0.12 fl. oz.) per gallon of oil. Apply thorough coverage.

The addition of Hivol-44 to the pesticide oil spray provides some degree of preharvest fruit drop control. But, because of the long time span between most pesticide oil sprays and the onset of mature fruit drop, the Hivol-44 + oil spray mixture may not give adequate mature fruit drop control, especially if the per acre Hivol-44 dosage is less than 24 grams acid equivalent (gae/acre) or 60 ml/acre (2.02 fl. oz./acre) Hivol-44.

Under these conditions, an aqueous Hivol-44 preharvest spray may be needed. If needed, follow the guidelines in the chart below:

<b>ADDITIONAL PREHARVEST HIVOL-44 SPRAY REQUIREMENTS (in addition to Hivol-44 + oil spray)</b>	
<b>Time from Hivol-44 + oil spray application to mature fruit drop period</b>	<b>Additional preharvest Hivol-44 application*</b>
more than 6 months	Apply full rate recommended for preharvest fruit drop control.
4 to 6 months	Apply 50% of recommended rate for preharvest fruit drop control.
3 to 4 months	If per acre dosage (in oil spray) was less than 60 ml/acre (2.02 fl. oz./acre), apply 25% of recommended rate for preharvest fruit drop control.
3 to 4 months	If per acre dosage (in oil spray) was at least 60 ml/acre (2.02 fl. oz./acre), NO additional product should be applied.

\* Apply to trees 6 years and older. DO NOT apply within 7 days of harvest.

**INCREASING FRUIT SIZE:** Apply outside coverage.

<b>INCREASING FRUIT SIZE</b>				
<b>Variety</b>	<b>Application Time</b>	<b>Gram Acid Equivalent (gae)</b>	<b>Rate - Water Spray</b>	
			<b>oz./acre</b>	<b>ml./acre</b>
Valencia <sup>1</sup> and Navel Orange* <sup>1</sup>	When Fruit Diameter is 3/16" - 1/4" (5-6mm)	23	2.0	58
	1/4" - 1/2" (6-13mm)	30	2.5	75
	1/2" - 5/8" (13-16mm)	38	3.2	94
	5/8" - 3/4" (16-19mm)	45	3.8	112
Grapefruit** <sup>1</sup>	When Fruit Diameter			

is			
1/4" - 3/8" (6-9mm)	23	2.0	58
3/8" - 5/8" (9-16mm)	30	2.5	75
5/8"- 3/4" (16-19mm)	38	3.2	94
3/4" - 1" (19-25mm)	45	3.8	112

\* Fruit-sizing sprays require excellent coverage. May cause an increased roughness of the rind. For Valencia Oranges, also controls mature fruit drop and may slightly delay granulation in new crops. For Navel Oranges, may decrease fruit splitting.

\*\* Fruit-sizing sprays require excellent coverage. Also controls mature fruit drop.

<sup>1</sup> Limited to one application per crop cycle.

**PACKING HOUSE USE TO MAINTAIN HEALTHY BUTTONS ON LEMONS:** Use a concentration of 500 ppm (45ml or 1 5/8 fl. oz. in 10 gal. of water). May be added to wax emulsion on lemons waxed prior to storage. Otherwise use a special treatment (flush or spray) following the final fresh water rinse of the fruit. **DO NOT** use with Nitrogen Trichloride (Decco). **Do not use on fruit for short-term storage.** Limited to one application per crop.

### STORAGE AND DISPOSAL

**DO NOT contaminate water, food or feed by storage or disposal.**

**PESTICIDE STORAGE:** DO NOT store near food, feed, fertilizers, seeds, insecticides or fungicides. Store in the original container in a secure, dry and temperate area. Keep container closed when not in use. DO NOT store or use around the home. Do not store 30-gallon drums over two high. In case of spill or leak, soak up with sand, earth or synthetic absorbent (do not use alkaline absorbents) and dispose of wastes in compliance with local, State and Federal Regulations. Avoid contact with water.

This product may crystallize if stored at cold temperatures. If crystallization occurs, call AMVAC for instructions before using.

**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate, is a violation of Federal Law and may contaminate groundwater. If these wastes cannot be disposed of by use 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.

**CONTAINER DISPOSAL: Nonrefillable container. Do not reuse or refill this container. Plastic Containers:** Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. 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 Containers:** Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling reconditioning, or puncture and dispose of in a sanitary landfill, or by other approved State and local procedures.

### LIMITED WARRANTY AND DISCLAIMER

The manufacturer warrants (a) that this product conforms to the chemical description on the label; (b) that this product is reasonably fit for the purposes set forth in the directions for use, subject to the inherent risks referred to herein, when it is used in accordance with such directions; and (c) that the directions, warnings, and other statements on this label are based upon responsible experts' evaluations of reasonable tests of effectiveness, of toxicity to laboratory animals and to plants and residues on food crops, and upon reports of field experience. Tests have not been made on all varieties of food crops and plants, or in all states or under all conditions.

**TO THE EXTENT CONSISTENT WITH APPLICABLE LAW THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE SET FORTH HEREIN. THE MANUFACTURER NEITHER MAKES NOR INTENDS, NOR DOES IT AUTHORIZE ANY AGENT OR REPRESENTATIVE, TO MAKE ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, AND IT EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTY OF QUALITY OR PERFORMANCE. THIS WARRANTY DOES NOT EXTEND TO, AND THE BUYER SHALL BE SOLELY RESPONSIBLE FOR, ANY AND ALL LOSS OR DAMAGE WHICH RESULTS FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL DIRECTIONS, WARNINGS OR CAUTIONS.**

**TO THE EXTENT CONSISTENT WITH APPLICABLE LAW BUYER'S EXCLUSIVE REMEDY AND MANUFACTURER'S OR SELLER'S EXCLUSIVE LIABILITY FOR ANY AND ALL CLAIMS, LOSSES, DAMAGES, OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION, TO REPLACEMENT OF, OR THE REPAYMENT OF THE PURCHASE PRICE FOR, THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW IN NO EVENT, SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.**

AMVAC offers this product, and Buyer accepts it, subject to the foregoing Limited Warranty which may be varied only by agreement in writing signed by an authorized representative of AMVAC.

Hivol-44 is a registered trademark of AMVAC Chemical Corporation.

AMVAC Chemical Corporation  
4100 E. Washington Blvd.  
Los Angeles, CA 90023 U.S.A.  
1-888-462-6822