

51036-430

5/21/2004

4/10



U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Registration Division (7505C)  
401 "M" St., S.W.  
Washington, D.C. 20460

EPA Reg.  
Number:

51036-  
430✓

Date of Issuance:

MAY 21 2004

NOTICE OF PESTICIDE:

  x   Registration  
       Reregistration  
(under FIFRA, as amended)

Term of Issuance:

Conditional

Name of Pesticide Product:

Thidiazuron 4 SC  
Cotton Defoliant

Name and Address of Registrant (include ZIP Code):

Micro-Flo Company  
P.O. Box 772099  
Memphis, TN 38117-2099

**Note:** Changes in labeling 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 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.

Registration is in no way to be construed as an endorsement or recommendation of this product by the 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 sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.

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

- a. Add the phrase, "EPA Reg. No. 51036-430".
- b. When final printed labels are prepared assure that the Signal Word CAUTION and Keep Out of the Reach of Children on the front panel meets the type size requirements specified by 40 CFR 156.60(b)(1).

Signature of Approving Official:

/s/

Date:

MAY 21 2004

2/10

page 2

EPA Reg. No. 51036-430

c. At the beginning of the list of Personal Protective Equipment (PPE) within the Precautionary Statements, add the statements "Some of the materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart." In addition, revise the requirement for "waterproof gloves" to a requirement for "chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride."

3. Prior to formulation of this product, submit to this office the following information:

a. Registration number and establishment number of the product for which your product is derived,

b. The name and address of the entity from which the product was obtained, and

c. A copy of the bill of sale

4. Submit the results of storage stability (GRN 830.6317) and corrosion characteristics (GRN 830.6320) studies to EPA upon completion.

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

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.

Joanne I. Miller  
Product Manager (23)  
Herbicide Branch  
Registration Division (7505C)

Enclosure

ACCEPTED  
with COMMENTS  
in EPA Letter Dated  
**MAY 21 2004**

**MICRO FLO COMPANY LLC**

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

**THIDIAZURON 4 SC**  
**COTTON DEFOLIANT**

51036-430

**For Agricultural Use Only**

**ACTIVE INGREDIENT:** Thidiazuron (N-phenyl-N'-1,2,3-thiadiazol-5-ylurea)\*..... 42.4%  
**Other ingredients:** ..... 57.6%  
**\*Not less than 4.0 lbs. of thidiazuron per gallon** **TOTAL** 100.0%

**KEEP OUT OF REACH OF CHILDREN**  
**CAUTION - CAUCION**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

**FOR MEDICAL AND TRANSPORTATION EMERGENCIES ONLY, CALL 24 HOURS A DAY**  
**1-800-832-HELP (1-800-832-4357)**

**FIRST AID**

<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• 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.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.</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.</li><li>• 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>IF SWALLOWED:</b>	<ul style="list-style-type: none"><li>• Immediately call a poison control center or doctor for treatment advice.</li><li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>Have the product container or label with you when calling a poison control center or doctor or going for treatment.</b>	

**PRECAUTIONARY STATEMENTS**  
**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**  
**CAUTION**

Harmful if swallowed, inhaled, or absorbed through the skin. Avoid breathing spray mist. Avoid contact with skin, eyes, and clothing. Do not contaminate food or feedstuffs.

**EMERGENCY NUMBERS:**

Transportation or spill, call CHEMTREC 800-424-9300  
Human Health, 800-832-HELP (4357)  
Animal Health, call ASPCA at 800-345-4735

EPA Reg. No. 51036-XXX

EPA Est. No. XXX-XX-XXX

Manufactured by  
Micro Flo Company LLC  
P.O. Box 772099  
Memphis, TN 38117

4/10

## PERSONAL PROTECTIVE EQUIPMENT

### Applicators and other handlers must wear:

- Long-sleeved shirts and long pants
- Waterproof gloves
- 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.

## 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.

## USER SAFETY RECOMMENDATIONS

### Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide get inside. Then wash thoroughly and put on clean clothing.

## ENVIRONMENTAL HAZARDS

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 when disposing of equipment washwaters. Do not apply when weather conditions favor drift from target area.

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store at temperatures below 100° F. If allowed to freeze, remix before using.

**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 incineration or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**RETURNABLE – REFILLABLE CONTAINERS:** This material may be repackaged in refillable containers by Micro Flo Company or a registered establishment under contract to Micro Flo Company. After use, return the container to the point of purchase or designated locations. This container must only be refilled with THIDIAZURON-DIURON SC Cotton Defoliant. DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE. Prior to refilling, inspect thoroughly for damage such as cracks, punctures, abrasions and damaged or worn out threads on closure devices. Do not refill or transport damaged or leaking containers. Check for leaks after refilling and before transportation. If the container is not being refilled, return it to the point of purchase.

**DO NOT REUSE EMPTY CONTAINER**

## GENERAL INFORMATION

THIDIAZURON 4 SC, a harvest aid compound, is used for leaf removal prior to cotton harvest. THIDIAZURON 4 SC can be used in aircraft or ground equipment and is easily dispersed in water. The noticeable effect of THIDIAZURON 4 SC may take several days. Low temperature and other adverse conditions may require longer times and / or higher dosages for adequate defoliation.

THIDIAZURON 4 SC reduces staining of lint during harvesting and ginning by inhibiting regrowth.

5/10

## USE PRECAUTIONS

This product is not to be applied through any type of irrigation system.

Effectiveness of THIDIAZURON 4 SC will be reduced if rainfall occurs within 24 hours post application.

Foliage from treated plants or gin trash is not to be fed to livestock. Do not use immature crops for feed.

**Rotation to the following crops requires the minimum of the specified periods below after the last application of THIDIAZURON 4 SC.**

small grains, sorghum, corn, or root crops (except carrots, onions or sugarbeets) .....	two (2) weeks
legumes (including alfalfa) or leafy vegetables (except lettuce and spinach) .....	two (2) months
sugar beets .....	four (4) months
carrots, onions and spinach .....	nine (9) months
lettuce .....	ONLY when soil has been deep-plowed (12-15 inches) .....
	nine (9) months

**Prevent spray drift from contacting crops other than mature cotton, since this product may defoliate or injure other plant species.**

Mixtures with organophosphate products can increase non-target crop phytotoxicity. Additional care should be exercised when lettuce, citrus, cantaloupes or any other edible crops are adjacent to THIDIAZURON 4 SC treated fields.

## PROCEDURES TO LOWER SPRAY DRIFT POTENTIAL ONTO NON-TARGET CROPS

Under windy conditions applications of THIDIAZURON 4 SC may drift to non-target crops. The following guidelines may help reduce drift potential.

- When wind speeds exceed ten (10) miles per hour at time of application do not apply THIDIAZURON 4 SC either by air or ground equipment
- Nozzle pressures of (20 – 30 psi) is recommended.
- When a temperature inversion is present and / or conditions favor an inversion to develop prior to completing application(s) do not apply THIDIAZURON 4 SC
- In addition, do not apply THIDIAZURON 4 SC by air within one-half (1/2) mile of lettuce. If using ground equipment do not apply THIDIAZURON 4 SC within 100 feet of lettuce

## RIO GRANDE VALLEY OF TEXAS PROCEDURES TO LOWER SPRAY DRIFT POTENTIAL

The following procedures can help reduce the potential for drift.

- If wind speeds exceed ten (10) miles per hour do not apply THIDIAZURON 4 SC either by ground or air. If wind speeds are less than ten (10) miles per hour follow local recommendations from your State Extension Cotton Specialist.
- Nozzle pressures of (20 – 30 psi) is recommended.
- When a temperature inversion is present and / or conditions favor an inversion to develop prior to completing application(s) do not apply THIDIAZURON 4 SC
- The maximum nozzle orifice size that provides proper coverage and deposition of product should be used.

6/10

- In citrus areas do not apply THIDIAZURON 4 SC by air within five (5) miles downwind of the point of application of citrus in flush. If by ground equipment do not apply THIDIAZURON 4 SC within one-half (1/2) mile downwind of the point of application of citrus in flush

### **DIRECTIONS FOR USE**

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

Do not make applications of this product that may contact workers or other persons either by drift or directly. Protected handlers only are allowed in the area during application. Consult your State or Tribe agency responsible for pesticide regulations for any specific recommendation.

#### **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 statement 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 worn over long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate or butyl rubber gloves
- Chemical-resistant footwear plus socks
- Protective eyewear

### **TIME OF APPLICATION**

THIDIAZURON 4 SC defoliant applications are to be made only on mature cotton plants when the uppermost harvestable boll is mature. Boll maturity is defined as: 1) when boll is too hard to be dented when squeezed between thumb and finger; 2) when cutting a cross section with a sharp knife is difficult; 3) when seeds in cross section lack liquid within the seed coat or outer edges of seed coat are light brown, and 4) when fully developed cotyledons are present.

Make applications of THIDIAZURON 4 SC at least five (5) days prior to expected harvest date.

**NOTE:** The following conditions will determine adequate defoliation with THIDIAZURON 4 SC:

- Cotton is actively growing
- High relative humidity
- Cotton plant leaves are turgid and not desiccated

### **CONDITIONS**

THIDIAZURON 4 SC when used alone under low nighttime temperatures (below 60°F) can provide less than expected defoliation and / or regrowth suppression.

THIDIAZURON 4 SC performance under low temperature is variable. Temperature should be above 60°F for 2 – 3 days prior to and following application or reduced defoliation and regrowth suppression can be expected.

7/10

The effects of THIDIAZURON 4 SC on heat or drought stressed cotton having non-turgid leaves and extremely waxy leaf surfaces may have reduced defoliation and regrowth suppression exhibited.

#### **THIDIAZURON 4 SC AS A FOLLOW UP DEFOLIATION TREATMENT**

Reduced or unsatisfactory defoliation may occur when THIDIAZURON 4 SC is used as a second or follow up treatment, except when following a prior THIDIAZURON 4 SC or THIDIAZURON 50WP stand alone or tank mixed application with other defoliant. Also, see CONDITIONS.

#### **CROP OIL / ADJUVANTS USAGE**

Crop oil concentrates (COC's) or penetrating oils approved for agricultural crops have shown to improve performance under low nighttime temperatures (60° - 65°F) and heat or drought conditions. Follow adjuvant label recommendations for proper rates.

Adjuvant usage in the desert Southwest (i.e., Arizona and California) is recommended when applying THIDIAZURON 4 SC.

**PRECAUTION:** During periods of high temperature adjuvants can cause leaf desiccation and / or leaf freezing. Compounds that promote desiccation of leaf tissue are not recommended.

#### **MIXING INSTRUCTIONS**

1. Fill spray applicator tank at least one half full
2. Start agitation
3. Add recommended amount of THIDIAZURON-DIURON EC
4. Continue agitation and fill tank
5. Agitation should continue throughout the application

#### **TANK MIX ADJUVANTS**

Use of a surfactant or compatibility agent is recommended when using tank mixes of THIDIAZURON 4 SC and organophosphate defoliant to improve overall defoliation and aid in tank clean-out. Always perform a small jar test for compatibility prior to mixing in the spray tank.

Use only products which are exempt from tolerance under 40 CFR 180.1001.

Follow manufacturers label instructions of the appropriate adjuvant.

#### **APPLICATION**

Use a sufficient amount of water with the specified dosage of THIDIAZURON 4 SC defoliant to give complete and uniform coverage of leaf surfaces. For ground equipment apply 10 – 25 gallon per acre and by air use 3 – 10 gallons per acre. Maintain agitation during application.

Do not allow mixed spray solution to stand overnight.

#### **DOSAGE**

Use 0.1 – 0.2 lb. active ingredient/acre. One gallon of THIDIAZURON 4 SC will treat 20 – 40 acres. The higher rates should be used under low temperature conditions (60° - 65°F).

When defoliating rank cotton, two applications are sometimes required for adequate defoliation, do not make more than two applications, do not exceed a total of 9.6 fluid ounces (0.3 lb. active ingredient/acre).

#### **ARIZONA ONLY: BOTTOM DEFOLIATION**

THIDIAZURON 4 SC can be used to help reduce boll rot and hard lock caused by moisture retained in the canopy, by aiding improved air circulation within the cotton canopy. Base product application timing

8/10  
upon the latest date when application equipment will not cause significant crop damage when driving applicator through the cotton crop.

Apply 0.05 lb. active ingredient/acre of THIDIAZURON 4 SC ( 1.6 fluid ounces/Ac).

It is recommended to apply THIDIAZURON 4 SC only to the bottom 1/3 of the plant.

#### **ARIZONA AND CALIFORNIA ONLY: PRECONDITIONING**

THIDIAZURON 4 SC can be used to enhance the activity of a defoliant application by acting as a preconditioner. Recommended timing is 7 – 14 days prior to the use of other defoliant compounds. Follow the second product label recommendations prior to use.

Apply THIDIAZURON 4 SC at 0.05 – 0.1 lb. active ingredient/acre (1.6 – 3.2 fluid ounces/acre)

#### **TANK MIXES OF THIDIAZURON 4 SC AND ETHEPHON CONTAINING COMPOUNDS**

Improved defoliation and improved opening of mature bolls can be achieved by tank mixing THIDIAZURON 4 SC and Ethephon® 6 or its equivalents. For best results to be obtained apply to mature cotton plants (See Time of Application section of this label). Wait until unopened bolls have reached adequate maturity not to affect the desired cotton yield. **Certified cottonseed producers** should consult seed companies as to proper boll and seed maturity requirements for their varieties. Low nighttime temperatures (if expected to be below 60°F) can reduce defoliation and decrease regrowth suppression.

Use THIDIAZURON 4 SC at 0.05 – 0.2 lb. active ingredient/acre (1.6 – 6.4 fluid ounces/acre) plus Ethephon® 6 at 1 – 2 lbs. active ingredient/acre (32 – 64 ounces/ acre)

Under conditions of excessive regrowth potential or expected low temperatures use the higher rates to THIDIAZURON 4 SC.

#### **TANK MIX OF THIDIAZURON 4 SC PLUS ETHEPHON FOR DEFOLIATION ENHANCEMENT:**

Lower rates of Ethephon® 6 or its equivalents (not high enough to promote boll opening) can be tank mixed with THIDIAZURON 4 SC to improve defoliation. Ethephon® 6 can still be used in subsequent applications to promote boll opening following tank mix enhancement applications of THIDIAZURON 4 SC and Ethephon® 6. Follow Ethephon® 6 label instructions and do not exceed the maximum usage rate of 2.0 lb. a.i./acre for combined applications.

Use THIDIAZURON 4 SC at 0.05 – 0.2 lb. active ingredient/acre (1.6 – 6.4 fluid ounces/acre) plus Ethephon® 6 at 0.25 lbs. active ingredient/acre (1/3 pint per acre). If excessive regrowth is anticipated or low temperatures are expected, use the higher rates of THIDIAZURON 4 SC.

#### **TANK MIX OF THIDIAZURON 4 SC WITH TRIBUFOS PRODUCTS (DEF® / FOLEX®)**

Under less than ideal conditions to improve defoliation and regrowth suppression, tank mixes of THIDIAZURON 4 SC and DEF® 6 / FOLEX® 6 EC is recommended. Nighttime temperatures on day of application of less than 60°F and for three consecutive days following application are considered to be less than ideal.

Make tank mix applications to mature cotton with at least 60% open bolls to achieve best activity.

#### **RATE OF APPLICATION for THIDIAZURON 4 SC – TRIBUFOS TANK MIXES**

THIDIAZURON 4 SC at 1.6 to 6.4 fluid ounces per acre + DEF® 6 at 0.5 – 2.0 pints per acre.

THIDIAZURON 4 SC at 1.6 to 6.4 fluid ounces per acre + FOLEX® 6 EC at 0.5 – 2.0 pints per acre.

Always use higher rates of THIDIAZURON 4 SC when excessive regrowth is expected.



9/10

Organophosphate defoliants and maximum rates of THIDIAZURON 4 SC when tank mixed during very high air temperatures can cause desiccation.

With ideal nighttime temperatures (65°F) use lower rates of DEF® 6/ FOLEX® 6 EC and use higher rates when less than ideal conditions are anticipated.

Tank mix of THIDIAZURON 4 SC and DEF® 6 / FOLEX® 6 EC instructions:

Follow MIXING INSTRUCTIONS and after THIDIAZURON 4 SC is completely dispersed THEN add the required amount of DEF® 6 / FOLEX® 6 EC to spray tank.

Do not exceed a total of 0.3 lb. active ingredient (9.6 fluid ounces) of THIDIAZURON 4 SC per acre if a second application of the labeled tank mix is required.

Refer to DEF®6 and FOLEX® 6 EC labels for use directions and cautions concerning those products and tank mixing compatibility with THIDIAZURON 4 SC.

**DO NOT USE TANK MIX OF THIDIAZURON 4 SC WITH DEF® 6 OR FOLEX® 6 EC IN STARR, HIDALGO, WILLACY, AND CAMERON COUNTIES OF TEXAS.**

### IMPORTANT CLEANOUT INSTRUCTIONS

When tank mixing organophosphate defoliants with THIDIAZURON 4 SC, a residue may form in application equipment. This residue can best be flushed out of the spraying system by using a commercial tank cleaner when done while residue is still fresh and moist. **DO NOT ALLOW EQUIPMENT TO DRY BEFORE CLEANOUT.** Consult your State Extension Cotton Specialist for recommended tank cleaners and cleaning procedures.

Tank cleaner and water should be used immediately after application. The entire system including nozzles, booms, application tanks, sumps, pumps, and transfer lines should be flushed. Allowing the spray solution to dry in the application equipment can result in residues that are more difficult to remove. **Dried residues are extremely difficult to remove and require commercial tank cleaner to remain in equipment filled to capacity, for 7 days and then thoroughly flushed and rinsed.**

Spray application equipment that has been inadequately cleaned will contain residue of THIDIAZURON 4 SC. This residue may be released during subsequent applications that could cause damage to subsequent crops.

**MFC assumes no liability due to equipment that has not been properly cleaned.**

### CONDITIONS OF SALE AND WARRANTY

The Directions For Use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of MICRO FLO COMPANY LLC ("Micro Flo") or the Seller. All such risks shall be assumed by the Buyer. Micro Flo warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for Use, subject to the inherent risks, referred to above. MICRO FLO MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. IN NO CASE SHALL MICRO FLO OR THE SELLER BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. Micro Flo and the Seller

10/10  
offer this product, and the Buyer and User accept it, subject to the foregoing Conditions of Sale and Warranty which may be varied only by agreement in writing signed by a duly authorized representative of Micro Flo.

Def ® is a registered trademark of Bayer Crop Science

Ethephon 6 ® is a registered trademark of Micro Flo Company

Folex ® is a registered trademark of Amvac Chemical