

SEP 19 1996

Lee Tharrington  
Micro-Flo Co.  
P.O. Box 5948  
Lakeland, FL 33807

Dear Mr. Tharrington:

Subject: Add Five Low Rate Applications  
Mepichlor Chloride 4.2% Liquid  
EPA Registration No. 51036-188  
Mepichlor Pill  
EPA Registration No. 51036-191  
Your Submissions Dated August 14, 1996

The amendment referred to above, submitted in connection with registration under section 3(c)(7)(A) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), is acceptable provided that you:

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

2. Submit one (1) copy of your final printed labeling before you release the product for shipment. 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 bearing the amended labeling constitutes acceptance of these conditions.

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

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The new brand name "Mepichlor 4.2% Liquid" is acceptable and has been included in the files for this product

Sincerely yours,



Philip V. Errico  
Acting Product Manager (22)  
Fungicide-Herbicide Branch  
Registration Division (7505C)

Enclosure

MEPICHLOR 4.2% LIQUID

ACTIVE INGREDIENT:

Mepiquat Chloride: N,N-dimethylpiperidinium Chloride ..... 4.2%  
 INERT INGREDIENTS: ..... 95.8%  
 TOTAL ..... 100.0%

Contains 0.35 pounds active ingredient per gallon.

KEEP OUT OF REACH OF CHILDREN

CAUTION

STATEMENT OF PRACTICAL TREATMENT

IF IN EYES: In case of contact, immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.

IF ON SKIN: Wash with soap and water. Call a physician if irritation develops.

See Additional Precautionary Statements Inside Booklet

EPA Reg. No. 51036-188

EPA Est. No. 51036-GA-1

Manufactured by:  
 MICRO FLO COMPANY  
 P.O. Box 5948  
 Lakeland, Florida 33807-5948

**ACCEPTED**  
 with **COMMENTS**  
 In EPA Letter Dated  
 SEP 19 1996

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

51036-188

96 AUG 20 AM 50

RECD EPA/OPP/DPD1

PRECAUTIONARY STATEMENTS  
Hazards to Humans and Domestic Animals

CAUTION

Avoid contact with eyes. Harmful if swallowed. Avoid contact with skin and clothing.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

1. Long-sleeved shirt and long pants
2. Waterproof gloves
3. Shoes plus socks

Follow manufacturer's instructions for cleaning and 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:

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

ENVIRONMENTAL HAZARDS

Do not apply directly to water, to areas where surface water is present or to intertidal area below the high water mark. Do not contaminate water when disposing of rinsate or equipment washwater. Do not contaminate water by cleaning of equipment or disposal of wastes.

CHEMIGATION PROHIBITION

Do not apply this product through any type of irrigation system.

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 and restricted-entry intervals. 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:

1. Coveralls
2. Waterproof gloves
3. Shoes plus socks

### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. **STORAGE:** Store in locked area in original container only, with lid tightly closed. Store separately from other pesticides and fertilizers, food and feed to prevent contamination. Use care to avoid puncturing container during storage or transit. In case of a spill or leaking container, call CHEMTREC at 1-800-424-9360.

**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 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:** Triple rinse container (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

### IN CASE OF EMERGENCY

In case of large-scale spillage regarding this product, call CHEMTREC at 1-800-424-9300.

In case of medical emergency regarding this product, call your local doctor for immediate treatment, or your local poison control center (hospital).

#### GENERAL INFORMATION

Mepichlor 4.2 is a Micro Flo product which is equivalent to PIX Plant Regulator produced by BASF Corporation. Mepichlor 4.2 is a foliar applied plant regulator. It allows the grower to manage the cotton plant for short-season production leading to reduced risk of yield and quality loss due to delayed and prolonged harvest. Benefits derived from the use of Mepichlor 4.2 include increased early boll retention and/or larger bolls, reduced plant height which provides a more open canopy, less boll rot, improved defoliation, less trash and lower ginning costs, better harvest efficiency and a darker leaf color. These benefits can provide for earlier maturity and often result in improved yields.

#### Early Application of Mepichlor 4.2

Growers may use low-rate multiple applications, or higher, less frequent dosages which single or multiple applications. Application rates per acre are dependent on the number of applications to be made and growing conditions. Multiple applications of low rates provide maximum flexibility under a wide range of growing conditions. Mepichlor 4.2 should not be applied to plants under stress. If stress is alleviated, plants should be evaluated for vegetative growth before additional applications are made. Mepichlor 4.2 may be tank mixed with insecticides/miticides when application timing coincide. (See RESTRICTIONS AND LIMITATIONS)

Fields should be carefully scouted. Mepichlor 4.2 should not be applied if plants are under any form of stress. In the absence of stress, a maximum of five ~~four~~ low rate applications can be made each season, generally using 2-4 fl.oz./acre per application. The first application can be applied at the matchhead square stage. The rate and timing of subsequent applications depend on growing conditions and desired benefits. Under good growing conditions, additional treatments of 2-4 fl.oz./acre can be made at 7-14 day intervals. Higher rates of Mepichlor 4.2 (1/4 - 3/4  $\pm$  1/2 pt./acre) should be used if vegetative growth becomes excessive or a greater degree of height control is desired. Do not use more than a total of 48-24 fl. oz. of Mepichlor 4.2 per acre in a growing season. If significant loss of squares and/or young bolls has occurred earlier due to insect pressure or other stresses, but now these stresses have been alleviated, the need for Mepichlor 4.2 is increased - excess vegetative growth is likely because of poor fruit load.

#### Late Season Application of Mepichlor 4.2

Late application of Mepichlor 4.2 (approximately during the fourth to sixth week of blooming) can provide certain benefits to cotton. However, it should not and does not substitute for early season use, the time of the greatest benefit from the use of Mepichlor 4.2. Late season application can lead to one or more of the

following: reduction in late season vegetative growth or regrowth after cutout or defoliation, more complete and manageable cutout, better defoliation, earlier maturity and reduction in trash and lower ginning costs. Some of these effects may favorably influence the yield potential and fiber quality. A late season application of Mepichlor 4.2 should be applied only if fields are not drought or nutrient stressed; that is, those fields likely to experience additional vegetative growth or regrowth. However, fields that are very rank and extremely vigorous due to a combination of poor boll load and excellent growing conditions may not respond as much as desired to late season applications at the suggested rates.

#### Timing for Late Season Applications

A. On fields where cotton cuts out and then starts regrowth: apply when regrowth begins, as evidenced by new leaves in the terminal and stem elongation. This would often, but not always, be in the period of 5-6 weeks after the first bloom.

B. On fields where cotton never completely cuts out, apply Mepichlor 4.2 when there are 4-6 nodes above the white flower (NAWF). Measure NAWF by counting the number of mainstem nodes from the first position white bloom (the one closest to the mainstem) to the terminal. Count the node with the first position white bloom as zero and the last node in the terminal, which is counted, should have a leaf at least the size of a quarter. Generally, the NAWF first reaches 4-6 during the fourth to sixth week of bloom. During this time period, the NAWF should be decreasing about one node every 5-6 days - if its rate of decrease is less, this means that the plant is not cutting out soon enough (the crop is too vigorous). If the fifth week of bloom arrives and NAWF is still above 5-6, apply Mepichlor 4.2.

#### Use Rate for Late Season Application

Mepichlor 4.2 should be applied at a rate between 1/2 pint to 1 1/2 pints per acre. Use the lower rate range on cotton with only moderate additional growth potential, and the higher rate range on fields likely to continue vigorous growth. Total seasonal use per season (early plus late application) must not exceed 3 pints per acre.

#### SPRAY VOLUMES

Thorough coverage is required

#### IN WATER:

*Areas other than California:*

Ground Application - Use a minimum of 2 to 4 gallons of water per acre.

Aerial Application - Use a minimum of 2 gallons/acre.

*California Only:*

Ground Application - Use a minimum of 5 to 10 gallons/acre.

Aerial Application - Use a minimum of 5 gallons/acre.

## IN OIL:

Use a minimum total oil volume of 2 pints/acre for ultra low volume (ULV) aerial application. Application in oil is permitted only in AL, AR, FL, GA, LA, MO, MS, NC, OK, SC, TN and TX. Use a nonphytotoxic oil concentrate which contains either a petroleum or vegetable oil base, contains only EPA-exempt ingredients, provides good mixing quality in the jar test (see "Compatibility" section), and has been used successfully in your locality. The oil diluent should contain emulsifiers which provide good mixing quality. If the oil does not contain an emulsifier, one must be added during mixing at a volume equal to 3% of the final volume of the mixing tank. Do not apply Mepichlor 4.2 as ULV without using emulsifiers. If using a vegetable oil based product, only highly refined concentrates should be used.

Mix under constant agitation. Pour one-half of the required volume of oil into the spray tank, followed by the emulsifier (if the oil does not already contain one) at approximately 3% of the final spray tank volume, and then pour in the Mepichlor 4.2 while the remainder of the oil is added. Constant, moderate agitation is required during and after mixing and during application.

## RAIN WASH-OFF PRECAUTION

The use of a high quality, EPA exempt surfactant will enhance the uptake of Mepichlor 4.2 into the plant. Therefore, the use of a surfactant allows applications made as little as 4 hours prior to rainfall to be effective. Without a surfactant, the product should be used at least 8 hours prior to expected rainfall.

## COMPATIBILITY

Mepichlor 4.2 is water based, and is compatible with most insecticides and miticides. If compatibility is in doubt, perform a jar test to check for compatibility. Mepichlor 4.2 can be used with foliar fertilizers if your prior experience shows the combination is compatible and will not injure cotton under your conditions. Caution should be used when applying with foliar fertilizers under conditions of extreme heat.

## RESTRICTIONS AND LIMITATIONS

- \* Insect or mite damage to Mepichlor 4.2 treated crops can lead to yield decreases or other undesirable effects.
- \* Do not apply Mepichlor 4.2 to cotton that is under stress. If using low rate multiple applications, discontinue use until your crop has overcome any stress.
- ~~\* Do not use Mepichlor 4.2 on the short staple variety Delta & Pineland 70.~~



- \* Do not apply more than 48 24 fl. oz. of Mepichlor 4.2 per acre per season. The sum of all products and formulations containing mepiquat chloride must not exceed 0.132 pounds (60 grams) of mepiquat chloride per acre per season.
- \* Do not apply Mepichlor 4.2 within 30 days of harvest.
- \* Do not graze or feed cotton forage to livestock ~~within 30 days of application.~~
- ~~\* Do not graze or feed cotton forage to livestock at all if applied in oil as a ULV application by air.~~
- \* Mepichlor 4.2 contains a dye and effectiveness is not related to the color of the spray solution.
- \* Do not tank mix with other products other than those mentioned under "COMPATIBILITY".

TIME AND RATE OF APPLICATION  
SHORT-STAPLE AND LONG-STAPLE (PIMA) COTTON

Directions for use should be observed as specified below:

I. HIGH RATE SINGLE OR MULTIPLE DUAL APPLICATIONS:

Use these instructions when you are not able to start growth regulation treatments early, or when you want to make the fewest number of applications.

<u>AREA</u>	<u>TIME OF APPLICATION</u>	<u>RATE PER ACRE</u>
AL, AR, AZ, CA, FL, GA, LA, MO, MS, NM, NC, SC, TN, VA	First Application:	8 to 16 fl.oz.
	Apply when cotton is actively growing and is between 20" and 30" tall, but not more than 7 days beyond early bloom (5-6 blooms per 25 row feet). Also apply if cotton is 24" tall and has no blooms.	
	Use the 8 oz. rate on the cotton where excessive vegetative growth is not expected. Use 16 oz. where excessive growth has historically occurred. See RESTRICTIONS AND LIMITATIONS	
	Second Application:	8 to 16 fl.oz.
	Make another application in 2 to 3 <del>3 to 4</del> weeks if additional growth control is desired.	

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Third Application for Control of Excessive Vegetative Growth: 8 to 16 fl. oz.  
 If the cotton field has a history of vigorous growth or if conditions continue to favor vigorous growth, apply a third application 1 to 2 weeks after the second application.

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Late Season Application: 8 to 24 fl. oz.  
 See section titled "Late Season Application of Mepichlor 4.2".

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OK, TX, Areas without a history of excessive vegetative growth:

(except Rio grande Valley)  
 First Application: 8 fl.oz.  
 Apply when cotton is in the early bloom stage (5-6 blooms per 25 row feet) and actively growing. Also apply if no blooms are present and the cotton is 20" 24" tall and actively growing.  
 See RESTRICTIONS AND LIMITATIONS.

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Second Application: 8 fl.oz.

Make a second application in 2 to 3 ~~3 to 4~~ weeks if additional growth control is desired.

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Third Application: 8 fl.oz.  
 If conditions after the second application of Mepichlor 4.2 continue to favor vigorous growth, apply a third application 1 to 2 weeks after the second application.

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Late Season Application: 8 to 24 fl.oz.  
 See section titled "Late Season Application of Mepichlor 4.2".

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OK, TX Areas with a history of excessive vegetative growth:

First Application: 16 fl.oz.

For best results, apply when plants are in early bloom stage (5-6 blooms per 25 row feet) and an average of 24" tall. Treatments can also be made when cotton height averages a minimum of 20" and a maximum of 30" ~~28"~~, provided cotton is not more than 7 days beyond early bloom. If cotton is 24" tall and has no blooms, apply Mepichlor 4.2.

## See RESTRICTIONS AND LIMITATIONS

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Second Application: 8 to 16 fl.oz.

For fields with a history of excessive growth, or if conditions after the first application favor excessive growth, make a second application in 2 to 3 ~~3 to 4~~ weeks.

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Third Application: 8 to 16 fl.oz.

If conditions after the second application of Mepichlor 4.2 continue to favor vigorous growth, apply a third application 1 to 2 weeks after the second application.

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Late Season Application: 8 to 24 fl.oz.  
See section titled "Late Season Application" of Mepichlor 4.2".

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## II. LOW-RATE MULTIPLE APPLICATIONS:

Use these instructions when you want to maintain maximum flexibility in plant regulation treatments.

AREA	TIME OF APPLICATION	EXCESSIVE GROWTH NOT EXPECTED OR LOWER RATES HAVE WORKED IN THE PAST.	EXCESSIVE GROWTH EXPECTED OR HIGHER RATES HAVE BEEN NECESSARY IN THE PAST.
		IN THE PAST.	THE PAST.
AL, AR, AZ, CA, FL, GA, LA, MO, MS, NC, NM, OK, SC, TN, TX, VA,	First Application:		
	Apply at the matchhead square <sup>1</sup> stage of growth.	2 fl.oz.	4 fl.oz.
	Second Application:		
	7-14 days later, or when regrowth occurs.	2-4 fl.oz.*	4-8 fl.oz.*
	Third Application:		
	7-14 days later, or when regrowth occurs.	2-4 fl.oz.*	4-8 fl.oz.*
	Fourth Application:		
	7-14 days later, or when regrowth occurs.	2-8 4 fl.oz.*	4-12 8 fl.oz.*

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**Fifth Application:**  
 (If needed): 7-14 days 4-8 fl.oz.\* 4-12 fl.oz.\*  
 later, or when regrowth  
 occurs.

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**Late Season Application:**  
 See section titled 8-16 fl.oz.\* 12-24 fl.oz.\*  
 "Late Season Application  
 of Mepichlor 4.2".

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\*Use the higher rate if previous application was not made or if growing conditions favor excessive growth.

<sup>1</sup>Matchhead square is when the first square of a typical cotton plant is about the size of a match head (about 1/8" in diameter). Make the first application when 50% of the plants have one or more matchhead squares.

#### CONDITIONS OF SALE AND WARRANTY

The DIRECTIONS FOR USE of this product 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 ("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 set forth in the DIRECTIONS FOR USE when it is used in accordance with such directions, subject to the inherent risks mentioned above. MICRO FLO NEITHER MAKES NOR INTENDS, NOR DOES IT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, AND IT EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

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. 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. IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. MICRO FLO and the seller offer this product, and the Buyer and User accept it, subject to the foregoing CONDITIONS OF SALE AND WARRANTY.