72167-4

4/27/2004

ACCEPTED

APR 27 2004

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 72167-4

MEPIQUAT CHLORIDE

Nations Ag II

MEPIQUAT CHLORIDE

4.2% LIQUID PLANT REGULATOR

Manufactured for Nations Ag II, LLC
2901-12 Rivendell • Knoxville, TN 37922

041300 rev. 2

Net contents: 1 gallon (3.79 liters)

For use on cotton

Active Ingredients:

Mepiquat Chloride*:	
N,N-dimethylpiperidinium chloride	4.2%
Other Ingredients:	95.8%
Total	100.0%

*Contains 0.35 pounds of active ingredient per gallon.

EPA Reg. No. 72167-4 **EPA Est. No. 37429-GA-2**

KEEP OUT OF REACH OF CHILDREN

CAUTION

See inside booklet for complete Precautionary Statements, Directions for Use, and Conditions of Sale and Warranty.

FIRST AID

IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

IF ON SKIN: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

IF IN EYES: 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 eyes. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center ordoctor, or going for treatment. For **MEDICAL Emergencies involving this product, call 1-800-308-5391.**

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PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION. Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin, or clothing.

PERSONAL PROTECTIVE EQUIPMENT: Some 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.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant 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 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.

ENVIRONMENTAL HAZARDS
Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment and disposing of equipment wash waters.

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 (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 and long sleeved shirt and long pants
- Chemical-resistant gloves (such as Nitrile, Butyl, Neoprene, and/or Barrier Laminate)
- Shoes plus socks

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STORAGE AND DISPOSAL
Do not contaminate water, food, or feed by storage and disposal.

PESTICIDE STORAGE: Store in a locked area in original container only, with lid tightly closed. Do not store below 32˚F or above 100˚F. Store in a dry place away from heat or open flame. 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 800-424-9300.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Wastes resulting from this product may be disposed of on-site or at an approved waste disposal facility. 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 800-424-9300.
In case of medical emergency regarding this product call your local doctor for immediate treatment, your local poison control center or 800-308-5391.

GENERAL INFORMATION
Mepiquat Chloride 4.2% Liquid is a foliar applied plant regulator. Benefits derived from the use of this product include increased boll retention, reduced plant height which provides a more open canopy, less boll rot, improved defoliation, less trash, and darker leaf color. These benefits can provide for earlier maturity and often result in improved yields.

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EARLY APPLICATION:
Growers may use 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. This product should not be applied to plants under stress. If stress is alleviated, plants should be evaluated for vegetative growth before additional applications are made. This product may be tank mixed with insecticides/miticides when application timings coincide. (SEE RESTRICTIONS AND LIMITATIONS.)

Fields should be carefully scouted. This product should not be applied if plants are under any form of stress. In the absence of stress, a maximum of five low rate applications can be made each season. 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 (2-4 fl. oz. per acre) can be made at 7-14 day intervals. The higher rates (4-12 fl. oz. per acre) should be used if growth is excessive. Do not use more than a total of 48 fl. oz. of Mepiquat Chloride 4.2% Liquid per acre in a growing season.

LATE SEASON APPLICATION:
Application during the 4th to 6th week of blooming can reduce late season growth or re-growth after cutout or defoliation and can allow more complete and manageable cutout, better defoliation, earlier maturity and reduction in trash. Do not make a late season application if cotton is stressed. Rank cotton may not respond well to late season application.

Apply after cutout when re-growth begins, usually 5 to 6 weeks after the first bloom.

TIMING FOR LATE SEASON APPLICATION:
1. For control of re-growth after cutout, apply Mepiquat Chloride 4.2% Liquid when re-growth begins, usually 5-6 weeks after first bloom.
2. If cotton never completely cuts out and growth is too vigorous, apply Mepiquat Chloride 4.2% Liquid when there are 4-6 nodes above the white flower.

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USE RATE FOR LATE SEASON APPLICATION:
Apply 8-24 fl. oz. per acre. Use low rates on moderately growing cotton and high rates on vigorously growing cotton. Do not exceed 48 fl. oz. per acre of Mepiquat Chloride 4.2% Liquid during the total growing season.

SPRAY VOLUMES
Thorough Coverage Is Required.

IN WATER:
Areas other than California:
Ground Application – Use a minimum of 2 gallons/acre.

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

California Only:
Ground Application – Use a minimum of 5 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, KS, 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 and has been used successfully in your locality. The oil diluent should contain emulsifiers which provide good mixing quality. 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, and then pour in the Mepiquat Chloride 4.2% Liquid while the remainder of the oil is added. Constant agitation is required during and after mixing and during application.

SPRAY DRIFT PRECAUTION:
Avoiding spray drift at the application site is the responsibility of the applicator.

The interaction of many equipment-and-weather-related factors determines the potential for spray drift. The applicator and grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial application to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations:

- The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
- Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed. The applicator should be familiar with and take into account the information covered in the AERIAL DRIFT REDUCTION ADVISORY INFORMATION.

INFORMATION ON DROPLET SIZE: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see **Wind, Temperature and Humidity, and Temperature Inversions**).

CONTROLLING DROPLET SIZE:

Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

Pressure - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

Number of Nozzles - Use the minimum number of nozzles that provide

uniform coverage.

Nozzle Orientation - Orienting nozzles so that spray is released parallel to the air stream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.

Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

BOOM LENGTH: For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

APPLICATION HEIGHT: Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

SWATH ADJUSTMENT: When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller droplets, etc.).

WIND: Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **NOTE:** Local terrain can influence wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY: When making applications in low relative

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humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

TEMPERATURE INVERSIONS: Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small, suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

SENSITIVE AREAS: The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas). Do not apply Mepiquat Chloride 4.2% Liquid plant regulator by air if sensitive species are within 200 feet downwind.

RAIN WASH-OFF PRECAUTION:
The use of a high quality, EPA exempt surfactant will enhance the uptake of Mepiquat Chloride 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:
This product is water based, and is compatible with most insecticides and miticides. If compatibility is in doubt, perform a jar test to check for compatibility. This product can be used with foliar fertilizers if your prior

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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 treated crops can lead to yield decreases or other undesirable effects.

• Do not apply this product to cotton that is under stress. If using low rate multiple applications, discontinue use until your crop has overcome any stress.

• Do not apply more than 48 fl. oz. of this product per acre per season.

• The sum of all products and formulations containing mepiquat chloride must not exceed 0.132 lbs. of mepiquat chloride per acre per season.

• Do not apply within 30 days of harvest.

• Do not plant another crop within 75 days after last treatment.

• Do not graze or feed cotton forage to livestock.

• This product 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.**

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

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TIME AND RATE OF APPLICATION

SHORT-STAPLE AND LONG-STAPLE (PIMA) COTTON

Directions for use should be observed as specified below:

HIGH RATE SINGLE OR MULTIPLE APPLICATIONS:

Geographic Area	Time of Application	Rate Per Acre
AL, AR, AZ, CA, FL, GA, LA, MO, MS, NM, NC, SC, TN, VA	**First Application:** 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 fl. oz. rate on the cotton where excessive vegetation growth is not expected. Use 16 fl. oz. where excessive growth has historically occurred. **SEE RESTRICTIONS AND LIMITATIONS**	**8 to 16 fl oz.**

Geographic Area	Time of Application	Rate Per Acre
AL, AR, AZ, CA, FL, GA, LA, MO, MS, NM, NC, SC, TN, VA	**Second Application For Control of Excessive Vegetative Growth:** Make another application in 2 to 3 weeks if additional growth control is desired.	**8 to 16 fl oz.**
	Third Application For Control of Excessive Vegetative Growth: Make another application 1 to 2 weeks after 2nd application if vigorous growth continues.	**8 to 16 fl oz.**
	Late Season Application: See section titled "Late Season Application."	**8 to 24 fl oz.**

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Geographic Area	Time of Application	Rate Per Acre
KS, OK, TX (except Rio Grande Valley)	**Areas without a history of excessive vegetative growth:** **First Application:** Apply when cotton is in early bloom stage (5-8 blooms per 25 row feet) and actively growing. Also, apply if no blooms are present and the cotton is 24" tall and actively growing. **SEE RESTRICTIONS AND LIMITATIONS**	**8 fl oz.**
	Second Application: Make a second application in 2-3 weeks if conditions favor vigorous growth after the first application.	**8 fl oz.**
	Third Application: Make a third application 1 to 2 weeks after the second application if vigorous growth continues.	**8 fl oz.**
	Late Season Application: See section titled "Late Season Application."	**8 to 24 fl oz.**

Geographic Area	Time of Application	Rate Per Acre
KS, OK, TX	**Areas with a history of excessive vegetative growth:** **First Application:** Apply when plants are actively growing and 20 to 30" tall but not more than 7 days beyond early bloom stage (5-6 blooms per 25 row feet). Also apply if cotton is 24" tall and has no blooms. **SEE RESTRICTIONS AND LIMITATIONS**	**16 fl oz.**
	Second Application For Control of Excessive Vegetative Growth: Make a second application in 2-3 weeks if conditions favor vigorous growth after the first application.	**8 to 16 fl oz.**
	Third Application For Control of Excessive Vegetative Growth: Make a third application in 1-2 weeks if conditions favor vigorous growth after the second application.	**8 to 16 fl oz.**
	Late Season Application: See section titled "Late Season Application."	**8 to 24 fl oz.**

LOW RATE MULTIPLE APPLICATIONS:
Use these instructions when you want to maintain maximum flexibility in plant regulation treatments.

Geographic 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
AL, AR, AZ, CA, FL, GA, KS, LA, MO, MS, NC, NM, OK, SC, TN, TX, VA	**First Application:** Apply at the matchhead square stage of growth.	2 fl oz.	4 fl oz.
	Second Application: 7-14 days later, or when re-growth occurs.	2 fl oz.	4 fl oz.
	Third Application: 7-14 days later, or when re-growth occurs.	2 to 4 fl oz.	4 to 8 fl oz.

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Geographic 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
AL, AR, AZ, CA, FL, GA, KS, LA, MO, MS, NC, NM, OK, SC, TN, TX, VA	**Fourth Application:** 7-14 days later, or when re-growth occurs.	**2 to 8 fl oz.**	**4 to 12 fl oz.**
	Fifth Application: 7-14 days later, or when re-growth occurs.	**4 to 8 fl oz.**	**4 to 12 fl oz.**
	Late Season: See section titled "Late Season Application."	**8 to 16 fl oz.**	**12 to 24 fl oz.**

*Use the higher rate if previous application was not made or if growing conditions favor excessive growth.
† Matchhead square is when the first square of a typical cotton plant is about the size of a matchhead (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 Nations Ag II, LLC or the seller. All such risks shall be assumed by the buyer.

Nations Ag II, LLC 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.

NATIONS AG II, LLC NEITHER MAKES NOR INTENDS, NOT 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 EXTENDS 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. NATIONS AG II, LLC and the seller offer this product, and the Buyer and User accept it, subject to the foregoing CONDITIONS OF SALE AND WARRANTY.

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