

264-918

5/11/2011

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

Bayer-CropScience
Laura Phelps
2 T.W. Alexander Drive
RTP, NC 27709

Subject: ETHREL brand Ethephon Plant Growth Regulator
Registration No.: 264-257
Date Submitted: 3/14/11
Decision No.: 447178

MAY 1 1 2011

PREP brand Ethephon Plant Regulator for Cotton
Registration No.: 264-380
Date Submitted: 3/14/11
Decision No.: 447179

PREP brand Ethephon for Cotton and Tobacco
Registration No.: 264-418
Date Submitted: 3/14/11
Decision No.: 447180

CERONE brand Ethephon Plant Regulator
Registration No.: 264-377
Date Submitted: 3/14/11
Decision No.: 447181

Dear Ms. Phelps:

The Agency is in receipt of your Applications for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the actions requested fall within the scope of PRN 98-10.

The Agency acknowledges the removal of the patent number from the label.

The label submitted with the application has been stamped "Notification" and will be placed in our records. If you have questions concerning this letter, please contact Dominic Schuler at 703-347-0260 or via email at schuler.dominic@epa.gov.

Sincerely,

A handwritten signature in black ink that reads "Tony Kish".

Tony Kish
Product Manager 22
Fungicide Branch
Registration Division (7504P)



United States Environmental Protection Agency Washington, DC 20460

Registration
Amendment
[X] Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number: 264-418
2. EPA Product Manager: Mr. Tony Kish
3. Proposed Classification: None, Restricted
4. Company/Product Name: PREP brand-Ethephon for Cotton and Tobacco
5. Name and Address of Applicant: Bayer CropScience LP
6. Expedited Review: EPA Reg. No., Product Name

Section - II

Amendment - Explain below.
Resubmission in response to Agency letter dated
[X] Notification - Explain below.
Final printed labels in response to Agency letter dated
'Me Too' Application.
Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Bayer CropScience is submitting a notification for PREP brand Ethephon for Cotton and Tobacco to remove the patent number from the label.

Section - III

1. Material This Product Will Be Packaged In: Child-Resistant Packaging, Unit Packaging, Water Soluble Packaging, 2. Type of Container: Metal, Plastic, Glass, Paper, Other
3. Location of Net Contents Information: Label, Container
4. Size(s) Retail Container
5. Location of Label Directions: On Label, On Labeling accompanying product
6. Manner in Which Label is Affixed to Product: Lithograph, Paper glued, Stenciled, Other

Section - IV

1. Contact Point: Name: Laura Phelps, Title: Reg. Affairs Specialist, Telephone No.
Certification: I certify that the statements I have made on this form...
2. Signature: Laura Phelps
3. Title: Regulatory Affairs Specialist
4. Typed Name: Laura Phelps
5. Date: March 14, 2011
6. Date Application Received (Stamped)

Bayer CropScience



3/13

March 10, 2011

Document Processing Desk (NOTIF)
 Registration Division (7505P)
 Office of Pesticide Programs
 U.S. Environmental Protection Agency
 One Potomac Yard (South Building)
 2777 S. Crystal Drive
 Arlington, VA 22202

Mr. Tony Kish, RD Team 22

**Subject: PREP brand Ethephon for Cotton and Tobacco, No. 264-418;
 Removal of Patent Number**

Dear Mr. Kish:

Bayer CropScience
 P. O. Box 12014
 2. T. W. Alexander Drive
 Research Triangle Park, NC 27709

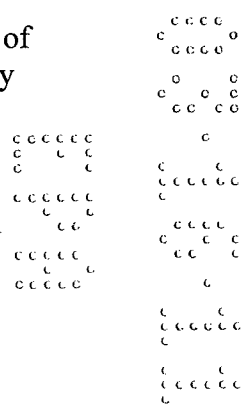
Bayer CropScience is submitting a notification for PREP brand Ethephon for Cotton and Tobacco to remove the patent number from the label.

This notification is consistent with the provisions of PR Notice 98-10. No other changes have been made to the labeling or the Confidential Statement of Formula for this product. I understand that it is a violation of 18 U.S.C. Section 1001 to willfully make any false statement to EPA. I further understand that if the amended label is not consistent with the requirements of 40 CFR §§156.10, 156.140, 156.144, 156.146 and 156.156, this product may be in violation of FIFRA and I may be subjected to enforcement action and penalties under Section 12 and 14 of FIFRA".

Enclosed are an EPA Form 8570-1 and one copy of the revised PREP brand Ethephon for Cotton and Tobacco label for review.

Please contact me if you should have further questions.

Sincerely,



MAY 11 2011

PREPTM brand Ethephon FOR COTTON AND TOBACCO

For Commercial Use Or Agricultural Use Only. Not For Residential Use

ACTIVE INGREDIENT: Ethephon (2-Chloroethyl) phosphonic acid* **55.4%**

INERT INGREDIENTS: **44.6%**

*This product contains 6 pounds ethephon per gallon.

EPA Reg. No. 264-418

EPA Est. No. 264-PA-01

KEEP OUT OF REACH OF CHILDREN

DANGER PELIGRO

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

For MEDICAL And TRANSPORTATION Emergencies ONLY Call 24 Hours A Day 1-800-334-7577

For PRODUCT USE Information Call 1-866-99BAYER (1-866-992-2937)

FIRST AID

IF IN EYES:	<ul style="list-style-type: none"> • 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. • Call a poison control center or doctor for treatment advice.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none"> • 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 SWALLOWED:	<ul style="list-style-type: none"> • Immediately call a poison control center or doctor for treatment advice. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Have person sip a glass of water if able to swallow. • Do not give anything by mouth to an unconscious person.
<p>For <u>MEDICAL</u> Emergencies Call 24 Hours A Day 1-800-334-7577.</p> <p>Have the product container or label with you when calling a poison control center or doctor or going for treatment.</p>	
<p>NOTE TO PHYSICIAN: Treat symptomatically. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. No specific antidote is available. Probable mucosal damage may contraindicate the use of gastric lavage</p>	

PRECAUTIONARY STATEMENTS

DANGER

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CORROSIVE. Causes irreversible eye damage and skin burns. Harmful if swallowed or absorbed through skin. Do not get in eyes, on skin or on clothing.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear coveralls over short-sleeved shirts and short pants, chemical resistant gloves made of any waterproof material (such as Nitrile, Butyl, Neoprene and/or Barrier Laminate), chemical-resistant footwear plus socks, protective eyewear, chemical-resistant headgear for overhead exposure and chemical-resistant apron when cleaning equipment or mixing and loading.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this products concentrate. Do not reuse them. 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.

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.
Users should remove clothing immediately if pesticide gets inside. Then wash body thoroughly and put on clean clothing.
Users should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing. Wash the outside of gloves before removing.

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 contaminate water used for irrigation or domestic purposes.

SPRAY DRIFT

Avoid spray drift. Do not apply when weather conditions may cause drift. Do not allow this product to drift on to non-target areas. Drift may result in illegal residues or injury to adjacent crops and vegetation, in the form of leaf yellowing and defoliation. To avoid spray drift, DO NOT apply aerially when wind speed is greater than 10 mph or during periods of temperature inversions. Use of larger droplet size will also reduce spray drift.

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR.

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

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

- 1. The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
- 2. 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 below:

AERIAL DRIFT REDUCTION ADVISORY

[This section is advisory in nature and does not supersede the mandatory label requirements].

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 the spray is released parallel to the airstream 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 target 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 downwind. Therefore, on the up and downwind edges of the field, the applicator should compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, 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. Every applicator should be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY

When making applications in low relative 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. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. 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).

USE PRECAUTIONS

Do not apply PREP™ brand Ethephon for Cotton and Tobacco through any type of irrigation system.

Avoid spray drift to nearby crops as this product will cause modifications in plant growth. Plant injury or reduced yields will result.

Mix only the amount of spray you expect to use each day. Do not allow mixed solution to stand overnight.

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 regulations. Read entire label before using this product.

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), notification to workers 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 48 hours. The REI is 72 hours in areas where average rainfall is less than 25 inches per year.

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 over long-sleeved shirt and long pants, chemical resistant gloves made of any waterproof material, such as nitrile, butyl, neoprene, or barrier laminate, chemical resistant footwear plus socks, and protective eyewear. For overhead exposure, chemical-resistant headgear is also required.

Notify workers of the application by warning them orally and posting warning signs at entrances to treated areas.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE

Store in a cool, dry place and away from food, feed and other pesticides. **IF SPILLED:** If container is broken or contents have spilled, follow all precautions indicated above and clean up immediately. Before cleaning up, put on full length trousers, long sleeved shirt, protective gloves, and goggles or face shield. Soak up spill with absorbent media such as sand, earth or other suitable material and dispose of waste at an approved waste disposal facility.

PESTICIDE DISPOSAL

Pesticide wastes are acutely hazardous. 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

Rigid, Non-refillable containers small enough to shake (i.e., with capacities equal to or less than 5 gallons)

Non-refillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. 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. Once container is rinsed, offer for recycling if available or puncture and dispose of in a sanitary landfill.

Rigid Non-refillable containers that are too large to shake (i.e., with capacities greater than 5 gallons or 50 lbs)

Non-refillable Containers

Non-refillable containers - Do not reuse or refill this container. Refer to Bottom Discharge IBC or Top Discharge IBC, Drums, Kegs information as follows.

Bottom Discharge IBC (e.g. – Schuetz Caged IBC or Snyder Square Stackable)

Pressure rinsing the container before final disposal is the responsibility of the person disposing of the container. To pressure rinse the container before final disposal, empty the remaining contents from the IBC into application equipment or mix tank. Raise the bottom of the IBC by 1.5 inches on the side which is opposite of the bottom discharge valve to promote more complete product removal. Completely remove the top lid of the IBC. Use water pressurized to at least 40 PSI to rinse all interior portions. Continuously pump or drain rinsate into application equipment or rinsate collection system while pressure rinsing. Continue pressure rinsing for 2 minutes or until rinsate becomes clear. Replace the lid and close bottom valve.

Top Discharge IBC, Drums, Kegs (e.g.– Snyder 120 Next Gen, Bonar B120, Drums, Kegs).

Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. To triple rinse the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container at least 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Rinse all interior surfaces. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this procedure two more times. Once container is rinsed, offer for recycling if available or puncture and dispose of in a sanitary landfill.

Refillable Containers

Refillable container – Refer to Bottom Discharge IBC or Top Discharge IBC, Drums, Kegs information as follows. Refill this container with pesticide only. Do not reuse this container for any other purpose. After emptying product from container, either return container to Bayer CropScience per instructions from Bayer CropScience Customer Service Center (1-800-527-4781) or rinse and either recycle or dispose of the container as follows:

Bottom Discharge IBC (e.g. – Schuetz Caged IBC or Snyder Square Stackable)

Pressure rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To pressure rinse the container before final disposal, empty the remaining contents from the IBC into application equipment or mix tank. Raise the bottom of the IBC by 1.5 inches on the side which is opposite of the bottom discharge valve to promote more complete product removal. Completely remove the top lid of the IBC. Use water pressurized to at least 40 PSI to rinse all interior portions. Continuously pump or drain rinsate into application equipment or rinsate collection system while pressure rinsing. Continue pressure rinsing for 2 minutes or until rinsate becomes clear. Replace the lid and close bottom valve.

Top Discharge IBC, Drums, Kegs (e.g.– Snyder 120 Next Gen, Bonar B120, Drums, Kegs).

Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To triple rinse the containers before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container at least 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Rinse all interior surfaces. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this procedure two more times. Once container is rinsed, offer for recycling if available or puncture and dispose of in a sanitary landfill.

Refillable Containers

End users are authorized to remove tamper evident cables as required to remove the product from the container unless the container is equipped with one way valves and refilling or returning is planned. If this is the case, end users are not authorized to remove tamper evident cables, one way valves or clean container. See Container Disposal instructions under Storage and Disposal.

GENERAL INFORMATION

COTTON

A foliar spray of PREP™ brand Ethephon for Cotton and Tobacco will accelerate opening of mature unopened cotton bolls and enhance defoliation which can result in earlier harvest with an increased recoverable yield. PREP™ brand Ethephon for Cotton and Tobacco treatment on cotton allows increased efficiency from a once-over harvest.

TOBACCO (FLUE-CURED): A foliar spray of PREP™ brand Ethephon for Cotton and Tobacco promotes early, uniform "yellowing" of mature tobacco. PREP™ brand Ethephon for Cotton and Tobacco reduces curing time, allowing more efficient use of curing barn space, and increased control over harvest schedules.

SPRAY PREPARATION

Add 1/2 to 3/4 of the required amount of water to the spray tank. Start agitation. Add the required amount of PREP™ brand Ethephon for Cotton and Tobacco, and the remaining amount of water. Prepare only as much spray solution as can be used on the day of mixing. Do not allow spray solution to stand overnight. Do not spill the concentrated product on spray equipment, or any airplane parts.

ANY SPILLS SHOULD BE RINSED IMMEDIATELY WITH PLENTY OF WATER.

Use of a nurse tank is highly recommended for avoiding possible spills of concentrated formulation on spray equipment or any airplane parts.

TANK MIXTURES WITH DEFOLIANTS AND INSECTICIDES

PREP™ brand Ethephon for Cotton and Tobacco is compatible with DEF®, FOLEX®, Dropp®, Dropp® Ultra™, Ginstar®, Harvade®, Methyl Parathion, Guthion®, and Malathion™. PREP™ brand Ethephon for Cotton and Tobacco may be applied in sequence or as a tank mixture (DO NOT TANK MIX WITH DESICCANTS IF COTTON IS TO BE SPINDLE HARVESTED). Follow all applicable use precautions and rate per acre recommendations on labels of products applied as tank mixtures or in sequence with PREP™ brand Ethephon for Cotton and Tobacco. In some cases slight reduction in boll opening response has been observed when tank mixes with defoliants were used.

Good agitation in the spray tank is essential and a tank mixture should not be allowed to stand without agitation for more than 5 to 10 minutes. Read and observe all appropriate label use directions and precautions for the defoliants and insecticides used.

NOTE: UNDER CERTAIN CONDITIONS, TANK MIXTURES OF PREP™ BRAND ETHEPHON FOR COTTON AND TOBACCO WITH DESICCANTS CONTAINING SODIUM CHLORATE COULD RESULT IN THE FORMATION OF HYPOCHLOROUS ACIDS WHICH ON HEATING WILL EMIT TOXIC CHLORIDE FUMES.

DO NOT MIX PREP™ BRAND ETHEPHON FOR COTTON AND TOBACCO WITH AMMONIUM THIOSULFATE. SUCH TANK MIXTURES MAY RESULT IN FORMATION OF TOXIC FUMES.

EQUIPMENT CLEANING

Because of the acidic nature of this product, prolonged exposure to spray deposit will damage acrylic plastics, certain paints, and metals.

Rinse thoroughly with a detergent and water all exposed acrylic plastic-type materials (e.g., aircraft windshields), and painted surfaces **within an hour** after exposure to spray deposits.

At the end of each day, rinse thoroughly with a detergent and water all the metal parts of the aircraft and the associated spray equipment exposed to the spray deposits.

COTTON

USE	EXPECTED CONDITIONS	PREP™ BRAND ETHEPHON FOR COTTON AND TOBACCO RATE		ONE GALLON PREP™ BRAND ETHEPHON FOR COTTON AND TOBACCO TREATS	MINIMUM SPRAY VOLUMES (Gals/A)*		APPLICATION TIMING
		Pints/A	LBS A.I.		Acres	Ground	
PREP™ brand ETHEPHON FOR COTTON AND TOBACCO Boll Opener**	Hot and dry 80°F or higher	1 1/3	1.0	6			Apply when the number of mature unopened bolls is sufficient to produce the desired crop. See below for test of boll maturity. Treatment uniformly opens bolls 7 to 14 days earlier.
	Dry and 75 to 80°F	2	1.5	4	10	2	
	Cool but above 65°F or Rank cotton	2 2/3	2.0	3			
PREP™ brand ETHEPHON FOR COTTON AND TOBACCO + FOLEX® Defoliant Tank Mix***	High soil moisture or High fertility level or Rank cotton	1/3	0.25	24	10	5	Apply 4 to 7 days prior to PREP™ brand Ethephon for Cotton and Tobacco boll opening application. To be used as a sequential treatment with, not in place of PREP™ brand Ethephon for Cotton and Tobacco boll opening treatment.
PREP™ brand ETHEPHON FOR COTTON AND TOBACCO + Dropp Defoliant Tank Mix***	High soil moisture or High fertility level or Rank cotton	1/3	0.25	24	10	3	Apply 4 to 7 days prior to PREP™ brand Ethephon for Cotton and Tobacco boll opening application. To be used as a sequential treatment with, not in place of PREP™ brand Ethephon for Cotton and Tobacco boll opening treatment.
Pre-Conditioner for Defoliation	Hot, dry, above 80°F	2/3	0.5	12			Apply 4 to 7 days prior to defoliant. Enhances top crop defoliation reducing deterioration of bottom crop and allows for earlier harvest.
	Cool, above 65°F or Rank cotton	1 1/3	1.0	6	10	2	

* For best performance, by ground or air application, choose equipment and spray volumes that will insure uniform coverage of foliage and bolls.

** **Pretreatment With Defoliant Prior to PREP™ brand Ethephon for Cotton and Tobacco Boll Opening Treatment:** If the cotton is overly rank or laying down in the middles and good spray coverage of the bolls with PREP™ brand Ethephon for Cotton and Tobacco is difficult, a pretreatment with defoliant will be useful to improve boll coverage with PREP™ brand Ethephon for Cotton and Tobacco. Use dosage rates of PREP™ brand Ethephon for Cotton and Tobacco recommended for boll opening. Read and observe all appropriate label use directions and precautions for the defoliant used.

*** Can use up to full label rate for each product.

**** In California and Arizona use a volume of no less than 5 gallons per acre for aerial applications.

Boll Maturity

A boll is mature when it is too hard to be dented when squeezed between thumb and fingers, too hard to be sliced with a sharp knife, and when the seed coat becomes light brown in color.

Use Limitations

- Do not exceed a maximum of 2.0 lb. ethephon active ingredient per acre per year through combined or repeated uses of any ethephon products.

- Boll Opening: Do not tank mix PREP™ brand Ethephon for Cotton and Tobacco with a desiccant if the cotton is to be spindle harvested.
- Pre-Condition for Defoliation: Do not tank mix PREP™ brand Ethephon for Cotton and Tobacco with desiccants unless plant desiccation is required. Do not use a defoliant before there is sufficient mature unopened bolls to produce the desired yield (see General Information section on how to test for boll maturity).
- DO NOT APPLY PREP™ BRAND ETHEPHON FOR COTTON AND TOBACCO IF RAIN IS EXPECTED WITHIN 6 HOURS. Rainfall within 6 hours of application may reduce product performance.
- Do not plant another crop within 30 days after treatment. Small grains planted earlier than 1 month or intercropped with the cotton crop to which PREP™ brand Ethephon for Cotton and Tobacco will be applied may only be used as cover crops and may not be harvested for food or feed. PREP™ brand Ethephon for Cotton and Tobacco may cause yellowing and growth inhibition of treated small grains.

WHEN TO HARVEST COTTON

Do not harvest cotton sooner than 7 days after a treatment with PREP™ brand Ethephon for Cotton and Tobacco.

Observe the treated crop and harvest when optimum boll opening has been reached. Too early harvest might reduce the full advantage of the treatment and too late a harvest may result in reduced quality and loss of lint which will drop from the plant.

**TOBACCO
(Flue-Cured Only)**

Crop Situation	PREP™ brand Ethephon for Cotton and Tobacco Pints/Acre	Minimum Spray Volumes Gallons/Acre	Specific Directions
Directed Spray Application	1 1/3	50	Use drop nozzles. Choose TG or OC spray tips designed to apply 50 - 60 gpa at 35-40 psi and at tractor speed of 2-3 mph. Use 2 nozzles per row; one on each side of the row dropped low enough to direct the spray to the leaves to be ripened and harvested. Thorough spray coverage is essential. With a directed spray, be sure to harvest all leaves with 20% or more yellowing.
Over-The-Top Application	1 1/3 - 2 2/3	40	Treat only when leaves remaining on the stalk are mature. To ensure remaining leaves are mature, test spray several tobacco plants as described under the section "Proper Time of Treatment." Use the lower rate in a normally mature crop when experience indicates that minimum ripening inducement is required. Use the higher rate when the crop is heavy and has a tendency to be more rank or when temperatures are lower than normal. Always test spray to determine if the tobacco is mature enough to respond to treatment with PREP™ brand Ethephon for Cotton and Tobacco. Apply over-the-top PREP™ brand Ethephon for Cotton and Tobacco spray as a fine mist using three nozzles (one nozzle tip over the center of the plant, and one on each side) so all leaves are covered thoroughly, similar to the application pattern of systemic sucker control agents. Use a spray pressure of 40 to 60 psi.

USE LIMITATIONS

- Do not apply PREP™ brand Ethephon for Cotton and Tobacco to immature leaves as this can result in unsatisfactory coloring, weight loss and reduced leaf quality.
- Do not allow the crop to over ripen in the field after using PREP™ brand Ethephon for Cotton and Tobacco, since this may cause some reduction in yield and quality.
- Do not treat before anticipated major storm which could prevent harvest and result in crop loss.
- DO NOT APPLY PREP™ BRAND ETHEPHON FOR COTTON AND TOBACCO IF RAIN IS EXPECTED WITHIN 6 HOURS. Rainfall within 6 hours of application may reduce product performance.
- Do not use PREP™ brand Ethephon for Cotton and Tobacco with additives other than recommended on this label.
- Do not plant another crop within 30 days after treatment.
- Do not exceed a maximum of 2 lbs ethephon active ingredient per acre per year through repeated uses of any ethephon products.

APPLICATION TIMING

Successful results with PREP™ brand Ethephon for Cotton and Tobacco call for treatment when leaves are mature, not overly rank green when sprayed. To easily determine the proper treatment timing and the number of leaves per stalk ready for harvest, test spray several plants in more than one location in each field and observe the response. Mature leaves will begin to yellow in 24 to 72 hours. Test leaves that fail to yellow in 72 hours are not mature and are not ready for PREP™ brand Ethephon for Cotton and Tobacco treatment. Wait a few days to permit further natural maturing, then make another test spray or "maturity" check.

To avoid quality loss and or possible leaf drop, harvest any yellowed leaves prior to application. Use lower rates under most conditions. Limit use of higher rates to cool (below 65°F at the time of treatment) slow ripening conditions.

When you have confirmed the desired number of leaves per plant that will color, you can determine the number of acres to treat in order to fill the barn.

Prepare your test spray by mixing one teaspoon of PREP™ brand Ethephon for Cotton and Tobacco in 1 quart of water. Spray each test plant with about 1 oz. of this mixture, covering all leaves with a fine mist. PREP™ brand Ethephon for Cotton and Tobacco will not color immature sprayed leaves.

WHEN TO HARVEST

All mature, sprayed leaves will begin to color within 24 to 72 hours after PREP™ brand Ethephon for Cotton and Tobacco application. The yellowing process is weather dependent; cool weather will delay, while hot, sunny weather can speed up the process. Harvest treated tobacco when leaves have reached the desired color intensity.

Harvest can commence 48 hours after PREP™ brand Ethephon for Cotton and Tobacco application. To determine harvest timing and avoid quality loss or leaf drop, closely monitor treated crop and weather conditions.

CURING PREP™ BRAND ETHEPHON FOR COTTON AND TOBACCO TREATED TOBACCO

Curing procedures are as much an art as a science and each cure must be judged on the basis of tobacco condition, interval between treatment and harvest, weather and type of curing facility before prescription temperature and ventilation schedules can be established. To obtain maximum quality, care must be taken to observe and control the curing process closely, especially during the late "coloring" and early "drying" stages of the leaf.

PREP™ brand Ethephon for Cotton and Tobacco treated tobacco will have started the coloring process when harvested, reducing the time required in the coloring phase of curing. Treated tobacco should be dried faster. If tobacco leaves are green or contain some green when harvested, it may be necessary to color them for a few hours. If the leaves are completely yellow, temperature and ventilation must be adjusted in a manner to dry the tobacco as fast as possible without scalding. Once the leaf is dried (3/4 dry), you should follow normal procedures for curing. Since PREP™ brand Ethephon for Cotton and Tobacco treated leaves cure faster, treated and untreated leaves should not be cured together in the same barn.

IMPORTANT: READ BEFORE USE

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once.

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NET CONTENTS: 2.5 GALLONS

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