

68891-7



10/9/2003

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OCT -9 2003

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Entek Corporation, Care of:  
Compliance Services International (CSI)  
Mr. John O. Pearson  
9488 Treelake Road  
Granite Bay, CA 95746

Dear Mr. Pearson:

Subject: ETK-2201 Cotton Harvest Aid/Defoliant  
EPA Registration Number 68891-7  
Application Dated July 30, 2003

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act as amended is acceptable, provided you make the following changes before you release the product for shipment.

1. Add POISON and a skull and crossbones in the immediate proximity of the signal word "DANGER." The word POISON must appear in RED on a distinctly contrasting background and the skull and crossbones shall appear in close proximity. 40 CFR156.10(i)

[Note to registrant: Your request to waive this requirement has been denied. Since the Acute Dermal toxicity test was not conducted because of severe corrosivity, it is automatically defined as Category I, and thus requires both POISON and the skull and crossbones symbol.]

2. Change subheading "Storage" to "Pesticide Storage" in STORAGE AND DISPOSAL section.

Submit three (3) copies of final printed labeling incorporating the above changes before you release the product for shipment. Amended labeling will supercede all previously accepted ones. A stamped copy of labeling is enclosed for your records.

Sincerely,

A handwritten signature in black ink, appearing to read "James A. Tompkins".

James A. Tompkins, haj  
Product Manager 25  
Herbicide Branch  
Registration Division (7505C)

ACCEPTED  
with COMMENTS  
in EPA Letter Dated

OCT 9 2003

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

# ETK-2201

## COTTON HARVEST AID / DEFOLIANT

68891-7

**Active Ingredients:**

1-Aminomethanamide dihydrogen tetraoxosulfate	
... (Monocarbamide dihydrogen sulfate).....	58.6%
Ethephon (2-Chloroethylphosphonic acid) .....	18.3%
Inert Ingredients.....	23.1%
<b>TOTAL.....</b>	<b>100.0%</b>

This product contains 2.28 pounds of ethephon per gallon

Density in lb/gal @ 68°F ..... 12.45

**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.)

**SEE ADDITIONAL PRECAUTIONARY STATEMENTS  
ON THE NEXT PAGE**

FIRSTAID	
If in eyes	<ul style="list-style-type: none"> <li>•Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>•Call a poison control center or doctor for treatment advice.</li> </ul>
If on skin or clothing	<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>
If swallowed	<ul style="list-style-type: none"> <li>•Call poison control center or doctor immediately for treatment advice.</li> <li>•Have person sip a glass of water if able to swallow.</li> <li>•Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>•Do not give anything by mouth to an unconscious person.</li> </ul>
If inhaled	<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 by mouth-to-mouth, if possible.</li> <li>•Call a poison control center or doctor for further treatment advice.</li> </ul>
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.	
NOTE TO PHYSICIAN	
There is no specific antidote. Treat symptomatically. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Acid ingestion may cause gastroesophageal perforation. Perforation may occur within 72 hours, but along with abscess formation, may occur weeks later. Due to the corrosive property of this material, emesis is contraindicated. Careful gastric lavage is required because of the possibility of esophageal perforation. The use of alkaline substances to neutralize the acid is contraindicated. Victims of severe overexposure by inhalation should be kept under medical observation for up to 72 hours for delayed onset of pulmonary edema.	

**WARRANTY LIMITATIONS AND DISCLAIMER**

1. Entek warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated when used in accordance with the use directions under normal conditions. Entek neither makes, nor authorizes any agent or representative to make, any other warranty of fitness or of merchantability, guarantee or representation, express or implied, concerning this material.
2. Critical and unforeseeable factors beyond Entek's control prevent it from eliminating all risks in connection with the use of this material. Such risks include, but are not limited to, damage to plants and crops to which the material is applied, lack of complete control, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit for uses stated herein and even though label directions are followed. Buyer and user acknowledge and assume all risks and liability resulting from the handling, storage, and use of this material (except those assumed by Entek in (1) above). Entek shall not be liable for incidental or consequential damages.

**PATENTS AND PATENTS PENDING**

The product contained herein is described in the following U.S. composition, manufacturing and/or method of use patents: 4397873, 4404116, 4445925, 4818289, 4966620, and 4994101. Other U.S. and foreign patents are pending.

A license is hereby granted to the purchaser under the above listed U.S. Patents only, and only for the use of the product contained herein, and only in accordance with the instructions on this label.

Manufactured for



Entek Corporation  
6835 Deerpath Road, Suite E  
Elkridge, MD 21075  
(800) 760-7150

Net Contents: \_\_\_\_\_ Gallons

EPA Reg. No. 68891-7

EPA Est. No. \_\_\_\_\_

**PRECAUTIONARY STATEMENTS**

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS****DANGER**

**CORROSIVE.** Causes irreversible eye damage. Causes skin irritation. Harmful if swallowed, inhaled, or absorbed through skin. Do not get in eyes, on skin, or on clothing. Avoid breathing spray mist. Wear goggles or face shield. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

**PERSONAL PROTECTIVE EQUIPMENT (PPE):** Applicators and other handlers must wear:

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, mixing, or loading.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instruction for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**ENGINEERING CONTROLS STATEMENTS:** 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)(4-5)], 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 body thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**ENVIRONMENTAL HAZARDS:** This product may be harmful to wildlife directly sprayed. 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 disposing of equipment wash waters. Do not apply in any manner not specified on the label.

**PHYSICAL OR CHEMICAL HAZARDS:** Do not allow ETK-2201™ to be heated above 176°F, as the quality of the product may deteriorate. If ETK-2201 is heated above 230°F, vigorous decomposition may occur. Do not weld equipment containing ETK-2201.

**CLOTHING:** ETK-2201 can attack cotton, nylon, and leather clothing. If ETK-2201 contacts clothing of this type, flush with plenty of water to minimize damage.

DO NOT MIX with materials containing chlorates as this could result in the formation of hypochlorous acids which on heating will emit toxic chlorine fumes.

DO NOT APPLY this product through any type of irrigation system.

DO NOT PLANT another crop within 30 days after treatment.

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

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

**STORAGE AND DISPOSAL**

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

**STORAGE:** Material crystallizes below 32°F. Do not heat above 176°F.

Materials recommended for use with ETK-2201 include polyethylene, polypropylene, PVC, CPVC, fiberglass made with reinforced resins such as polyesters and epoxides, most rubbers, and 316 stainless steel.

Do not expose mild steel, leather, nylon, or acid sensitive resins such as delrin and celcon to undiluted ETK-2201.

**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:** Triple rinse (or equivalent) all containers and offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by procedures approved by state and local authorities.

**RETURNABLE - REFILLABLE CONTAINERS:** After use, return the container to the point of purchase or designated locations. This container must only be refilled with ETK-2201 Cotton Harvest Aid. 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.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Follow all applicable directions, restrictions, and precautions on the EPA-registered label. 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. This label must be in the possession of the user at the time of application.

**AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements in this labeling 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 48 hours. The REI increases to 72 hours in outdoor areas where average rainfall is less than 25 inches a 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
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- Notify workers of the application by warning them orally and posting signs at entrances to treated areas.

**COTTON HARVEST AID****Application Recommendations****GENERAL INFORMATION**

ETK-2201, or a tankmix of ETK-2201 and an approved partner, when applied as a foliar spray to cotton, provides effective defoliation of cotton plants and increases the speed and efficacy of opening of mature bolls. ETK-2201 may be applied alone to cotton that is very physiologically mature; however, under most conditions, most consistent defoliation and regrowth inhibition is achieved with tankmixes of ETK-2201 and an approved defoliant. Where cotton is lodged or extremely rank, it may be desirable to apply a defoliant prior to application of ETK-2201 for boll opening. Typically, satisfactory defoliation is achieved in 7-10 days. Under adverse conditions, such as low temperatures and/or toughened foliage, up to 14 days may be required for satisfactory defoliation. ETK-2201 also provides limited control of cotton regrowth.

**APPLICATION TIMING & RATE**

Apply ETK-2201 when sufficient mature unopened bolls have developed to produce the desired cotton yield (approximately 85% opened bolls in most cases). Consult University recommendations in your area for testing of boll maturity. Treatment with ETK-2201 before the appropriate number of bolls have reached maturity may result in reduction of yield and lint quality.

**ETK-2201 ALONE**

Apply 3.0-3.5 quarts of ETK-2201 per acre. For effective defoliation and boll opening of very mature cotton under optimum conditions, i.e., relatively dry with average temperatures of 80F and above, apply 3.0 quarts of ETK-2201 per acre. Under less than optimum conditions and with rank cotton, apply 3.5 quarts of ETK-2201 per acre.

**ETK-2201 TANKMIX**

Under optimum conditions, i.e., relatively dry with average temperatures of 80F and above, ETK-2201 at 1.5-2.0 quarts per acre, in tankmixes with an approved defoliant, is normally adequate for defoliation and boll opening (see Table below). Under less than optimum conditions and with rank cotton, higher rates of application in tankmixes with an approved defoliant are required.

ETK-2201 may be applied at 0.4 quarts per acre in tankmixes with Def® 6/Folax® or Dropp® 50WP/FreeFall™ 50WP for defoliation enhancement. Refer to the Def® 6/Folax® and Dropp® 50WP/FreeFall™ 50WP labels for rates of application. Application of ETK-2201 at 0.4 quarts per acre in tankmixes for defoliation enhancement is not sufficient to provide substantial boll opening.

For most consistent defoliation and regrowth inhibition, ETK-2201 should be applied in a tankmix with an approved defoliant. Below is a partial listing of approved defoliants and rates of application:

Defoliant	Defoliant Rates for ETK-2201 Tankmixes
Def® 6/Folax®	4.0-12 fl oz/A*
Dropp® 50WP/FreeFall™ 50WP	0.8-2.0 oz/A
Glnstar®	3.0-8.0 fl oz/A
Harvade® 5F	4.0-6.4 fl oz/A

\*Under extreme cool, wet conditions, the rate of Def® 6/Folax® may be increased to 24 fl oz.

ETK-2201 may also be applied in tankmixes with any approved desiccants/herbicides, including Boa™, Cyclone®, Starfire®, Glyphosate Original and Roundup® (and other labeled glyphosate products).

Refer to product labels for rates and additional product information. Tankmixes must be made in accordance with the more restrictive of label limitations and precautions. No label dosage rate should be exceeded. ETK-2201 cannot be mixed with any product containing a label prohibition against such mixing.

**ETK-2201 ALONE and ETK-2201 TANKMIX**

To ensure optimum activity, thorough and uniform spray coverage is required. It is essential that cotton leaves and unopened bolls are contacted in order to achieve satisfactory results. Apply as a dilute spray in 10-30 gallons of water per acre by ground application or 3-10 gallons of water per acre by aerial application.

**USE LIMITATIONS**

Two applications of ETK-2201 are allowed per year, but do not exceed a maximum of 3.5 quarts of ETK-2201 per acre per year (equivalent to 2.0 lb ethephon active ingredient per acre per year).

The maximum amount of ethephon active ingredient that can be applied to cotton per acre per year from all sources of ethephon is 2.0 lb.

The use of adjuvants with ETK-2201 is required only where necessary for optimum performance of tankmix partners, e.g., Harvade®, Roundup® D-PAK, Boa™, Cyclone®, and Starfire®. To reduce potential for desiccation of cotton foliage in Harvade and Roundup tankmixes, minimum rates of adjuvants should be used. For other applications, use of adjuvants, other than the minimum rate of a non-ionic surfactant, is not advised as this may increase the risk of desiccation of cotton foliage.

Do not harvest cotton sooner than 7 days after treatment with ETK-2201.

**MIXING PROCEDURE**

Add 1/2 to 3/4 of the required amount of water to the spray tank and begin agitation. Add the required amount of ETK-2201 and then the remaining amount of water. If Dropp® 50WP/FreeFall™ 50WP is used in the mixture, it should be added to the spray tank first, followed by ETK-2201. Prepare only as much spray solution as can be used on the day of mixing. Do not allow the spray solution to stand overnight. Do not permit undiluted ETK-2201 to contact painted surfaces, spray equipment, or any airplane parts. All spills should be rinsed immediately with plenty of water.

**EQUIPMENT CLEANING**

Rinsing is strongly recommended with ETK-2201. Prolonged exposure to spray deposit may damage acrylic plastics, certain paints, and metals. Dilute residues are corrosive, so neutralization is an essential part of the cleanup. All interior surfaces should be rinsed with a neutralizing solution prior to being parked. The best neutralizing solution to use is baking soda. Add one pound neutralizer to the rinse water. Run the pump long enough to clear the lines and nozzles of ETK-2201 residue and rinse the exterior of the equipment. Areas used to rinse equipment should be rinsed well since ETK-2201 is corrosive to concrete.

**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**

The following aerial drift reduction advisory information must be contained in the product labeling:

[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).

**TRADEMARKS**

Boa™ is a trademark of Griffin LLC.  
Def® 6 is a registered trademark of Bayer AG, Germany  
Dropp® 50WP is a registered trademark of Aventis.

Folex® is a registered trademark of Aventis.  
FreeFall™ 50WP is a trademark of Griffin LLC.  
Roundup® is a registered trademark of Monsanto Co.  
Cyclone® is a registered trademark of Syngenta.  
Ginstar® is a registered trademark of Aventis.  
Harvade® 5F is a registered trademark of Uniroyal Chem. Co.  
Quick-Pick® is a registered trademark of United Agr-Products, Inc.  
Starfire® is a registered trademark of Syngenta.