

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



OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

**4/8/05**

Carolyn Brinkley  
Syngenta Crop Protection, Inc.  
PO Box 18300  
Greensboro, NC 27419

re: Epi-Mek 0.15 EC Miticide/Insecticide, EPA Reg. # 100-1154  
revised basic CSF (dated 9/10/04), acute toxicology, and label submitted 10/18/04  
CSF accepted; data gaps  
acute toxicology acceptable for regulatory purposes  
label accepted with comments

Dear Ms. Brinkley:

CSF

On 10/18/04 Syngenta submitted a new basic confidential statement of formula (CSF) (dated 9/10/04) for the above product. This formula will be used globally for this product. The percent active ingredient dropped from 2.0% to 1.84% (although due to a change in density the quantity remains 0.15 lb a.i./gallon).

The Confidential Statement of Formula dated **9/10/04** for the **basic formulation** is acceptable. Enclosed please find a copy of the 3/14/05 review by DRate. Revised ingredients were found to be similar to previous ingredients. The ingredient percentages and limits comply with PR Notice 91-2. The basic Confidential Statement of Formula replaces all previous versions.

**Studies must be submitted within 18 months to support the following data gaps:**  
**one year storage stability (830.6317)**  
**corrosion characteristics (830.6320)**

acute toxicology

Given the change in formula, a new set of acute toxicology studies was submitted. A copy of the 11/24/04 review by EMcAndrew is enclosed. The results of the acute toxicology studies are as follows:

acute oral toxicity	III *
acute dermal toxicity	IV
acute inhalation toxicity	IV
primary eye irritation	IV
primary skin irritation	IV
dermal sensitization	negative
signal word	CAUTION

\* acute oral study unacceptable but satisfactory for regulatory purposes as Category III.

labeling

Given the changes in the acute toxicology, new labeling (mainly reflecting changes in precautionary statements) was submitted 10/18/04.

The revised labeling reference to above, submitted in connection with the registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable provided you make the following changes.

<p>Directions for Use Agricultural Use Requirements early entry PPE</p>	<p>Replace current text with the following:</p> <ul style="list-style-type: none"> <li>"- coveralls over short-sleeved shirt and short pants"</li> <li>- chemical-resistant gloves - EPA chemical-resistance category B (e.g. barrier laminate or butyl rubber &gt; 14 mils)</li> <li>- chemical-resistant footwear plus socks"</li> </ul>
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A copy of your label stamped "accepted with comments" is enclosed for your records.

Submit two (2) copies of your final printed labeling incorporating the above changes prior to releasing your product for shipment. If the above provisions 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.

Sincerely yours,



Thomas C. Harris  
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Insecticide Rodenticide Branch  
Registration Division (7505C)  
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enclosures

(BOOKLET)

**RESTRICTED USE PESTICIDE**  
TOXIC TO FISH, MAMMALS, AND AQUATIC ORGANISMS  
FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR  
PERSONS UNDER THEIR DIRECT SUPERVISION, AND ONLY FOR THOSE USES  
COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

Epi-Mek® 0.15 EC

Miticide/Insecticide

Active Ingredient:

Abamectin<sup>1</sup> ..... 1.84%\*

Other Ingredients: ..... 98.16%

Total: ..... 100.00%

<sup>1</sup>(CAS No. 65195-56-4 and No. 65195-55-3)

Contains petroleum distillate

\*1 gal. contains 0.15 lb. abamectin

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

See additional precautionary statements and directions for use in booklet.

EPA Reg. No. 100-1154

EPA Est.

SCP 1154A-M(DRAFT global formula10-14-04)

Net Contents

**ACCEPTED  
with COMMENTS  
In EPA Letter Dated:**

APP - 3, 2005

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

100-1154

<b>FIRST AID</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Immediately call poison control center or doctor immediately for treatment advice.</li> <li>• Do not give <b>any</b> liquid to the person.</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>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>NOTE TO PHYSICIAN</b>	
<p>Contains petroleum distillate. Vomiting may cause an aspiration pneumonia hazard. Early signs of intoxication include dilation of pupils, muscular incoordination, and muscular tremors. Toxicity following accidental ingestion of this product can be minimized by early administration of chemical adsorbents (e.g., activated charcoal).</p>	
<p>If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parental fluid replacement therapy should be given, along with other required supportive measures (such as maintenance of blood pressure levels and proper respiratory functionality) as indicated by clinical signs, symptoms, and measurements.</p>	
<p>In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since abamectin is believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid) in patients with potentially toxic abamectin exposure.</p>	
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	

<p align="center"><b>HOT LINE NUMBER</b>          For 24-Hour Medical Emergency Assistance (Human or Animal)          Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident)          Call  <b>1-800-888-8372</b></p>
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**PRECAUTIONARY STATEMENTS**

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**Hazards to Humans and Domestic Animals**

**CAUTION**

Harmful if absorbed through skin, inhaled, or swallowed. Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with skin, eyes or clothing. Washing hands thoroughly with sap and water after handling and before eating, drinking, chewing gum, or using tobacco will reduce exposure. Removing and washing contaminated clothing before reuse may reduce exposure.

**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 C on an EPA chemical-resistance category selection chart.

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves – EPA chemical-resistance category C (e.g., barrier laminate or butyl rubber  $\geq 14$  mils, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, polyvinyl chloride (PVC)  $\geq 14$  mils or viton  $\geq 14$  mils)
- Shoes plus socks
- Chemical-resistant apron when cleaning equipment, mixing, or loading

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 used 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), the handler PPE requirements may be reduced or modified as specified in the WPS.

### **User Safety Recommendations**

#### **Users should:**

- Wash thoroughly with soap and water after handling and 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.

### **Environmental Hazards**

This pesticide is toxic to fish and wildlife. 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 apply when weather conditions favor drift from target areas. Do not contaminate water when disposing of equipment wash water or rinsate. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

Use of this product may pose a risk to threatened and endangered species of fish, amphibians, crustaceans (including fresh water shrimp), and insects. All use of this product in the state of California should comply with the recommendations of the California Endangered Species Project. Before using this product in California, consult with your county agriculture commissioner to determine use limitations that apply in your area.

**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and Buyer and User assume the risk of any such use. SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall SYNGENTA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

### DIRECTIONS FOR USE RESTRICTED USE PESTICIDE

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 over short-sleeved shirt and short pants
- Chemical-resistant gloves – EPA chemical-resistance category B (e.g., barrier laminate or butyl rubber  $\geq 14$  mils).
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

**FAILURE TO FOLLOW DIRECTIONS AND PRECAUTIONS ON THIS LABEL MAY RESULT IN CROP INJURY, POOR PEST CONTROL, AND/OR ILLEGAL RESIDUES.**



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**GENERAL INFORMATION**

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Do not apply Epi-Mek 0.15 EC by aerial application in New York State.

Thorough coverage is essential for good mite and insect control on crops.

Epi-Mek 0.15 EC is an emulsifiable concentrate which will control certain pests on the crops listed on this label when applied according to the **Directions for Use**.

Epi-Mek 0.15 EC has been tested for phytotoxicity and has a wide margin of safety on a variety of crops. Epi-Mek 0.15 EC has also been shown to be compatible with many commonly used pesticides, crop oils, and nutritional sprays. However, since it is not possible to test a large number of possible mixtures, the user should pre-test to assure the physical compatibility and lack of phytotoxic effect of any proposed mixtures with Epi-Mek 0.15 EC.

**Chemigation**

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

**Spray Drift Precautions for Epi-Mek Use on Celery, Celeriac, Cucurbits, Grapes, Head Lettuce, Peppers, Potatoes, Strawberries, and Tomatoes**

Do not apply by ground within 25 ft., or by air within 150 ft. of lakes, reservoirs, rivers, permanent streams, marshes, potholes, or natural ponds; estuaries and commercial fish farm ponds.

All aerial and ground application equipment must be properly calibrated and maintained using appropriate carriers. For aerial applications, the spray boom should be mounted on the aircraft so as to minimize drift caused by wing tip vortices. The minimum practical boom length should be used and must not exceed 75% of wing span or rotor diameter.

Use the largest droplet size consistent with good pest control. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible, and by avoiding excessive spray boom pressure. Spray should be released at the lowest height consistent with pest control and flight safety. Applications more than 10 ft. above the crop canopy should be avoided.

Make aerial or ground applications when the wind velocity favors on-target product deposition (approximately 3-10 mph). Do not apply when wind velocity exceeds 15 mph. Avoid applications when wind gusts approach 15 mph. Risk of exposure to aquatic areas can be reduced by avoiding applications when wind direction is toward

the aquatic area. Do not cultivate within 25 ft. of the aquatic area so as to allow growth of a vegetative filter strip.

Low humidity and high temperatures increase the evaporation rate of spray droplets and therefore the likelihood of increased spray drift to aquatic areas. Avoid spraying during conditions of low humidity and/or high temperature.

Do not make aerial or ground applications during temperature inversions. Inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

**Resistance Management:** Because of the inherent risks of resistance development to any product, it is strongly advised that Epi-Mek 0.15 EC be used in a sound resistance management program which includes rotation with other products with different modes of action.

**CROP USE DIRECTIONS**

**Almonds and Walnuts: For control of twospotted spider mite, strawberry spider mite, Pacific spider mite, and European red mite**

Epi-Mek 0.15 EC may be applied using conventional dilute or concentrate sprayers calibrated to deliver sufficient water for thorough coverage. Gallonage of spray will vary with size and number of trees per acre and density of foliage. In any case, thorough coverage is essential for good spider mite and insect control. For best results, apply in combination with horticultural spray oil (not a dormant oil) as directed. Applications without horticultural spray oil\* may result in reduced efficacy and/or residual control. Do not graze treated orchards. To reduce the risk to aquatic environments, maintain a 25-yard buffer zone from all water bodies containing aquatic life (streams, ponds, lakes, rivers, springs, irrigation canals containing water year-round, swamps, bogs and marshes).

Use Epi-Mek 0.15 EC in combination with a horticultural spray oil (not a dormant oil) approved for use on almonds and walnuts. Apply Epi-Mek 0.15 EC when spider mites first appear. Residual spider mite control is greater from spray deposits on newer leaves compared to older leaves. A second application may be made if necessary to maintain control.

**Almonds and Walnuts**

Pests	For Dilute Sprays <sup>1</sup> fl. oz./100 gals.	For Concentrate Sprays <sup>2</sup> fl. oz./A
Twospotted spider mite Pacific spider mite Strawberry spider mite European red mite	2.5-5.0	10-20
<b>Horticultural Spray Oil*</b>	0.25% or 1 gal./A	Minimum of 1 gal./A

\*For best results use a horticultural spray oil, not a dormant oil.  
<sup>1</sup>The rate of Epi-Mek 0.15 EC per 100 gals. is based on a volume of 400 gals./A dilute spray.  
<sup>2</sup>To determine the amount of product per acre for concentrate sprays, first determine the amount that would be required in a full cover dilute spray. Use the same amount of product per acre in concentrate sprays as would be required for the dilute sprays to the same orchard/grove. This may result in use of less than 10 fl. oz./A on small trees.

**Use Restrictions – Almonds and Walnuts**

- Do not exceed 20 fl. oz. of Epi-Mek 0.15 EC/A per application or 40 fl. oz./A in a growing season.
- Do not make more than 2 applications per growing season.
- Do not apply in less than 40 gals. of water/A.
- If a second application is necessary, do not retreat within 21 days.
- Do not apply within 21 days of harvest.
- Do not apply by aircraft.

**Apples: For control of white apple leafhopper, tentiform leafminers, European red mite, twospotted spider mite, and McDaniel spider mite**

Epi-Mek 0.15 EC may be applied using conventional dilute or concentrate ground sprayers calibrated to deliver sufficient water for thorough coverage. Gallonage of spray will vary with size and number of trees per acre and density of foliage. In any case, thorough coverage is essential for good spider mite and insect control. For best results, apply in combination with horticultural spray oil (not a dormant oil) as directed. Applications without horticultural spray oil\* may result in reduced efficacy and/or residual control. Do not graze treated orchards.

Observe the following precautions when spraying in the vicinity of aquatic areas such as lakes, reservoirs, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds:

Spray last 3 rows windward of aquatic areas using nozzles on one side only, with spray directed away from aquatic areas.

Avoid spray going over tops of trees by adjusting or turning off top nozzles. Shut off nozzles on the side away from the grove/orchard when spraying the outside row. Shut off nozzles when turning at ends of row and passing tree gaps in rows.

Do not apply Epi-Mek 0.15 EC when weather conditions favor drift to aquatic areas.

Do not apply within 110 ft. upwind of aquatic areas or when wind speed is above 8 mph.

Do not apply during a temperature inversion.

For best results, use Epi-Mek 0.15 EC in combination with a horticultural spray oil\* approved for use on apples. Apply Epi-Mek 0.15 EC when spider mite or insect thresholds are reached. A second application may be made if necessary to maintain control.

**White Apple Leafhopper (Not for use west of the Rocky Mountains):** Application of Epi-Mek 0.15 EC is limited only to first generation white apple leafhopper. Apply soon after petalfall in combination with horticultural spray oil\*.

**Spider Mites:** For best results, apply before a threshold of 5 spider mites per leaf is reached. Residual spider mite control with Epi-Mek 0.15 EC in combination with horticultural spray oil\* is greater from spray deposits on newer leaves compared to older. Applications of Epi-Mek 0.15 EC for spider mite control should be limited to a period extending from petalfall through 6 weeks following petalfall.

**Tentiform Leafminers:** For best results, apply against egg (to control new hatch) and early sap feeder stages of first and second generation tentiform leafminers when locally established thresholds have been reached. Do not apply during bloom.

### Apples

Pests	For Dilute Sprays <sup>1</sup> fl. oz./100 gals.	For Concentrate Sprays <sup>2</sup> fl. oz./A
Twospotted spider mite McDaniel spider mite European red mite Tentiform leafminers White apple leafhopper	2.5-5.0	10-20
<b>Horticultural Spray Oil*</b>	0.25% or 1 gal./A	Minimum of 1 gal./A

(For best results, use oil with Epi-Mek 0.15 EC.)

\*Not a dormant oil

<sup>1</sup>The rate of Epi-Mek 0.15 EC per 100 gals. is based on a volume of 400 gals./A dilute spray.

<sup>2</sup>To determine the amount of product per acre for concentrate sprays, first determine the amount that would be required in a full cover dilute spray. Use the same amount of product/A in concentrate sprays as would be required for the dilute sprays to the same orchard/grove. This may result in use of less than 10 fl. oz./A on small trees.

### Use Restrictions – Apples

- Do not exceed 20 fl. oz. of Epi-Mek 0.15 EC/A per application or 40 fl. oz./A in a growing season.
- Do not make more than 2 applications per growing season.
- Do not apply in less than 40 gals. of water/A.
- If a second application is necessary, do not retreat within 21 days.
- Do not apply within 28 days of harvest.
- Do not apply by aircraft.

- Epi-Mek 0.15 EC in combination with horticultural spray oil\* may cause fruit injury to certain varieties of apples, e.g., russetting on light-skinned varieties such as Golden Delicious, when used alone or when other products are applied sequentially. The Directions for Use and Precautions on horticultural spray oil\* labels, as well as precautions in official spray guides should be followed carefully when using Epi-Mek 0.15 EC in combination with horticultural spray oil\*.

\*Not a dormant oil

**Celeriac (*Apium graveollens*): For control of twospotted spider mites**

Epi-Mek 0.15 EC may be applied using conventional dilute or concentrate sprayers calibrated to deliver sufficient water for thorough coverage of the foliage. For best results, use in combination with a non-ionic surfactant. Apply when mites first appear and repeat as necessary to maintain control.

**Celeriac**

<b>Pests</b>	<b>fl. oz./A</b>
Twospotted spider mites	16.0

**Use Restrictions – Celeriac**

- Do not apply at less than 7-day intervals.
- Do not exceed 48 fl. oz./A after transplanting.
- Do not apply within 7 days of harvest.
- Do not apply in less than 20 gals. of water/A.
- For resistance management purposes, make no more than 2 sequential applications.



**Celery: For control of *Liriomyza* leafminers and spider mites (twospotted and carmine)**

Mix with water as indicated below and apply thoroughly by ground or air as a foliar spray to assure good upper and lower leaf coverage. Use 8 fl. oz./A for low to moderate infestations and 16 fl. oz./A for severe infestations. For spider mites, apply when mites first appear and repeat as necessary to maintain control. For leafminers, apply when adult flies are first observed and repeat applications as necessary to maintain control.

**Celery**

Pests	fl. oz./A
<i>Liriomyza</i> leafminers Spider mites	8.0-16.0

**Use Restrictions – Celery**

- Do not apply at less than 7-day intervals.
- Do not exceed 48 fl. oz./A after transplanting.
- Do not apply within 7 days of harvest.
- Do not apply in less than 20 gals. of water/A.
- For resistance management purposes, use no more than 2 applications on celery being grown for transplanting.
- Do not make more than 2 sequential applications after transplanting.

**Note:** Epi-Mek 0.15 EC may be used without any wetting agent. When necessary to improve the wetting of foliage and to smooth out spray deposits, a nonionic surfactant is recommended.

**Citrus: For control of citrus rust mite, broad mite, twospotted spider mite, citrus bud mite, citrus leafminer, and citrus thrips**

Apply using conventional dilute or concentrate ground sprayers calibrated to deliver sufficient water for thorough coverage (or outside coverage for citrus leafminers and citrus thrips). Gallonage of spray will vary with size and number of trees per acre and density of foliage. In any case, thorough coverage is essential for good mite and insect control.

Observe the following precautions when spraying in the vicinity of aquatic areas such as lakes, reservoirs, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds:

Spray last 3 rows windward of aquatic areas using nozzles on 1 side only, with spray directed away from aquatic areas.

Avoid spray going over tops of trees by adjusting or turning off top nozzles. Shut off nozzles on the side away from the grove/orchard when spraying the outside row. Shut off nozzles when turning at ends of row and passing tree gaps in rows.

Do not apply Epi-Mek 0.15 EC when weather conditions favor drift to aquatic areas.

Do not apply within 110 ft. upwind of aquatic areas or when wind speed is above 8 mph.

Do not apply during a temperature inversion.

Applications should be made with a minimum of 0.20% horticultural spray oil\* in the spray mixture or not less than 1.0 gal. of oil/A (except where specified differently below).

**Mites:** Apply when mites first appear during spring, summer, and/or fall.

**Citrus Bud Mite:** For best results, time the spray at "bud swell."

**Citrus Leafminer:** Apply to protect new growth during spring, summer, or fall.

**Citrus Thrips:** Spray applications targeted for citrus thrips will only control the current generation and must be correctly timed. Apply when economic thresholds have been reached (after egg hatch has begun – preferably early to mid-hatch).

\*Not a dormant oil

**Citrus**

<b>Pests</b>	<b>For Dilute Sprays<sup>1</sup> fl. oz./100 gals.</b>	<b>For Concentrate Sprays<sup>2</sup> fl. oz./A</b>
Citrus rust mite	0.5-2.0	5-20
Broad mite	1.0-2.0	10-20
Twospotted spider mite	1.0-2.0	10-20
Citrus bud mite	1.0-2.0	10-20 <sup>3</sup>
Citrus leafminer	--	10-20 <sup>4</sup>
Citrus thrips	--	10-20 <sup>5</sup>
<b>Horticultural Spray Oil*</b>	Minimum 0.2%	Minimum of 1 gal./A

<sup>1</sup>The rate of Epi-Mek 0.15 EC per 100 gals. is based on a volume of 1,000 gals./A dilute spray.

<sup>2</sup>For concentrate sprays, adjust the dosage to apply an amount/A equal to that used in full cover dilute spray.

<sup>3</sup>For best results, use a minimum of 500 gals./A of spray mix with a minimum of 0.5% horticultural spray oil\*.

<sup>4</sup>For best results, use 100-150 gals./A of spray mix applied to achieve outside coverage.

<sup>5</sup>For best results, use 100-250 gals./A of spray mix applied to achieve outside coverage.

\*Not a dormant oil

**Use Restrictions – Citrus**

- Do not apply within 7 days of harvest.
- Do not apply within 30 days of last treatment.
- Do not apply more than 3 applications or 40 fl. oz./A in any growing season.
- Always apply in combination with horticultural spray oil\* as directed.
- For resistance management purposes, do not use in citrus nurseries.
- Do not apply by aircraft.

\*Not a dormant oil

**Cucurbits (Chayote, Chinese Waxgourd, Citron Melon, Cucumbers, Gherkin, Edible Gourds, Momordica spp., Melons, Pumpkin, Summer Squash, Winter Squash, Watermelon): For control of spider mites and leafminers**

Mix with water as indicated below and apply thoroughly by ground or air as a foliar spray to ensure good upper and lower leaf coverage. Use 8 fl. oz./A for low to moderate infestations and 16 fl. oz./A for severe infestations.

Apply when adult leafminer flies or spider mites are first observed and repeat applications as necessary to maintain control within constraints of a sound resistance management program.

**Cucurbits**

Pests	fl. oz./A
Spider mites Leafminers	8.0-16.0

**Use Restrictions – Cucurbits**

- Do not exceed 48 fl. oz./A in a growing season.
- Do not apply within 7 days of harvest.
- Do not apply at less than 7-day intervals.
- Do not apply in less than 20 gals. of water/A.
- Do not make more than 2 sequential applications.

**Grapes: For control of western grapeleaf skeletonizer, twospotted spider mite, Pacific spider mite, and Willamette spider mite**

Epi-Mek 0.15 EC may be applied using conventional ground sprayers calibrated to deliver sufficient water for thorough coverage. Thorough coverage is essential for good spider mite and insect control. Always apply in combination with a nonionic surfactant to improve the wetting of the foliage and smooth out spray deposits. Do not spray alternate rows. Epi-Mek 0.15 EC must be applied to both sides of each row for maximum coverage. Use 8 fl. oz./A for low to moderate infestations and 16 fl. oz./A for severe infestations. Do not graze treated vineyards.

Apply Epi-Mek 0.15 EC plus a nonionic surfactant when western grapeleaf skeletonizer larvae are first observed. For optimal control, apply shortly after egg hatch. For spider mite control, apply when mites first appear, but before motiles exceed 5 per leaf.

**Grapes**

Pests	fl. oz./A
Twospotted spider mite Pacific spider mite Willamette spider mite Western grapeleaf skeletonizer	8.0-16.0 plus a nonionic surfactant

**Note:** Epi-Mek 0.15 EC must be applied in combination with a nonionic surfactant to improve wetting of foliage and to smooth out spray deposits.

**Use Restrictions – Grapes**

- Do not exceed 16 fl. oz. of Epi-Mek 0.15 EC/A per application or 32 fl. oz./A in a growing season.
- Do not make more than 2 applications per growing season.
- If a second application is necessary, do not apply within 21 days of first application.
- Do not apply in less than 50 gals. of water/A.
- Do not apply within 28 days of harvest.

Although Epi-Mek 0.15 EC in combination with a nonionic surfactant has been tested for safety to grapes, it is impossible to test on all grape varieties under the variety of biotic and abiotic conditions that may cause phytotoxicity. Therefore, **Directions for Use** and **Precautions** on nonionic labels and in official spray guides should be followed carefully when using Epi-Mek 0.15 EC in combination with a nonionic surfactant.

**Head Lettuce: For control of *Liriomyza* leafminers**

Mix with water as indicated below and apply thoroughly by ground or air as a foliar spray to assure good upper and lower leaf coverage. Use 8 fl. oz./A for low to moderate infestations and 16 fl. oz./A for severe infestations. Apply when adult flies are first observed and repeat applications as necessary to maintain control.

**Head Lettuce**

Pests	fl. oz./A
<i>Liriomyza</i> leafminers	8.0-16.0

**Use Restrictions – Head Lettuce**

- Do not apply at less than 7-day intervals.
- Do not exceed 48 fl. oz./A per growing season.
- Do not apply within 7 days of harvest.
- Do not apply in less than 20 gals. of water/A.
- Do not make more than 2 sequential applications.

**Note:** Epi-Mek 0.15 EC may be used without any wetting agent. When necessary to improve the wetting of foliage and to smooth out spray deposits, a nonionic surfactant is recommended.

**Hops: For control of twospotted spider mites (Not registered for use in California)**

Apply Epi-Mek 0.15 EC when twospotted spider mites reach treatment thresholds. Mix with water as indicated below and apply by ground equipment as a foliar spray to assure good upper and lower leaf coverage. Gallonage of spray may vary with the size of plants and density of foliage. In any case, thorough coverage is essential for good control of twospotted mites. When using concentrate sprays, the amount of water is reduced, but the amount of Epi-Mek 0.15 EC/A should remain the same as for dilute sprays. If a second application is necessary for control, do not retreat within 21 days of the first application and only after an alternative miticide with a different mode of action has been used.

**Hops**

Pests	fl. oz./A
Twospotted spider mites	16.0

**Use Restrictions – Hops**

- For applications at ½ trellis growth (6-8 ft. height) apply 8-16 fl. oz./A in a minimum of 40 gals. of water/A.
- For applications beyond ½ trellis growth, do not use less than 16 fl. oz./A in a minimum of 100 gals. of water/A.
- Do not apply within 28 days of harvest.
- If a second application is necessary to maintain control, do not retreat within 21 days of the first application (and only after an alternative miticide with a different mode of action has been used).
- Do not exceed 2 applications per growing season or 32 fl. oz./A per growing season.
- Do not apply by aircraft.
- Do not permit livestock to graze treated hop yards.

**Note:** Epi-Mek 0.15 EC may be used without any wetting agent. When necessary to improve the wetting of foliage and to smooth out spray deposits, a nonionic surfactant is recommended.



**Spray Drift Precautions – Hops:** All ground application equipment must be properly maintained and calibrated using appropriate carriers.

Observe the following precautions when spraying in the vicinity of aquatic areas such as lakes, reservoirs, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds:

Do not apply by ground equipment within 25 ft. of the above-mentioned aquatic areas. Avoid applications when wind direction is toward these areas.

Do not make ground applications during temperature inversions or if heavy rainfall is imminent. Inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

Use the largest droplet size consistent with good pest control. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible, and by avoiding excessive spray boom pressure.

Make ground applications when the wind velocity favors on-target product deposition (approximately 3-10 mph). Do not apply when wind velocity or wind gusts approach 15 mph. Inclusion of a compatible drift reducing agent is encouraged.

Low humidity and high temperature increase the evaporative rate of droplets and therefore increase spray drift potential. When making applications under these conditions, set up equipment to produce larger droplets to compensate for evaporation.

**Pears (Including oriental pear trees): For control of twospotted spider mite, McDaniel spider mite, European red mite, pear rust mite, yellow mite, and pear psylla**

Epi-Mek 0.15 EC may be applied using conventional dilute or concentrate ground sprayers calibrated to deliver sufficient water for thorough coverage. Gallonage of spray will vary with size and number of trees per acre and density of foliage. In any case, thorough coverage is essential for good spider mite and insect control. Always apply in combination with horticultural spray oil (not a dormant oil) as directed. Do not graze treated orchards.

Observe the following precautions when spraying in the vicinity of aquatic areas such as lakes, reservoirs, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds:

Spray last 3 rows windward of aquatic areas using nozzles on 1 side only, with spray directed away from aquatic areas. Avoid spray going over tops of trees by adjusting or turning off top nozzles. Shut off nozzles on the side away from the grove/orchard when spraying the outside row. Shut off nozzles when turning at ends of row and passing tree gaps in rows.

Do not apply Epi-Mek 0.15 EC when weather conditions favor drift to aquatic areas. Do not apply within 110 ft. upwind of aquatic areas or when wind speed is above 8 mph. Do not apply during a temperature inversion.

Use Epi-Mek 0.15 EC with a minimum of 0.25% horticultural spray oil\* in the dilute spray mixture and not less than 1.0 gal. of horticultural spray oil\* per acre in the final finished spray.

**Pears**

<b>Pests</b>	<b>For Dilute Sprays<sup>1</sup> fl. oz./100 gals.</b>	<b>For Concentrate Sprays<sup>2</sup> fl. oz./A</b>
Twospotted spider mite McDaniel spider mite European red mite Pear rust mite Yellow mite	2.5-5.0	10-20
Pear psylla	2.5-5.0	10-20
<b>Horticultural Spray Oil*</b>	0.25%	Minimum of 1 gal./A

\*Not a dormant oil

<sup>1</sup>The rate of Epi-Mek 0.15 EC per 100 gals. is based on a volume of 400 gals./A dilute spray.

<sup>2</sup>To determine the amount of product per acre for concentrate sprays, first determine the amount that would be required in a full cover dilute spray. Use the same amount of product per acre in concentrate sprays as would be required for the dilute sprays to the same orchard/grove. This may result in use of less than 10 fl. oz./A on small trees.

### **Use Restrictions – Pears**

- Do not exceed 20 fl. oz. of Epi-Mek 0.15 EC/A per application or 40 fl. oz./A in a growing season.
- Do not make more than 2 applications per growing season.
- Do not apply in less than 40 gals. of water/A.
- If a second application is necessary, do not retreat within 21 days of the first application.
- Do not apply within 28 days of harvest.
- Do not apply by aircraft.

**Peppers (Includes bell pepper, chili pepper, cooking pepper, pimento, sweet pepper): For control of *Liriomyza* leafminers, *Thrips palmi*, spider mites, and broad mites**

Mix with water as indicated below and apply thoroughly by ground or air as a foliar spray to assure good upper and lower leaf coverage. For broad mites and spider mites, apply when mites first appear. For leafminers, apply when adult flies are first observed. For *Thrips palmi*, apply when thrips are first observed. Use 8 fl. oz./A for low to moderate infestations and 16 fl. oz./A for severe infestations. In all cases, repeat applications as necessary to maintain control.

**Peppers**

Pests	fl. oz./A
<i>Liriomyza</i> leafminers Spider mites Broad mites <i>Thrips palmi</i>	8.0-16.0

**Use Restrictions – Peppers**

- Do not exceed 48 fl. oz./A per growing season.
- Do not apply at less than 7-day intervals.
- Do not apply within 7 days of harvest.
- Do not apply in less than 20 gals. of water/A.
- Do not make more than 2 sequential applications.
- For resistance management purposes, do not use on peppers being grown for transplanting.

**Note:** Epi-Mek 0.15 EC may be used without any wetting agent. When necessary to improve the wetting of foliage and to smooth out spray deposits, a nonionic surfactant is recommended.

**Potatoes: For control of Colorado potato beetle, *Liriomyza* leafminers, and spider mites**

Mix with water as indicated below and apply thoroughly by ground or air as a foliar spray to ensure thorough coverage on upper and lower leaf surfaces. Use 8 fl. oz./A for low to moderate infestations and 16 fl. oz./A for severe infestations. The addition of a nonionic surfactant or organosilicone-based surfactant, at the manufacturer's recommended rate is suggested for optimum spider mite and insect control. Insect and spider mite control may be reduced if Epi-Mek 0.15 EC is used in combination with a sticker or binder type product such as Bravo® Weather Stik®.

For Colorado potato beetle, do not make more than 2 applications per crop. Make the first application after approximately 50% of the egg masses have hatched and larvae are present. If 2 applications are made, they should be restricted to a single Colorado potato beetle generation per crop and should not be made at less than 7-day intervals.

For *Liriomyza* leafminers, make the first application when adult flies are first observed. Repeat applications as necessary to maintain control, but not at intervals less than 7 days.

For spider mites, make the first application when mites first appear. Repeat application as necessary to maintain control, but not at intervals less than 7 days.

**Potatoes**

<b>Pests</b>	<b>fl. oz./A</b>
Colorado potato beetles Spider mites <i>Liriomyza</i> leafminers	8.0-16.0

**Use Restrictions – Potatoes**

- Do not exceed 32 fl. oz. of Epi-Mek 0.15 EC/A per crop for spider mite or Colorado potato beetle control.
- Do not exceed 48 fl. oz. of Epi-Mek 0.15 EC/A per crop for leafminer control.
- Do not apply within 14 days of harvest.
- Do not apply in less than 20 gals. of water/A.
- Do not graze or feed treated foliage to livestock.
- Do not make more than 2 sequential applications.

**Strawberries: For control of twospotted spider mites**

Use 16 fl. oz. of Epi-Mek 0.15 EC/A. Make 2 applications 7-10 days apart when mites first appear. Repeat this sequence of application if necessary to maintain control.

**Strawberries**

Pests	fl. oz./A
Twospotted spider mites	16.0

Adjust spray volume and nozzle placement to assure maximum coverage of tops and undersides of leaves.

**Use Restrictions – Strawberries**

- Do not exceed 16 fl. oz./A per application or 64 fl. oz./A in a growing season.
- Do not apply within 3 days of harvest.
- For resistance management purposes, do not use in strawberry nurseries.
- Do not apply in less than 100 gals. of water/A.
- Do not repeat treatment within 21 days of second application.
- Do not apply by aircraft.

**Note:** Epi-Mek 0.15 EC may be used without any wetting agent. When necessary to improve the wetting of foliage and to smooth out spray deposits, a nonionic surfactant is recommended.

**Tomatoes: For control of Colorado potato beetle, *Liriomyza* leafminers, spider mites, russet mites, and tomato pinworm**

Mix with water as indicated below and apply thoroughly by ground or air as a foliar spray to assure good upper and lower leaf coverage. For Colorado potato beetle, apply when newly emerged larvae are present. For russet and spider mites, apply when mite damage first appears. For leafminers, apply when adult flies are first observed. For tomato pinworm, apply when larvae are first observed. In all cases, repeat applications as necessary to maintain control. Use 8 fl. oz./A for low to moderate infestations and 16 fl. oz./A for severe infestations.

**Tomatoes**

<b>Pests</b>	<b>fl. oz./A</b>
Colorado potato beetles <i>Liriomyza</i> leafminers Spider mites Tomato russet mite	8.0-16.0
Tomato pinworm	16.0

**Use Restrictions – Tomatoes**

- Do not exceed 48 fl. oz./A per growing season.
- Do not apply at less than 7-day intervals.
- Do not apply within 7 days of harvest.
- Do not apply in less than 20 gals. of water/A.
- Do not make more than 2 sequential sequential applications.
- For resistance management purposes, do not use on tomatoes being grown for transplanting.

**Note:** Epi-Mek 0.15 EC may be used without any wetting agent. When necessary to improve the wetting of foliage and to smooth out spray deposits, a nonionic surfactant is recommended.

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**STORAGE AND DISPOSAL**

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Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Do not reuse empty container.

**Storage**

Store in a tightly closed container in a cool, dry place.

**Pesticide Disposal**

Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

**Container Disposal**

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures allowed by state and local authorities.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes.

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U.S. Patent No. 4,310,519

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For non-emergency (e.g. current product information) call  
Syngenta Crop Protection at 1-800-334-9481.

Syngenta Crop Protection, Inc.  
Greensboro, North Carolina 27409  
[www.syngenta-us.com](http://www.syngenta-us.com)

SCP 1154A-M(draft global formula 10-14-04)

EPI MEK 0.15 EC 1154A-M(Draft global formula 10-1-14-04)clean-lg-10-14-04  
000100-01154.20041014.globalformula.pdf



(Container Label)

**RESTRICTED USE PESTICIDE**

TOXIC TO FISH, MAMMALS, AND AQUATIC ORGANISMS  
FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR  
PERSONS UNDER THEIR DIRECT SUPERVISION, AND ONLY FOR THOSE USES  
COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

Epi-Mek® 0.15 EC

Miticide/Insecticide

Active Ingredient:

Abamectin <sup>1</sup> .....	1.84.%*
Other Ingredients:	98.16%
Total:	100.00%

<sup>1</sup>CAS No. 65195-56-4 and No. 65195-55-3  
Contains petroleum distillate  
\*1 gal. contains 0.15 lb. abamectin

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

See directions for use in attached booklet.

**AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

EPA Reg. No. 100-1154

EPA Est. XXXX

SCP 1154A-M(DRAFT global formula 10-14-04)

Net Contents

**Precautionary Statements****Hazards to Humans and Domestic Animals****CAUTION**

Harmful if absorbed through skin, inhaled, or swallowed. Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with skin, eyes or clothing. Washing hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco will reduce exposure. Removing and washing contaminated clothing before reuse may reduce exposure.

<b>FIRST AID</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Immediately call poison control center or doctor immediately for treatment advice.</li> <li>• Do not give <b>any</b> liquid to the person.</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>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>

**NOTE TO PHYSICIAN**

Contains petroleum distillate. Vomiting may cause an aspiration pneumonia hazard. Early signs of intoxication include dilation of pupils, muscular incoordination, and muscular tremors. Toxicity following accidental ingestion of this product can be minimized by early administration of chemical adsorbents (e.g., activated charcoal).

If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parental fluid replacement therapy should be given, along with other required supportive measures (such as maintenance of blood pressure levels and proper respiratory functionality) as indicated by clinical signs, symptoms, and measurements.

In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since abamectin is believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid) in patients with potentially toxic abamectin exposure.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**HOT LINE NUMBER**

For 24-Hour Medical Emergency Assistance (Human or Animal)  
Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident)

Call

**1-800-888-8372**

**Refer to booklet for PPE**

**Environmental Hazards**

This pesticide is toxic to fish and wildlife. 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 apply when weather conditions favor drift from target areas. Do not contaminate water when disposing of equipment wash water or rinsate. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

Use of this product may pose a risk to threatened and endangered species of fish, amphibians, crustaceans (including fresh water shrimp), and insects. All use of this product in the state of California should comply with the recommendations of the California Endangered Species Project. Before using this product in California, consult with your county agriculture commissioner to determine use limitations that apply in your area.

**Container Disposal**

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures allowed by state and local authorities.

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

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SCP 1154A-M(DRAFT global formula 10-14-04)

EPI MEK 0.15 EC 1154A-M(Draft global formula 10-1-14-04)-lg-10-14-04  
000100-01154.20041014.globalformula.pdf