STATE OF HAWAII
Department of Agriculture
ACCEPTED
LICENSE NO. 9833.267

RESTRICTED USE PESTICIDE

Toxic to fish 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.

ETHOS™ LFR®

INSECTICIDE / FUNGICIDE

For soil insect pests and soilborne/seedling disease control and plant health in corn (all types) by mixing directly with liquid fertilizer using at-plant (T-band or in-furrow) applications.

EPA Reg. No. 279-3478 **EPA Est.279-NY-1**

ACTIVE INGREDIENTS:	By Wt.
Bifenthrin*	14.4%
Pyraclostrobin: (carbamic acid, [2-[[[1-(4-chlorophenyl)-1H-pyrazol-3-yl]oxy]methyl] phenyl]methoxy-, methyl ster)	7.2%
Other Ingredients	78.4%
Total:	100.0%

*Cis isomers 97% minimum, trans isomers 3% maximum
This product contains 1.33 pounds bifenthrin and 0.67 pound pyraclostrobin active ingredients per gallon.

LFR® Liquid Fertilizer Ready Technology

KEEP OUT OF REACH OF CHILDREN

WARNING
AVISO

This label must be in the possession of the user at the time of application.

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.)

Sold By

FMC

FMC Corporation
Agricultural Products Group
1735 Market Street
Philadelphia PA 19103

NET CONTENTS: 2.5 Gallons

12-30-15

GROUP	3	INSECTICIDE
GROUP	11	FUNGICIDE

FIRST AID

If Swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If on Skin	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 – 20 minutes. • Call a poison control center or doctor for treatment advice.
If in Eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.

HOTLINE 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 1-800-331-3148 for emergency medical treatment information.

NOTE TO PHYSICIAN

This product contains a pyrethroid. If large amounts have been ingested, the stomach and intestines should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

Warning

May be fatal if swallowed. Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

Personal Protective Equipment (PPE):
Mixers, Loaders, Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material (such as nitrile, butyl, neoprene and/or barrier laminate)
- Shoes plus socks
- Protective eyewear (goggles, face shield, or safety glasses)

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

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove clothing/PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Engineering Controls Statement

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.

Environmental Hazards

This pesticide is extremely toxic to fish and aquatic invertebrates. Use with care when applying in areas adjacent to any body of water. 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 make applications when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

This product may contaminate water through drift of spray in wind. This product has a potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecast to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

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 while bees are foraging in the treatment area.

The use of bifenthrin is prohibited in areas that may result in exposure of endangered species to bifenthrin. Prior to use in a particular county contact the local extension service for procedures and precautions to use to protect endangered species.

Groundwater Advisory

The chemical pyraclostrobin has properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

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, Chemical-resistant gloves (made of any waterproof material), and Shoes plus socks.

STORAGE AND DISPOSAL

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

Pesticide Storage

Store in the original container only in a dry, temperature-controlled, and secure place. Carefully open containers. After partial use, replace lids and close tightly. Keep containers closed when not in use. Do not store near food or feed.

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. **Call CHEMTREC (Transportation and Spills) at 1-800-424-9300**

Pesticide Disposal

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative of the nearest EPA Regional Office for guidance.

Container Disposal

U-Turn® Container: Do not rinse container. Do not empty remaining formulated product. Do not break seals. Return intact to point of purchase.

Metal or Plastic Container: Non-refillable container (in sizes 5 gallons or less) - Do not reuse or refill this container. Triple rinse as follows: Empty the remaining contents into application equipment or mix tank and drain for 10 seconds after flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds, pour rinsate into application equipment or mix tank or store rinsate for later use or disposal. Drain for 10 seconds after flow begins to drip. Repeat this procedure two more times Then offer for recycling if available, or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Do not cut or weld metal containers.

Non-refillable container (in sizes greater than 5 gallons) - Do not reuse or refill this container. Triple rinse or pressure rinse. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip back and forth several times. Turn the container over onto its other end and tip back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Returnable/Refillable Containers (if other than U-Turn Container): Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning 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 clean the container before final disposal, empty the remaining contents into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

Returnable/Non-refillable Container: Do not rinse container. Do not empty remaining formulated product.Return intact to point of purchase. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. To clean the container before final disposal, empty the remaining contents into application equipment or mix tank or rinsate collection system. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or dispose of container in compliance with state and local regulations.

In Case of Emergency

In case of transportation or spill emergency, call:

- CHEMTREC 1-800-424-9300

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- FMC 1-800-331-3148

Steps to be taken in case material is released or spilled:

- In case of spill on floor or paved surfaces, mop and remove to chemical waste storage area until proper disposal can be made if product cannot be used according to label.
- Dike and contain the spill with inert material (sand, earth, etc.) and

transfer liquid and solid diking material to separate containers for disposal.

- Remove contaminated clothing and wash affected skin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

Product Information

Ethos LFR insecticide/fungicide is a liquid concentrate insecticide and fungicide that contains 1.33 pounds of bifenthrin and 0.67 pound pyraclostrobin active ingredients per gallon. Ethos LFR insecticide/fungicide can be mixed directly with liquid fertilizer or water. Bifenthrin is a pyrethroid insecticide and pyraclostrobin is a member of the strobilurin class of chemistry derived from a natural antifungal substance. Preventive applications optimize disease control, resulting in improved plant health. The increase in plant health comes from the combined effect of disease control (including fungal diseases listed in the Rates for Insect and Disease Control in Corn table on this label), improved growth efficiency, and improved stress tolerance. Overall increased plant health may result in an improvement in crop growth and crop quality as well as increased crop yields.

Information regarding the contents and levels of metals in this product is available on the Internet at http://www.aapfco.org/metals.htm.

Mode of Action

Bifenthrin is classified as a sodium channel modulator by the US EPA and Canada PMRA and is a member of Group 3 insecticides according to the Insecticde Resistance Action Committee classification scheme.

Pyraclostrobin belongs to the group of respiration inhibitors classified by the US EPA and Canada PMRA as quinone outside inhibitors (QoI) or target site of action Group 11 fungicides.

Resistance Management

Some insects and diseases are known to develop resistance to products with the same chemical class used repeatedly for control. Ethos LFR insecticide/fungicide contains a Group 3 insecticide and a Group 11 fungicide. Although insecticide and fungicide resistance cannot be predicted, a general rule to reduce the onset of resistance is to not consecutively and repeatedly apply Group 3 insecticides and Group 11 fungicides during a growing season for control of particular insects and diseases, respectively. Consult your local or state agricultural authorities or your FMC representative for more specific details on insect resistance management strategies.

If resistance to this product develops in your area, this product, or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant population may be present. If you experience difficulty with control and resistance is a reasonable cause, immediately consult your local FMC representative or agricultural advisor for the best alternative method of control for your area.

Resistance Management Advisory

The following recommendations may delay the development of resistance:

1. Tank mixtures for t-band or in furrow - Use tank mixtures with effective insecticides/fungicides from different target site of action groups that are registered/permitted for the same use and that are effective against insects and/or diseases of concern. Use at least the minimum labeled rates of each insecticide/fungicide in the tank mix.

2. IPM - Integrate Ethos LFR insecticide/fungicide into an overall insect and disease management program. Follow cultural practices known to reduce insect and disease development. Consult your local extension specialist, certified crop advisor and/or FMC representative for additional IPM strategies established for your area.

3. Monitoring - Monitor efficacy of all insecticides/fungicides used in the disease management program against the targeted pests and record other factors that may influence product performance. If a Group 3 target site insecticide or a Group 11 target site fungicide appears to be less effective against pests in controlling a particular insect or disease than it did previously, contact a FMC representative, local extension specialist, or certified crop advisor for further investigation.

Mixing Instructions

Shake well before using.

Maintain a minimum distance of 25 feet between the mixing and loading area and potential surface to groundwater conduits such as field sumps, uncased well heads, sinkholes, and field drains.

Fill the tank one-half full with liquid fertilizer or water and begin spray tank agitation. Add the proper amount of Ethos LFR insecticide/fungicide, and then add the rest of the fertilizer or water. Maintain agitation until the mixture has been applied.

Agitate the Ethos LFR insecticide/fungicide spray solutions in nurse tanks prior to moving the solution to the spray system.

Avoid letting the tank mixture set overnight, but if this occurs agitate tank mixture prior to application.

Application Instructions

Apply as a 5 to 7 inch band (T-band) over an open furrow, or in-furrow before the seed is covered. Apply in combination with a minimum of 3 gallons per acre of seed safe starter fertilizer or water. Higher carrier volumes will improve insect/disease control.

Rate per 1000 row feet is dependent on the crop row spacing. The rate of application is variable according to insect and disease pressure, timing of treatments and field scouting. Use lower listed rates under light to moderate insect and disease conditions, and higher listed rates under heavier insect and disease pressure. In arid climates application rates are generally higher.

Cleaning Spray Equipment

Spraying equipment must be cleaned thoroughly before and after applying this product, particularly if a product with the potential to injure crops was used prior to Ethos LFR insecticide/fungicide.

Restrictions and Limitations

- Do not apply this product through any type of irrigation system.
- Cultivation within 10 feet of a water body is prohibited to allow for the growth of a vegetative filter strip.
- In New York State this product may not be applied within 100 feet (using ground equipment) of coastal marshes or streams that drain into coastal marshes.
- Do not apply more than 19 fluid ounces of product per acre as an at-plant application.
- Do not apply more than 1.18 pounds pyraclostrobin active ingredient per acre per year (season) including at-plant and foliar applications of this and other pyraclostrobin containing products.
- Do not apply more than 0.2 pound bifenthrin active ingredient per acre from all bifenthrin containing products used as an at-plant application.
- Do not apply more than a total of 0.2 pound pyraclostrobin active ingredient per acre from all pyraclostrobin containing products used as an at-plant application.
- For field corn - Do not apply more than 0.3 pound bifenthrin active ingredient per acre per year including pre-plant incorporated, at-plant, pre-emergence, and foliar applications of this and other bifenthrin products.
- For sweet corn - Do not apply more than 0.2 pound bifenthrin active ingredient per acre per year including pre-plant incorporated, at-plant, pre-emergence, and foliar applications of this and other bifenthrin products.

Rotational Crops

Plant back restrictions are determined by the crop.

Crops that have existing tolerances for both bifenthrin and pyraclostrobin may be rotated at any time.

Crops that have existing tolerances for bifenthrin but not pyraclostrobin can be rotated 14 days following the final application of Ethos LFR insecticide/fungicide.

Crops that have existing tolerances for pyraclostrobin but not bifenthrin can be rotated 30 days following the final application of Ethos LFR insecticide/fungicide.

Buffer Zones

Vegetative Buffer Zones

Construct and maintain a minimum 10-foot-wide vegetative filter strip of grass or other permanent vegetation between the field edge and down gradient aquatic habitat (such as, but not limited to, lakes; reservoirs; rivers; permanent streams; marshes or natural ponds; estuaries; and commercial fish farm ponds).

Only apply products containing bifenthrin onto fields where a maintained vegetative buffer strip of at least 10 feet exists between the field and down gradient aquatic habitat.

For guidance, refer to the following publication for information on constructing and maintaining effective buffers: Conservation Buffers to Reduce Pesticide Losses. Natural Resources Conservation Services. USDA, NRCS. 2000. Fort Worth, Texas. 21pp. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_023819.pdf.

Buffer Zone for Ground Application - Do not apply this product within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, and commercial fish farm ponds.

Rates for Insect and Disease Control in Corn (Field Corn, Popcorn, Sweet Corn, and Seed Production Corn)

Insects	Soilborne/Seedling Diseases	USE RATE		
		Fluid oz/1000 Linear ft.	Fluid oz/acre (30" row)*	Pound ai/acre
Army cutworm Armyworm species Billbug Corn Flea beetle Chinch bug Corn rootworm larvae (Northern, Southern and Western) Cutworm species Garden symphylan Grape colaspis Grubs Imported fire ant Root aphids Seed corn beetle Seed corn maggot Southern corn leaf beetle Stalkborer Sugar cane beetle Thrips True armyworm Wireworm	Aids in control of: Rhizoctonia seed and seedling rot (Rhizoctonia solani)	0.49 – 1.09	8.5 – 19	0.13 (0.09 bifenthrin + 0.04 pyraclostrobin) to 0.3 (0.2 bifenthrin + 0.1 pyraclostrobin)

Heavy Corn Rootworm Pressure Management Program: In areas where large corn rootworm populations are present, a multi-approach system may be needed for optimal pest management. However, if the population level is not known and if a corn rootworm adult scouting program along with threshold adult control measures were not completed during the previous growing season, then utilize a rate of 9.5 fl oz/A (0.55 fl oz/1000 ft at 30 inch row spacing) or higher.

When *Rhizoctonia solani* seedling disease pressure is expected to be severe or if the field has a history of seedling diseases, use Ethos LFR insecticide/fungicide at the highest listed rate and/or tank mix with a fungicide with a different mode of action for optimal control.

*See Conversion Table for additional row spacings.

Conversion Table

Ethos LFR insecticide/fungicide Required Per Acre for Various Row Spacings			
Row Spacing (inches)	Linear row ft/acre	0.49 fl oz/1000 ft	1.09fl oz/1000 ft
	Conversion fl oz/1000 linear ft to fl oz/acre		
15	34,848 ft	17 fl oz/A	NA[1]
20	26,136 ft	12.8 fl oz/A	NA[2]
30	17,424 ft	8.5 fl oz/A	19 fl oz/A
36	14,520 ft	NA[3]	15.8 fl oz/A
Twin Row	34,848 ft	17 fl oz/A	NA[1]

[1] For 19 fl oz/A rate in 15 inch or twin row spacings, use 0.55 fl oz/1000 ft
[2] For 19 fl oz/A rate in 20 inch row spacings, use 0.72 fl oz/1000 ft
[3] For 8.5 fl oz/A rate in 36 inch row spacings, use 0.58 fl oz/1000 ft

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 must 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 beyond the control or FMC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold FMC and Seller harmless for any claims relating to such factors.

Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the Directions for Use when used in accordance with the directions under normal conditions of use. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, FMC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, NOR ANY OTHER EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE SELECTION, PURCHASE, OR USE OF THIS PRODUCT. Any warranties, express or implied, having been made are inapplicable if this product has been contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to (or beyond the control of) seller or FMC, and buyer assumes the risk of any such use.

To the extent consistent with applicable law, FMC or seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF FMC 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 FMC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

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