

# Specimen Label

ETHABOXAM

GROUP

22

FUNGICIDE



# Lumiante®

## FUNGICIDE SEED TREATMENT

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**A FUNGICIDE SEED TREATMENT PRODUCT PROVIDING SYSTEMIC FUNGICIDE PROTECTION AGAINST SEED AND SEEDLING DISEASES CAUSED BY *PYTHIUM* AND *PHYTOPHTHORA* SPECIES**

Active Ingredient	By Wt
Ethaboxam*	34.2%
Other Ingredients	65.8%
Total	100.0%

\*(RS)-N-[cyano(2-thienyl)methyl]-4-ethyl-2-(ethylamino)thiazole-5-carboxamide

Lumiante™ contains 3.2 lb ethaboxam per gallon.

### PRECAUTIONARY STATEMENTS

EPA Reg No. 59639-186-352

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

#### 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 800-992-5994 for emergency medical treatment information.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

**Workers loading product, treating seed, and conducting maintenance and calibration of the treater must wear:** long-sleeved shirt, long pants, socks and shoes, and chemical-resistant gloves made of any waterproof material.

**Workers involved with handling treated seed (such as baggers, sewers, and bag stackers) must wear:** long-sleeved shirt, long pants, socks and shoes.

**Workers who load and plant treated seed must wear:** long-sleeved shirt, long pants, socks and shoes, and chemical-resistant gloves made of any waterproof material when handling treated seed.

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 PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### ENVIRONMENTAL HAZARDS

This pesticide is toxic to aquatic invertebrates, oysters, and shrimp. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate. Do not apply where runoff is likely to occur. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Apply this product only as specified on label.

#### Groundwater Advisory

This chemical 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.

#### Surface Water Advisory

This product may impact surface water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several days after application. 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 loading of ethaboxam from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

#### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.**

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 State or Tribal 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 (WPS).

Do not enter or allow worker entry into treated areas during the Restricted Entry Interval (REI) of 12 hours.

*Exception:* Once the seeds are planted in soil, the WPS, under certain circumstances, allows workers to enter the treated area without restriction if there will be no worker contact with the soil subsurface or treated seed. PPE required for early entry to treated areas that is permitted under the WPS and that involves contact with anything that has been treated, such as plants, soil, or water, is: long-sleeved shirt and long pants, socks and shoes, and chemical-resistant gloves made of any waterproof material.

### APPLICATION INSTRUCTIONS

#### RESTRICTIONS

Lumiante must be used only in accordance with use instructions on this label utilizing mechanical, slurry or mist-type seed treating equipment, provided that the equipment can be calibrated to apply the product accurately and uniformly to seed. This product is for both commercial and on-farm application. Do not apply this product in a hopper-box or planter-box at planting time. Always mix product thoroughly before use. Excess treated seed may be used for ethanol production only if (1) by-products are not used for livestock feed and (2) no measurable residues of pesticides remain in the ethanol by-products that are used in agronomic practice.

Treated seed must be planted into the soil at a minimum depth of 0.5 inch.

As stated by regulations specified in 40 CFR 153.155, all seed treated with Lumiante must be colored with an EPA-approved dye or colorant to visually distinguish seed is treated with a pesticide. It is mandatory that such dye or colorant be added into the slurry mixture containing Lumiante prior to application. This regulation is necessary to prevent treated seed from accidental use as a food for man or feed for animals.

**MODE OF ACTION**

Lumianta contains ethaboxam, which is a Group 22 fungicide as classified by the Fungicide Resistance Action Committee (FRAC). Its mode of action is the inhibition of cell division.

**RESISTANCE MANAGEMENT**

For resistance management, please note that Lumianta contains ethaboxam, a **Group 22** fungicide. Any fungal population may contain individuals naturally resistant to Lumianta and other **Group 22** fungicides. A gradual or total loss of pest control may occur over time if these fungicides are used repeatedly in the same fields. Appropriate resistance management strategies are to be followed.

To delay fungicide resistance, take one or more of the following steps:

- Rotate the use of Lumianta or other **Group 22** fungicides within a growing season sequence with different groups that control the same pathogens.
- Use tank mixtures with fungicides from a different group that are equally effective on the target pest when such use is permitted. Use at least the minimum application rate as labeled by the manufacturer.
- Adopt an integrated disease management program for fungicide use that includes scouting, uses historical information related to pesticide use, and crop rotation, and which considers host plant resistance, impact of environmental conditions on disease development, disease thresholds, as well as cultural, biological, and other chemical control practices.
- Where possible, make use of predictive disease models to effectively plan fungicide applications. Note that using predictive models alone is not enough to manage resistance.
- Monitor treated fungal populations for resistance development.
- Contact your local extension specialist or certified crop advisor for any additional pesticide resistance management and/or IPM recommendations for specific crop and pathogens.
- For further information or to report suspected resistance contact Corteva Agriscience at 800-258-3033. You can also contact your pesticide distributor or university extension specialist to report resistance. Corteva Agriscience encourages responsible product stewardship to ensure effective long-term control of the fungal diseases on this label.

**SEED QUALITY AND STORAGE OF TREATED SEED**

Seed treatments applied to low vigor or poor quality seed or to mechanically damaged seed may result in loss of seed germination or reduced seedling vigor. To verify seed safety, treat a small portion of seed with the desired slurry mixture (Lumianta alone or in combination with other commercial seed treatment products) prior to treatment of an entire seed lot. Utilize standard seed germination methodologies to determine and verify seed safety. Use proper storage conditions for treated seed. Due to seed quality and seed storage conditions beyond the control of Corteva Agriscience, no claims are made to guarantee the germination of carry-over treated seed.

**SEED BAG TAG**

Seed commercially treated with this product must be labeled in accordance with all applicable requirements of the Federal Seed Act. The user of this product is responsible for ensuring that the seed bag meets all requirements under the Federal Seed Act.

The Federal Seed Act requires that bags containing treated seed be labeled or tagged with the following information:

- This seed has been treated with Lumianta (EPA Reg. No. 59639-186-352) containing ethaboxam.
- Do not use for feed, food, or oil processing.

In addition, the U.S. Environmental Protection Agency requires the following statements on containers of seed treated with Lumianta (ethaboxam):

The following table provides use rates of Lumianta by labeled crop, with disease protection guidelines.

Corn (sweet and field); popcorn; sorghum, grain (milo)	
Disease Protection	Application Rate of Lumianta (fl oz/100 lb seed)
<i>Pythium</i> Seed Decay and Seedling Dieback	0.2 to 0.3 (5 to 7.5 g ai/100 kg seed) <b>Field Corn:</b> To deliver 5 g ai/100 kg seed, apply 0.1 fl oz per 80,000 seed (equals 0.0141 mg ai/seed) based on 1600 seed/lb count. <b>Sweet Corn:</b> To deliver 5 g ai/100 kg seed, apply 0.064 fl oz per 100,000 seed (equals 0.0072 mg ai/seed) based on 3150 seed/lb count. <b>Popcorn:</b> To deliver 5 g ai/100 kg seed, apply 0.066 fl oz per 100,000 seed (equals 0.0074 mg ai/seed) based on 3061 seed/lb count. <b>Sorghum:</b> To deliver 5 g ai/100 kg seed, apply 0.011 fl oz per 100,000 seed (equals 0.0012 mg ai/seed) based on 18,000 seed/lb count.

The maximum yearly total application rate for ethaboxam on corn (except sorghum) is 0.0025 lb ai per acre and 0.0009 lb ai per acre on sorghum.

- Store away from feeds and other foodstuffs.
- Wear long-sleeved shirt, long pants, shoes and socks, and chemical-resistant gloves made of any waterproof material when handling treated seed.
- Dispose of all excess treated seed. Leftover treated seed may be double-sown around the headland or buried away from water sources in accordance with local requirements. Do not contaminate water bodies when disposing of planting equipment washwaters or rinsate.
- Dispose of seed packaging in accordance with local requirements.
- Treated seeds exposed on soil surface may be hazardous to wildlife. Cover or collect treated seeds spilled during loading.
- Treated seed must be planted into the soil at a minimum depth of 0.5 inch.
- Excess seed may be used for ethanol production only if (1) by-products are not used for livestock feed and (2) no measurable residues of pesticide remain in ethanol by-products that are used in agronomic practices.
- Groundwater Advisory: This chemical 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.
- Surface Water Advisory: This product may impact surface water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several days after application. 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 loading of ethaboxam from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.
- DO NOT apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply where runoff is likely to occur.
- This seed has been treated with   X   lb of ethaboxam per 100 lb seed.
- DO NOT apply more than 0.0025 lb of ethaboxam active ingredient to corn and 0.0009 lb of ethaboxam active ingredient to sorghum per acre per calendar year.
- DO NOT apply more than 0.0251 lb of ethaboxam active ingredient per acre per calendar year to soybean.

**PRODUCT INFORMATION**

Lumianta is a systemic fungicide seed protection product for use on a wide range of crops. The active ingredient, ethaboxam, provides protection against Oomycetes including *Pythium* spp. and *Phytophthora* spp. causing seed decay, seedling dieback, and root rot.

For best results, use Lumianta combined with other Oomycete-active seed treatment fungicides, such as metalaxyl or mefenoxam, to broaden the spectrum of activity. In addition, use with a broad-spectrum seed treatment fungicide(s) having activity against *Rhizoctonia solani* and other fungal pathogens inciting seed and seedling disease.

**APPLICATION DIRECTIONS**

Accurate application of Lumianta to seed is required for best performance. Thoroughly mix Lumianta in the desired seed slurry mixture, prior to application to seed. **Pre-test tank mixtures with other seed treatment products to evaluate formulation compatibility and to ensure proper physical compatibility of products. Follow the most restrictive limitations and precautions on labels of all products used in a seed treatment mixture. Do not tank mix with any products which contain a prohibition on tank mixing.**

<b>Soybean</b>	
<b>Disease Protection</b>	<b>Application Rate of Lumiant® (fl oz/100 lb seed)</b>
<i>Pythium</i> Seed Decay and Seedling Dieback Early Season <i>Phytophthora</i> Root Rot	0.3 to 0.6 (7.5 to 15 g ai/100 kg seed)
<b>Soybean:</b> To deliver 7.5 g ai/100 kg seed, apply 0.15 fl oz per 140,000 seed (equals 0.0121 mg ai/seed) based on 2800 seed/lb count.	
The maximum yearly total application rate for ethaboxam on soybean is 0.0251 lb ai per acre.	

### STORAGE AND DISPOSAL

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

#### PESTICIDE STORAGE

Keep pesticide in original container.  
 Store in a dry place away from excessive heat.  
 Do not store near food or feed.  
 Do not put pesticide into food or drink containers.  
 Not for use or storage around the home.  
 To close package, replace and tighten cap to form an airtight seal.

#### PESTICIDE DISPOSAL

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

#### CONTAINER HANDLING

##### For containers equal to or less than 5 gallons:

Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Add water – at least 2% of the container volume, and up to 1/3 of the volume of water needed to make the proper slurry composition with a maximum of 1/4 of the container volume – and recap. Shake for 30 seconds. Pour rinsate into a rinsate collection system for disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling, if available; otherwise dispose of in a sanitary landfill or other procedures allowed by State and local authorities.

##### For rigid nonrefillable containers greater than 5 gal or 50 lb:

Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Add water – at least 2% of the container volume, and up to 1/3 of the volume of water needed to make the proper slurry composition with a maximum of 1/4 of the container volume. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 60 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into a rinsate collection system for disposal. Repeat this procedure two more times. Offer for recycling, if available; otherwise dispose of in a sanitary landfill or other procedures allowed by State and local authorities.

from the use of this product in any manner not specifically directed by Corteva Agriscience. To the extent consistent with applicable law, all such risks associated with non-directed use shall be assumed by buyer and/or user.

### Limitation of Remedies

To the extent consistent with applicable law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, tort, strict liability, or other legal theories) shall be limited to, at Corteva Agriscience's election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

To the extent consistent with applicable law, Corteva Agriscience shall not be liable for losses or damages resulting from handling or use of this product unless Corteva Agriscience is promptly notified of such loss or damage in writing. To the extent consistent with applicable law, in no case shall Corteva Agriscience be liable for consequential, incidental, or special damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use, and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Corteva Agriscience or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

### COMMERCIAL TANK MIXES

NOTICE: Commercial tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor.

**Read and follow the entire label of each product to be used in the commercial tank mix with this product.**

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**Manufactured for  
 Corteva Agriscience LLC  
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 Indianapolis, IN 46268**

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### Revisions:

- 1 Added soybean.
- 2 Added maximum yearly total rate for corn.
- 3 Added *Phytophthora*.
- 4 Added Hotline Number for emergency contact.
- 5 Revised Application Instructions, Restrictions; added Resistance Management.
- 6 Updated Seed Bag Tag requirements.

### Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent consistent with applicable law, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies.

### Warranty Disclaimer

Corteva Agriscience warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. To the extent consistent with applicable law, Corteva Agriscience MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

### Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Corteva Agriscience or the seller. Corteva Agriscience will not be responsible for losses or damages resulting