



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

JAN 30 2006

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

Mr. Dan Campbell  
Senior Regulatory Product Manager  
Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419

Dear Mr. Campbell:

Subject: Lumax™ Selective Herbicide  
EPA Registration No. 100-1152  
Application and Your Letter Dated December 19, 2005,  
Request To Amend Product Registration To:

- o Add the use site: Sweet Corn to the labeling
- o Change broadleaf signal grass from "C to PC" in Table 1
- o Revise Table 2 by adding "Broadleaf signalgrass" and "crabgrass, large"; footnote 2 for these weeds
- o Revise the Rotational Crops Section to caution that rotating to crops other than corn or sorghum after a June 1<sup>st</sup> application of Lumax may result in crop injury
- o Revise Early Postemergence section in the "Application Procedures" section by removing the redundant phrase: "A maximum of 3.0 qts./A of" to read: "Lumax may be applied ..."
- o Revise the heading "Lumax, Gramoxone Max, Touchdown" in the Lumax Tank Mix combination section to "Burndown Combinations for Reduced Tillage Situations" and revise that section
- o Add a section: "Camix Programs with Glyphosate for Glyphosate Tolerant corn"
- o Add a section: "Camix Programs with Liberty for Liberty Link Corn"
- o Make wording clarifications to the labeling

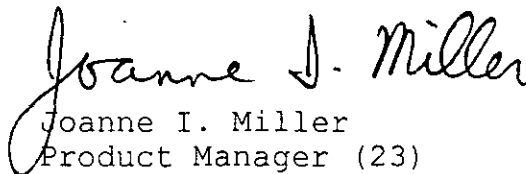
The proposed amendments to the labeling of Lumax® Selective Herbicide as described above and in your letter have been reviewed and found acceptable under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, provided that you:

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1. On page 28, delete the word "planned" that modifies postemergence in the 2<sup>nd</sup> paragraph of the section "Lumax Programs With Glyphosate for Glyphosate Tolerant Corn".
2. On page 29, delete the word "planned" that modifies postemergence in the 2<sup>nd</sup> paragraph of the section "Lumax Programs with Liberty for LibertyLink Corn".
3. Submit one (1) copy of the final printed label prior to your shipment of this pesticide product under the enclosed revised label.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA, section 6 (e). Your release for shipment under this labeling constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records.

Sincerely yours,



Joanne I. Miller  
Product Manager (23)  
Herbicide Branch  
Registration Division (7505C)

Enclosure

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Front Cover  
2.5, 120, 220, 330 Gallon and Bulk Booklet

**RESTRICTED USE PESTICIDE**  
**(GROUND AND SURFACE WATER CONCERNS)**  
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.  
THIS PRODUCT IS A RESTRICTED-USE HERBICIDE DUE TO GROUND AND SURFACE WATER CONCERNS. USERS MUST READ AND FOLLOW ALL PRECAUTIONARY STATEMENTS AND INSTRUCTIONS FOR USE IN ORDER TO MINIMIZE POTENTIAL FOR ATRAZINE TO REACH GROUND AND SURFACE WATER.

Lumax®  
Selective Herbicide

A Preemergence Herbicide for Control of Annual Grass and Broadleaf Weeds in Field Corn, Field Production Seed Corn, Field Silage Corn, Sweet Corn, and Yellow Popcorn

Active Ingredients*:	
S-Metolachlor: (CAS No. 87392-12-9).....	29.40%
Atrazine**: (CAS No. 1912-24-9).....	11.00%
Mesotrione: (CAS No. 104206-82-8).....	2.94%
<u>Other Ingredients:</u>	<u>56.66%</u>
Total:	100.00%

\*Active ingredients per gallon: S-metolachlor 2.68 pounds, Mesotrione 0.268 pounds, and Atrazine 1.0 pound.

\*\*Atrazine with a maximum of 0.4% related triazines.

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-1152

EPA Est. 100-LA-001 [2.5, 120, 220, 330 gallons]

EPA Est. \_\_\_\_\_ [Bulk]



**ACCEPTED**  
**with COMMENTS**  
**In EPA Letter Dated:**  
**JAN 30 2006**

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

100-1152

2.5 gallons  
Net Contents

120 gallons  
Net Contents

220 gallons  
Net Contents

~~330 gallons~~  
Net Contents

\_\_\_\_\_ gallons [bulk]  
Net Contents

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<b>FIRST AID</b>	
<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 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>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 swallowed</b>	<ul style="list-style-type: none"><li>• Call a Poison Control Center or doctor immediately for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<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>	

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**PRECAUTIONARY STATEMENTS**

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**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**CAUTION**

Causes moderate eye injury. Do not get in eyes or on clothing. Avoid contact with skin or clothing. Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse. Wear long-sleeved shirt and long pants, socks plus shoes and gloves. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

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### Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category A on an EPA Chemical-resistant Category Selection Chart.

#### Mixers, Loaders, Applicators and other handlers must wear:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves – Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- Chemical-resistant footwear plus socks
- Chemical-resistant apron when mixing/loading, cleaning up spills, or cleaning equipment, or otherwise exposed to the concentrate.

See engineering controls for additional requirements

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

Aerial application is prohibited.

### Engineering Control Statements

When applicators 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)(5)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Aerial application is prohibited.

### 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 product is toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate. This pesticide contains atrazine, which has been shown to be toxic to aquatic invertebrates. Runoff and drift from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not apply when weather conditions favor drift from treated areas.

### **Ground Water Advisory**

Lumax contains the active ingredients S-metolachlor, mesotrione and atrazine.

Atrazine can travel (seep or leach) through soil and can enter ground water which may be used as drinking water. Atrazine has been found in ground water. Users are advised not to apply atrazine to sand and loamy sand soils where the water table (ground water) is close to the surface and where these soils are very permeable, i.e., well-drained. Your local agricultural agencies can provide further information on the type of soil in your area and the location of ground water.

S-metolachlor has the potential to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

### **Surface Water Advisory**

The active ingredients in this product have the potential to contaminate surface water through ground spray drift. Under some conditions, the active ingredients may also have a high potential for runoff into surface water (primarily via dissolution in runoff water) for several months post-application. These include poorly drained or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow ground water, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlaying tile drainage systems that drain to surface water.

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 runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

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### **Mixing/Loading Instructions**

Care must be taken when using this product to prevent back-siphoning into wells, spills, or improper disposal of excess pesticide, spray mixtures, or rinsates.

Check valves or antisiphoning devices must be used on mixing equipment.

This product must not be mixed/loaded or used within 50 ft. of wells, including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing, or washing to this product into or from pesticide handling or application equipment or containers within 50 ft. of any well are prohibited, unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, and rain water that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain, at a minimum, 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above specified minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site.

Additional State imposed requirements regarding well head setbacks and operational area containment must be observed.

This product must not be mixed or loaded within 50 ft. of perennial or intermittent streams and rivers, natural or impounded lakes and reservoirs. This product may not be applied within 66 ft. of the points where field surface water runoff enters perennial or intermittent streams and rivers or within 200 ft. from the edge of natural or impounded lakes and reservoirs. If this product is applied to highly erodible land, the 66 ft. buffer or setback from runoff entry points must be planted to crop, or seeded with grass or other suitable crop.

### **Tile-Outletted Terraced Fields Containing Standpipes**

One of the following restrictions must be used in applying atrazine to tile-outletted terraced fields containing standpipes:

1. Do not apply this product within 66 ft. of standpipes in tile-outletted terraced fields.
2. Apply this product to the entire tile-outletted terraced field and immediately incorporate it to a depth of 2-3 inches in the entire field.

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3. Apply this product to the entire tile-outletted terraced field under a no-till practice only when a high crop residue management practice is practiced. High crop residue management is described as a crop management practice where little or no crop residue is removed from the field during and after crop harvest.

**Physical and Chemical Hazards**

Do not use or store near heat or open flame.



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

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**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.

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## DIRECTIONS FOR USE

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

ANY USE OF THIS PRODUCT IN AN AREA WHERE USE IS PROHIBITED IS A VIOLATION OF FEDERAL LAW. Before using this product, you must consult the Atrazine Watershed Information Center (AWIC) to determine whether the use of this product is prohibited in your watershed. AWIC can be accessed through [www.atrazine-watershed.info](http://www.atrazine-watershed.info) or 1-866-365-3014. If use of this product is prohibited in your watershed, you may return this product to your point of purchase or contact Syngenta Crop Protection, Inc. for a refund.

Lumax should be used only in accordance with recommendations on this label or in separately published Syngenta supplemental labeling recommendations for this product.

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 24 hours.** Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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 and water, wear:

- Coveralls over short-sleeved shirt and short pants
- Socks and chemical resistant footwear
- Chemical-resistant gloves – Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)

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**FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR WEED CONTROL, CROP INJURY, OR ILLEGAL RESIDUES.**

**Note: Not for sale, use, or distribution in Nassau County or Suffolk County, New York.**

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## **GENERAL INFORMATION**

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Lumax may be used in the culture of field corn, field corn seed corn, and field corn silage. Lumax may also be used in the culture of sweet corn and yellow popcorn, but the application must be made prior to crop emergence, or severe crop injury may occur.

Lumax is a selective herbicide recommended for preemergence use for control of most annual grasses and broadleaf weeds in the corn types described above. Lumax may also be applied early postemergence for the control of broadleaf weeds in field corn (pre-emergence only in sweet corn and yellow popcorn). See Table 1 and 2 for a list of weeds controlled. Lumax will not provide adequate control of most grasses that are emerged at the time of application.

Lumax is a unique combination of the herbicides: S-metolachlor, mesotrione, and atrazine plus the safener Benoxacor. Lumax controls weeds by interfering with normal germination and seedling development. It is recommended for management of the weed species listed in the Tables 1 and 2.

- When tank mixing or sequentially applying atrazine or products containing atrazine with Lumax to corn, do not exceed an application rate of 2.0 pounds active ingredient of atrazine per acre for any single application and the total pounds of atrazine applied (lb. a.i. per acre) must not exceed 2.5 pounds active ingredient per acre per year.
- Maximum broadcast application rates for atrazine in corn must be as follows:
  - If no atrazine was applied prior to corn emergence, apply a maximum of 2.0 lbs. a.i./A broadcast. If a postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 lbs. a.i./A per calendar year.
  - Apply a maximum of 2.0 lbs. a.i./A as a single preemergence application on soils that are not highly erodible or on highly erodible soils (as defined by the Natural Resource Conservation Service) if at least 30% of the soil is covered with plant residues.
  - Apply a maximum of 1.6 lb. a.i./A as a single preemergence application on highly erodible (as defined by the Natural Resource Conservation Service)

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soils if <30% of the surface is covered with plant residues; or 2.0 lbs. a.i./A if only applied postemergence

## USE PRECAUTIONS

Read all label directions before using.

- Do not apply this product through any type of irrigation system.
- Do not apply under conditions which favor runoff or wind erosion of soil containing this product to nontarget areas.
- To prevent off-site movement due to runoff or wind erosion:

Avoid treating powdery dry or light sand soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.

Do not apply to impervious substrates, such as paved or highly compacted surfaces.

Do not use tailwater from the first flood or furrow irrigation of treated fields to treat nontarget crops, unless at least ½ inch of rainfall has occurred between application and the first irrigation.

- Where reference is made to weeds partially controlled, partial control can either mean erratic control from good to poor or consistent control at a level below that generally considered acceptable for commercial weed control.
- Dry weather following preemergence application of Lumax or a Lumax tank mixture may reduce effectiveness. Cultivate if weeds develop in conventional tillage corn.
- Observe all precautions and limitations on the label of each product used in tank mixtures.
- Thoroughly clean sprayer or other application device before using. Dispose of cleaning solution in a responsible manner. Do not use a sprayer or applicator contaminated with other materials, or crop damage or sprayer clogging of the application device may occur.
- This product will not provide consistent control of emerged grass weeds.
- Do not apply more than 3 qts. of Lumax per growing season.
- Do not apply other mesotrione containing products (Camix®, Callisto®, or Lexar®) to ground that has been treated with Lumax in the same season.

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- Do not apply Lumax postemergence (emerged corn) to corn that has received an at-plant application of Counter® insecticide as severe corn injury may occur. Temporary corn injury may occur if Lumax is applied to emerged corn where organophosphate insecticides other than Counter were applied at planting.
- Do not make postemergence (emerged corn) applications of Lumax in a tank mix with any organophosphate or carbamate insecticide, or severe corn injury may occur.
- Do not make a postemergence (emerged corn) application of any organophosphate or carbamate insecticide within 7 days before or 7 days after a Lumax application, or severe corn injury may occur.
- Do not use Lumax on any crop other than field corn (for grain, seed, or silage), sweet corn (preemergence applications only), or yellow popcorn (preemergence applications only).
- Do not use Lumax in the culture of white popcorn or ornamental (Indian) corn or injury may occur.
- Do not contaminate irrigation water used for crops other than field corn or water used for domestic purposes.
- Avoid drift onto adjacent crops.
- Avoid spray overlap, as crop injury may result.
- Do not allow Lumax to contaminate feed or food.
- Do not store Lumax near seeds, fertilizers, or foodstuffs.
- All containers of Lumax must be kept tightly closed when not in use.
- Do not use aerial application to apply Lumax herbicide.
- Do not apply Lumax to sweet corn or yellow popcorn after the crop has emerged or severe crop injury may occur.

Applied according to directions and under normal growing conditions, Lumax will not harm the treated crop. During germination and early stages of growth, extended periods of unusually cold and wet or hot and dry weather, insect or plant disease attack, carryover pesticide residues, the use of certain soil applied systemic insecticides, improperly placed fertilizers or soil insecticides, may weaken crop seedlings. Lumax used under these conditions could result in crop injury.

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## **RESISTANCE MANAGEMENT**

Naturally occurring biotypes of certain broadleaf weed species with resistance to triazines or ALS inhibiting herbicides are known to exist. However, no known resistance to this product exists and there are no known instances of cross resistance between this herbicide and other classes of herbicides. If biotypes of weeds resistant to triazines or ALS inhibitors are present in the field, this herbicide should control them if they are listed in Table 1 and 2.

To help reduce the risk of resistance development to this herbicide product, do not use other mesotrione containing herbicides (Callisto, Camix, or Lexar) in the same season, on the same field, where Lumax has been applied.

## **INTEGRATED PEST (WEED) MANAGEMENT**

Lumax may be integrated into an overall pest management strategy. Practices known to reduce weed development (tillage, crop competition) and herbicide use (weed scouting, proper application timing, banding, and rotations) should be followed wherever possible. Consult local agricultural and weed authorities for additional Integrated Pest Management strategies established for your area.

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## **SOIL ORGANIC MATTER**

The organic matter of the soil on which the application is to be made must be known or determined prior to application. The use-rate of Lumax is based on percent soil organic matter.

## **USE RATES IN ALL TILLAGE SYSTEMS (CONVENTIONAL, REDUCED, AND NO-TILL)**

The soil organic matter content of the field on which Lumax is to be applied must be known. If soil organic matter content is less than 3%, use 2.5 qts. of Lumax per acre. If soil organic matter content is 3% or greater, use 3 qts. of Lumax per acre. Do not apply more than 14 days prior to planting or to field corn higher than 12 inches tall. Lumax is not recommended on soils with greater than 10% organic matter, or poor weed control may result.

## **RATE LIMITATIONS**

Certain states may have established rate limitations within specific geographical areas for the use of atrazine. These more restrictive/protective requirements must be followed. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations.

**Note:** For purposes of calculating total atrazine active ingredient applied, Lumax contains 1.0 lb. a.i. Atrazine plus relateds per gallon.

## **REDUCED AND NO-TILL SYSTEMS**

Lumax may be used in reduced and no-till systems. The highest levels of control will be obtained when applications are made as close to planting as possible. It is recommended that a burndown herbicide such as Gramoxone® Max, Touchdown® brands, Roundup brands, or 2,4-D be tank mixed with Lumax in reduced or no-till systems if weeds are present at application and the corn has not yet emerged.

## **WEEDS CONTROLLED**

Lumax applied as directed in this label will control or suppress the weeds listed in Tables 1 and 2. Additional weeds may be controlled with tank mixes. See the **Lumax Tank Mix Combinations** section for recommended tank mix combinations. Always consult the tank mix product labels for specific rates and use directions.

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**Table 1. Weeds Controlled or Partially Controlled by Preemergence Applications of Lumax**

Common Name	Weed Type <sup>1</sup>	Scientific Name	C = Control PC = Partial Control
Barnyardgrass	G	<i>Echinochloa crus-galli</i>	C
Bristly starbur	G	<i>Acanthospermum hispidum</i>	C
Broadleaf signalgrass	G	<i>Brachiaria platyphylla</i>	PC
Browntop panicum	G	<i>Panicum fasciculatum</i>	C
Buffalobur	B	<i>Solanum rostratum</i>	C
Carpetweed	B	<i>Mollugo verticillata</i>	C
Cocklebur, common	B	<i>Xanthium strumarium</i>	PC
Crabgrass	G	<i>Digitaria spp.</i>	C
Crowfootgrass	G	<i>Dactyloctenium aegyptium</i>	C
Fall panicum	G	<i>Panicum dichotomiflorum</i>	C
Field sandbur	G	<i>Cenchrus incertus</i>	PC
Florida beggarweed	B	<i>Desmodium tortuosum</i>	C
Florida pusley	B	<i>Richardia scabra</i>	C
Foxtail millet	G	<i>Setaria italica</i>	C
Galinsoga	B	<i>Galinsoga parviflora</i>	C
Giant foxtail	G	<i>Setaria faberi</i>	C
Goosegrass	G	<i>Eleusine indica</i>	C
Green foxtail	G	<i>Setaria viridis</i>	C
Hemp sesbania	B	<i>Sesbania exaltata</i>	C
Jimsonweed	B	<i>Datura stramonium</i>	C
Kochia	B	<i>Kochia scoparia</i>	C
Lambsquarters, common	B	<i>Chenopodium album</i>	C



Common Name	Weed Type <sup>1</sup>	Scientific Name	C = Control PC = Partial Control
Morningglory, ivyleaf/entireleaf	B	<i>Ipomoea hederacea</i> .	PC
Narrowleaf signalgrass	G	<i>Brachiaria piligera</i>	C
Nightshade, black	B	<i>Solanum nigrum</i>	C
Nightshade, eastern black	B	<i>Solanum ptycanthum</i>	C
Nightshade, hairy	B	<i>Solanum sarrachoides</i>	C
Palmer amaranth	B	<i>Amaranthus palmeri</i>	C
Powell amaranth	B	<i>Amaranthus powellii</i>	C
Prairie cupgrass	G	<i>Eriochloa contracta</i>	C
Prickly sida	B	<i>Sida spinosa</i>	PC
Purslane, common	B	<i>Portulaca oleracea</i>	C
Ragweed, common	B	<i>Ambrosia artemisiifolia</i>	PC
Ragweed, giant*	B	<i>Ambrosia trifida</i>	PC
Red rice	G	<i>Oryza sativa</i>	C
Red sprangletop	G	<i>Leptochloa filiformis</i>	C
Redroot pigweed	B	<i>Amaranthus retroflexus</i>	C
Robust foxtail (purple, white)	G	<i>Setaria</i> spp.	C
Seedling johnsongrass	G	<i>Sorghum halepense</i>	PC
Shattercane	G	<i>Sorghum bicolor</i>	PC
Smartweed, ladythumb	B	<i>Polygonum persicaria</i>	C
Smartweed, Pennsylvania	B	<i>Polygonum pennsylvanicum</i>	C
Smooth pigweed	B	<i>Amaranthus hybridus</i>	C
Southwestern cupgrass	G	<i>Eriochloa gracilis</i>	C
Sunflower, common	B	<i>Helianthus annus</i>	PC

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Common Name	Weed Type <sup>1</sup>	Scientific Name	C = Control PC = Partial Control
Texas panicum	G	<i>Panicum texanum</i>	PC
Velvetleaf	B	<i>Abutilon theophrasti</i>	C
Venice mallow	B	<i>Hibiscus trionum</i>	C
Waterhemp, common	B	<i>Amaranthus tuberculatus</i>	C
Waterhemp, tall	B	<i>Amaranthus rudis</i>	C
Wild buckwheat	B	<i>Polygonum convolvulus</i>	C
Wild mustard	B	<i>Brassica kaber</i>	C
Wild proso millet	G	<i>Panicum miliaceum</i>	PC
Wild radish	B	<i>Raphanus raphanistrum</i>	C
Witchgrass	G	<i>Panicum capillare</i>	C
Woolly cupgrass	G	<i>Eriochloa villosa</i>	PC
Yellow foxtail	G	<i>Setaria glauca</i>	C
Yellow nutsedge	S	<i>Cyperus esculentus</i>	C

<sup>1</sup>B=Broadleaf, G=Grass, S=Sedge

Thoroughly till soil or make an application of a burndown herbicide to destroy germinating and emerged weeds. Plant crop into moist soil immediately after tillage.

If a significant rainfall does not occur within 7 days after application, weed control may be decreased. If irrigation is available, apply 1/2 to 1 inch of water. If irrigation is not available, a uniform shallow cultivation is recommended as soon as weeds emerge.

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**Table 2. Weeds Controlled or Partially Controlled by Early Postemergence Applications of Lumax**

Common Name	Weed Type <sup>1</sup>	Scientific Name	C = Control PC = Partial Control
Broadleaf signalgrass	G	<i>Brachiaria platyphylla</i>	C <sup>2</sup>
Buffalobur	B	<i>Solanum rostratum</i>	C
Carpetweed	B	<i>Mollugo verticillata</i>	C
Cocklebur, common	B	<i>Xanthium strumarium</i>	C
Crabgrass, large	G	<i>Digitaria sanguinalis</i>	C <sup>2</sup>
Dandelion	B	<i>Taraxacum officinale</i> WEBER	PC
Florida beggarweed	B	<i>Desmodium tortuosum</i>	C
Florida pusley	B	<i>Richardia scabra</i>	C
Galinsoga	B	<i>Galinsoga parviflora</i>	C
Hemp	B	<i>Cannabis sativa</i> L.	C
Hemp sesbania	B	<i>Sesbania exaltata</i>	C
Horsenettle	B	<i>Solanum carolinense</i>	C
Horseweed	B	<i>Conyza canadensis</i>	C
Jimsonweed	B	<i>Datura stramonium</i>	C
Kochia	B	<i>Kochia scoparia</i>	C
Lambsquarters, common	B	<i>Chenopodium album</i>	C
Marestail	B	<i>Hippuris vulgaris</i> L.	C
Morningglory, ivyleaf/entireleaf	B	<i>Ipomoea hederacea</i> .	C
Nightshade, black	B	<i>Solanum nigrum</i>	C
Nightshade, eastern black	B	<i>Solanum ptycanthum</i>	C
Nightshade, hairy	B	<i>Solanum sarachoides</i>	C

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Common Name	Weed Type <sup>1</sup>	Scientific Name	C = Control PC = Partial Control
Palmer amaranth	B	<i>Amaranthus palmeri</i>	C
Powell amaranth	B	<i>Amaranthus powellii</i>	C
Pokeweed	B	<i>Phytolacca americana</i>	C
Potatoes, volunteer	B	<i>Solanum Spp</i>	C
Prickly sida	B	<i>Sida spinosa</i>	C
Purslane, common	B	<i>Portulaca oleracea</i>	C
Ragweed, common	B	<i>Ambrosia artemisiifolia</i>	C
Ragweed, giant	B	<i>Ambrosia trifida</i>	C
Redroot pigweed	B	<i>Amaranthus retroflexus</i>	C
Smartweed, ladythumb	B	<i>Polygonum persicaria</i>	C
Smartweed, Pennsylvania	B	<i>Polygonum pennsylvanicum</i>	C
Smooth pigweed	B	<i>Amaranthus hybridus</i>	C
Sunflower, common	B	<i>Helianthus annus</i>	C
Thistle, canada	B	<i>Cirsium arvense (L.) SCOP.</i>	C
Velvetleaf	B	<i>Abutilon theophrasti</i>	C
Venice mallow	B	<i>Hibiscus trionum</i>	C
Waterhemp, common	B	<i>Amaranthus tuberculatus</i>	C
Waterhemp, tall	B	<i>Amaranthus rudis</i>	C
Wild buckwheat	B	<i>Polygonum convolvulus</i>	C
Wild mustard	B	<i>Brassica kaber</i>	C
Wild radish	B	<i>Raphanus raphanistrum</i>	C
Yellow nutsedge	S	<i>Cyperus esculentus</i>	PC

<sup>1</sup>B=Broadleaf, G=Grass, S=Sedge

<sup>2</sup>Apply before the weed exceeds 2 inches in height

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Lumax will not provide consistent control of emerged grass weeds.

A tank mix of AAtrex® with Lumax can provide control of certain emerged annual grass weeds. Refer to the AAtrex label for weeds controlled and other restrictions.

Do not apply Lumax to sweet corn or yellow popcorn after the crop has emerged, or severe crop injury may occur.

## ROTATIONAL CROPS

Field corn may be replanted immediately, if crop is lost. Do not reapply Lumax.

- Do not rotate to crops other than corn (all types), cotton, small grain cereals, soybeans, sorghum or peanuts the spring following application of Lumax.
- Do not graze or feed forage or fodder from cotton to livestock, or illegal residues may result.
- Injury may occur to soybeans planted the year following application on soils having a calcareous surface layer if additional atrazine or atrazine-containing products are used.
- In eastern parts of the Dakotas, KS, western MN, and NE, do not rotate to soybeans for 18 months following application if the combined atrazine rate applied was more than 2.0 lbs. a.i./A, or equivalent band application rate, or soybean injury may occur.
- If Lumax is applied after June 1, rotating to crops other than corn (all types) or sorghum the next spring, may result in crop injury.
- In the High Plains and Intermountain areas of the West, where rainfall is sparse and erratic or where irrigation is required, use only when corn (all types) or sorghum is to follow field corn, or a crop of untreated corn (all types) or sorghum is to precede other rotational crops.
- Winter wheat, barley, or rye may be planted 4 ½ months following application.
- For all other crops, wait 18 months.

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## APPLICATION PROCEDURES

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### ADJUVANTS

Where Lumax is applied after the field corn has emerged, a non-ionic surfactant at 0.25% v/v (1 qt./100 gals.) may be used. The use of crop oil concentrate (COC) may result in temporary crop injury. If used, add COC at a rate not to exceed 1% v/v (1 gal./100 gals.) or not more than the equivalent of 1 qt./A. Do not use nitrogen based adjuvants (AMS or UAN) or methylated seed oil (MSO) with Lumax when applied alone to emerged field corn, or when Lumax is applied as a postemergence tank mixture with other products, unless directed for a specific tank mix on this label or as part of a supplemental Lumax label. Any of these adjuvants may be used at a preemergence or preplant timing, i.e. where the corn crop has not yet emerged to increase burndown

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activity on existing weeds. Do not apply Lumax to emerged sweet corn or yellow popcorn, or severe crop injury may occur.

For Lumax tank mixtures with Liberty® Herbicide applied to emerged field corn (LibertyLink® hybrids only), AMS may be added as directed on the Liberty label. However, AMS should be the only adjuvant added to this tank mixture, or severe crop injury may occur.

**Early Preplant:** Lumax may be applied up to 14 days prior to planting.

**Preemergence Surface:** Do not exceed 3.0 qts. of Lumax per season. Lumax may be applied to the soil surface as a broadcast or banded application.

**Banding Preemergence:** Lumax may be applied in a 10-15 inch band after corn planting but prior to corn emergence.

**Band Applications:** For band applications, using row and band width measurements in inches, calculate the amount to be applied per acre as follows:

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Rate per acre for a broadcast treatment} = \text{Amount needed per acre}$$

**Early Postemergence:** Lumax may be applied after field corn emergence. See the "Adjuvants" section of this label for adjuvant recommendations. Do not apply early postemergence to field corn in liquid fertilizer or severe crop injury may occur. Apply this treatment to small broadleaf weeds (less than 3 inches tall). Occasional field corn leaf burn may result, but this will not affect later growth or corn yield. Do not apply Lumax to emerged sweet corn or yellow popcorn or severe crop injury may occur. Postemergence applications to field corn must be made before crop reaches 12 inches in height.

This product will not provide consistent control of emerged grass weeds. For control of emerged grass weeds a grass herbicide tank mix may be required (see tank mix section of this label). Tank mixes of AAtrex can improve control of emerged annual grass and broadleaf weeds. Refer to the AAtrex label for weeds controlled and use restrictions.

If Bicep II MAGNUM®, Bicep Lite II Magnum®, AAtrex (atrazine), Dual MAGNUM®, or Dual II MAGNUM® alone or in tank mixtures have been applied early preplant, preplant surface, preplant incorporated, or preemergence, limit the Lumax early post application to not exceed a total of 2.5 lbs. of active ingredient of Atrazine or 3.75 lbs. of S-metolachlor active per acre, or illegal residues may result.

**Grazing Restriction:** To avoid possible illegal residues, do not graze or feed forage from treated areas for 45 days following application.

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**Preharvest Interval (PHI):** Field corn may be treated up to 12 inches tall. Do not harvest forage, grain, or stover within 60 days after application.

**Sprinkler Irrigation:** Do not apply Lumax by sprinkler irrigation. Use a sprinkler system only to incorporate Lumax after application. After Lumax has been applied, a sprinkler irrigation system set to deliver ½-1 inch of water may be used to incorporate the product. Using more than 1 inch of water could result in reduced performance. On sandy soil low in organic matter, use no more than ½ inch of water. Do not use flood irrigation to apply or incorporate Lumax.

## **CULTIVATION**

Should weeds develop, a shallow cultivation or rotary hoeing will generally result in improved weed control. If Lumax was incorporated, cultivate less than half the depth of incorporation.

If cultivation is necessary due to soil crusting, compaction, or escaped weeds, adjust equipment to run shallow and minimize soil movement. This will decrease the possibility of diluting or moving the herbicide from the weed control zone.

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## **SPRAY EQUIPMENT**

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### **Ground Application**

Spray nozzles should be uniformly spaced, the same size and type, and should provide accurate and uniform application. Use spray nozzles that provide medium to coarse droplet size to avoid drift yet provide good coverage. Ensure that all in-line strainer and nozzle screens in the sprayer are 50-mesh or coarser. Use a pump that can maintain a pressure of at least 35-40 psi at the nozzles and provide proper agitation within the tank to keep the product dispersed. Lower pressures may be used with extended range or drift reduction nozzles as long as adequate coverage is maintained. Always ensure that agitation is maintained until spraying is completed, even if stopped for brief periods of time. If the agitation is stopped for more than 5 minutes, re-suspend the spray solution by running on full agitation prior to spraying.

**Preemergence:** Apply in a spray volume of 10-80 gals./A.

**Early Postemergence:** Good weed coverage is essential for optimum weed control. Boom height for broadcast over-the-top applications should be based on the height of the crop – at least 15 inches above the crop canopy, but only high enough to give uniform coverage. Apply in a spray volume of 10-30 gals./A. When weed foliage is dense, use a minimum spray volume of 20 gals./A. Flat fan nozzles of 80° or 110° are recommended for optimum postemergence coverage. Do not use floodjet nozzles or controlled droplet application equipment for postemergence applications. Nozzles may be angled forward 45° to enhance penetration of the crop and provide better coverage.

## **Spray Drift**

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR. The interaction of equipment and weather related factors determine the potential for drift. The applicator is responsible for considering these factors when making an application decision.

Do not apply when weather conditions may cause drift to non-target areas. Drift may result in injury to adjacent crops and vegetation. To avoid spray drift, DO NOT apply when the wind speed is greater than 10 mph or during periods of temperature inversions.

### **Information on Droplet Size**

The most effective way to reduce spray drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions.

### **Controlling Droplet Size**

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturers recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles.

### **Application Height**

Applications should be made at the lowest height above the target area that still provides uniform coverage of the target. Making applications at the lowest yet effective height reduces exposure of droplets to wind.



## Wind

Drift potential is lowest between wind speeds 10 mph or less. However, many factors, including droplet size, pressure, and equipment type determine drift potential at any given wind speed. **Note:** Local terrain can influence wind patterns.

Leave a sufficient buffer downwind of the application to avoid drift to sensitive crops. This buffer may be untreated corn rows or field border species maintained for this purpose. The width of the buffer needed for a specific application will depend on the wind speed, distance to sensitive crops, and application equipment parameters.

## Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates, indicates good vertical air mixing.

## Sensitive Areas

Lumax herbicide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, nontarget crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

## Cleaning Equipment After Application

Special attention must be given to cleaning equipment before spraying a crop other than field corn. Mix only as much spray solution as needed.

1. Flush tank, hoses, boom, and nozzles with clean water.
2. Prepare a cleaning solution of 1 gal. of household ammonia per 25 gals. of water. Many commercial spray tank cleaners may be used.
3. Use a pressure washer to clean the inside of the spray tank with this solution. Take care to wash all parts of the tank, including the inside top surface. If a pressure washer is not available, completely fill the sprayer with the cleaning solution to

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ensure contact of the cleaning solution with all internal surfaces of the tank and plumbing. Start agitation in the sprayer and thoroughly recirculate the cleaning solution for at least 15 minutes. All visible deposits must be removed from the spraying system.

4. Flush hoses, spray lines, and nozzles for at least 1 minute with the cleaning solution.
5. Dispose of rinsate from steps 1-3 in an appropriate manner.
6. Repeat steps 2-5.
7. Remove nozzles, screens, and strainers and clean separately in the ammonia solution after completing the above procedures.
8. Rinse the complete spraying system with clean water.

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## **MIXING PROCEDURES**

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### **CARRIER**

**Liquids:** Either water or liquid fertilizers, excluding suspension fertilizers, may be used as carriers for preemergence applications. If fluid fertilizers are used, a compatibility test must be done. See Compatibility Test section for compatibility testing. Even if Lumax is physically compatible with a fluid fertilizer, constant agitation is necessary to maintain a uniform mixture during application. Use only water as the carrier when applying Lumax after field corn emergence.

### **ADDING TO SPRAY TANK**

The spray tank must be clean, thoroughly rinsed and decontaminated before adding either Lumax alone or with tank mix partners. If water is used as the carrier, use clean water.

**Used Alone:** When Lumax is used alone, add the recommended amount to the spray tank when the tank is half filled, then add the rest of the water or fluid fertilizer. Provide sufficient agitation during mixing and application to maintain a uniform mixture.

**Tank Mixed:** Refer to the sections on this label for recommended tank mixes. Always refer to labels of the tank mix partners for mixing directions and precautions. Do not exceed label dosage rates, nor combined maximum seasonal doses for mesotrione, S-metolachlor, or atrazine. This product cannot be mixed with any product bearing a label prohibition against such mixing. If a tank mixture is used, a compatibility test must be done. See Compatibility Test section for details on the procedure for such a test.

If the tank mix partner is compatible, fill the tank half full. Start and continue agitation throughout mixing. All return lines to the spray tank must discharge below the liquid

level. Prepare the components and add in the following order:

1. If a wettable powder or dry flowable formulation is used, make a slurry with water and add it slowly through the screen into the tank. Agitate during the procedure.
2. If a flowable formulation is used, add slowly through screen into the tank. Mixing and compatibility may be improved when a dry flowable is diluted with water before adding to the tank.
3. Add Lumax and any tank mix products next, by adding dry products first, flowables next, and emulsifiable concentrates last.
4. Add an adjuvant last, if needed.
5. Complete filling the sprayer tank and continue agitation. Apply as soon as possible after spray mixture is prepared. Do not leave mixture in spray tank overnight without agitation or unattended.

### COMPATIBILITY TEST

A compatibility test is recommended before tank mixing to ensure compatibility of Lumax with other pesticides. The following test assumes a spray volume of 25 gals/A. For other spray volumes, make appropriate changes in the ingredients.

**Note:** Nitrogen solutions or complete liquid fertilizers, excluding suspension fertilizers, may replace all or part of the water in the spray. Because liquid fertilizers vary, even within the same analysis, **always check compatibility with pesticide(s) before use.** Incompatibility of tank mixtures is more common with mixtures of fertilizer and pesticides.

### Test Procedure

1. Add 1.0 pt. of carrier (fertilizer or water) to each of two 1 qt. jars with tight lids. **Note:** Use the same source of water that will be used for the tank mix and conduct the test at the temperature the tank mix will be applied.
2. To one of the jars, add 1/4 tsp. or 1.2 milliliters of a compatibility agent approved for this use, such as Compex or Unite (1/4 tsp. is equivalent to 2.0 pts./100 gals. spray). Shake or stir gently to mix.
3. To both jars, add the appropriate amount of pesticide(s) in their relative proportions based on recommended label rates. If more than one pesticide is used, add them separately with dry pesticides first, flowables next, and emulsifiable concentrates last. After each addition, shake or stir gently to thoroughly mix.
4. After adding all ingredients, put lids on and tighten, and invert each jar ten times to mix. Let the mixtures stand 15-30 minutes and then look for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of incompatibility. Determine if the compatibility agent is needed in the spray

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mixture by comparing the two jars. If either mixture separates, but can be remixed readily, the mixture can be sprayed as long as good agitation is used. If the mixtures are incompatible, test the following methods of improving compatibility: (a) slurry the dry pesticide(s) in water before addition, or (b) add 1/2 the compatibility agent to the fertilizer or water and the other 1/2 to the emulsifiable concentrate or flowable pesticide before addition to the mixture. If incompatibility is still observed, do not use the mixture.

5. After compatibility testing is complete, dispose of any pesticide wastes in accordance with the **Storage and Disposal** section in this label.

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## **SPECIFIC USE DIRECTIONS**

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### **LUMAX TANK MIX COMBINATIONS**

#### **Use of Spray Adjuvants With Tank Mixtures**

When Lumax is used as a preemergence herbicide, and before weeds have emerged, spray adjuvants have little or no influence on performance. However, in burndown situations where the weeds have emerged and the corn has not, an adjuvant may be used with Lumax applied alone or when applied in tank mixture with a burndown herbicide as allowed on the individual product labels. Use only those adjuvants approved for agricultural crop use. See the "**Adjuvants**" section under "**Application Procedures**" for further instructions.

#### **Preemergence Tank Mix Combinations (Applied Before the Crop has Emerged)**

The tank mix partners listed below may be used in either conventional, reduced, or no-till systems and be applied by the same methods and at the same timings as Lumax unless otherwise specified in the tank mix product label. Follow all tank mix product labels for use rates and restrictions. Perform a compatibility test. Tank mixtures with 2,4-D are allowed, but should only be done with extreme care with regard to ensuring compatibility before mixing a load. 2,4-D products, and even batches, vary greatly with regard to compatibility and should be checked each time a water or carrier source, water or carrier temperature, product source, or tank mixture recipe is changed.

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Tank Mix	Rate (Max.)	Objective
AAtrex or other solo Atrazine products	0.5-1.25 lbs. a.i./A	Improved broadleaf and grass weed control
Princep®	0.5-1.3 lbs. a.i./A	Improved broadleaf and grass weed control
Gramoxone Max	2.7 pts./A	Burndown existing weeds
Touchdown brands	2 qts./A	Burndown existing weeds
Roundup brands	See product label	Burndown existing weeds
Warrior	3.84 fl. ozs./A	To control insects, such as cutworm

**Burndown Combinations for Reduced Tillage Situations**

In reduced or no-till corn and before the crop has emerged, Lumax tank mixes with Gramoxone Max, Roundup brands or Touchdown brands will burndown existing weeds. Gramoxone Max should be applied to emerged weeds when they are small. Best results are achieved when weeds are 1-6 inches in height. Consult the Gramoxone Max, Roundup brand, or Touchdown brand product label for further information on weeds controlled and application timings.

**Early Postemergence Tank Mix Combinations (Applied After the Crop has Emerged)**

The tank mix partners listed below may be used in either conventional, reduced or no-till systems and can be applied by the same methods and at the same timings as Lumax unless otherwise specified in the tank mix product label. Follow all tank mix product labels for use rates and restrictions. Perform a compatibility test. Tank mixtures with 2,4-D are allowed, but should only be done with extreme care with regard to ensuring compatibility before mixing a load. 2,4-D products, and even batches, vary greatly with regard to compatibility and should be checked each time a water or carrier source, water or carrier temperature, product source, or tank mixture recipe is changed.

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**Tank Mix Recommendations for Early Postemergence**

Tank Mix <sup>1</sup>	Rate (Max)	Objective
AAtrex or other solo Atrazine products	0.5-1.25 lbs. a.i./A	Improved broadleaf and annual grass weed control
Warrior	3.84 fl. oz./A	To control insects, such as cutworm
Accent®	As per product label	Emerged grass control
Basis®	As per product label	Emerged grass control
Liberty (only for corn hybrids designated as LibertyLink)	As per product label	Emerged grass control
Steadfast®	As per product label	Emerged grass control
Steadfast ATZ®	As per product label	Emerged grass control

<sup>1</sup>Consult the “Adjuvant” section of this label for recommendations when applying Lumax alone or in tank mixture to emerged field corn.

**Lumax Programs With Glyphosate for Glyphosate Tolerant Corn**

Lumax may be applied early postemergence at a rate down to 2 qts./A in tank mixture with a solo glyphosate product (e.g. Touchdown or Roundup brands) that is registered for use over-the-top in glyphosate tolerant field corn (e.g. Roundup Ready or Agrisure™ GT Corn). To minimize weed competition with the crop, target the application of this mixture to weeds in the 1 to 2 inch range. Do not apply this mixture to corn that is greater than 12 inches tall. If the glyphosate product has a built-in adjuvant system (i.e. the product label does not ask for additional adjuvant), only spray-grade ammonium sulfate (AMS) at 8.5 lbs./100 gal should be added to this mixture. If the glyphosate product label calls for an adjuvant in addition to AMS, add a non-ionic surfactant (NIS) at 0.25% v/v and AMS to this spray mixture. Do not add urea ammonium nitrate (UAN), crop oil concentrate (COC), or methylated seed oil (MSO) type adjuvants to these mixtures, or crop injury may occur. Follow all directions for use and restrictions on the glyphosate product label.

Alternatively, Lumax may be applied preemergence at a rate down to 2 qts./A as part of a two-pass weed control system when followed by a planned postemergence application of a glyphosate based product in glyphosate tolerant corn (e.g. Roundup Ready or Agrisure GT Corn). When used in this way, Lumax will provide reduced competition of the weeds listed in Table 1 for a period of 30 or more days, thus

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improving the timing flexibility and effectiveness of the glyphosate based product application. Follow all directions for use and restrictions on the glyphosate product label.

### **Lumax Programs with Liberty for LibertyLink Corn**

Lumax may be applied early postemergence at a rate down to 2 qts./A in tank mixture with Liberty and applied over-the-top in field corn designated as LibertyLink. To minimize weed competition with the crop, target the application of this mixture to weeds in the 1 to 2 inch range. Do not apply this mixture to corn that is greater than 12 inches tall. Ammonium sulfate (AMS) may be added as a spray adjuvant as directed on the Liberty label. However, AMS should be the only adjuvant added to this tank mixture. Do not add urea ammonium nitrate (UAN), crop oil concentrate (COC), non-ionic surfactants (NIS), or methylated seed oil (MSO) type adjuvants to these mixtures, or crop injury may occur. Follow all directions for use and restrictions on the Liberty product label.

Alternatively, Lumax may be applied preemergence at a rate down to 2 qts./A as part of a two-pass weed control system when followed by a planned postemergence application of Liberty in field corn designated as LibertyLink. When used in this way, Lumax will provide reduced competition of the weeds listed in Table 1 for a period of 30 or more days, thus improving the timing flexibility and effectiveness of the Liberty application. Follow all directions for use and restrictions on the Liberty product label.

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### **STORAGE AND DISPOSAL**

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

#### **Pesticide Storage**

Keep container tightly closed when not in use. Do not store near seeds, fertilizers, or foodstuffs. Can be stored at temperatures as low as -10°F. Keep away from heat and flame.

Ground water contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material.

### **Pesticide Disposal**

Open dumping is prohibited. Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Rinse spray equipment. Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of as described above, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

### **Container Disposal**

Triple rinse (or equivalent) then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

For minor spills, leaks, etc. follow all precautions on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire, or other emergency, call 1-800-8372, day or night. If the container is damaged and leaking or material has been spilled follow these procedures:

1. Cover spill with absorbent material.
2. Sweep into disposal container.
3. Wash area with detergent and water and follow with clean water rinse.
4. Do not allow to contaminate water supplies.
5. Dispose of according to instructions.

### **FOR BULK AND MINI-BULK CONTAINERS**

#### **Container Disposal**

When this container is empty, replace the cap and seal all openings that have been opened during use; and return the container to the point of purchase or to a designated location named at time of purchase of this product. This container must only be refilled with this pesticide product. **DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE.** Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transporting. Do not transport if this container is damaged or leaking. If the container is damaged, leaking, or obsolete, contact Syngenta Crop Protection, Inc. at 1-800-888-8372. If not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling. Disposal of this container must be in compliance with state and local regulations.

For minor spills, leaks, etc. follow all precautions on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire, or other



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emergency, call 1-800-8372, day or night. If the container is damaged and leaking or material has been spilled follow these procedures:

1. Cover spill with absorbent material.
2. Sweep into disposal container.
3. Wash area with detergent and water and follow with clean water rinse.
4. Do not allow to contaminate water supplies.
5. Dispose of according to instructions.

### **Container Precautions**

Before refilling, inspect thoroughly for damage such as cracks, punctures, bulges, dents, abrasions, and damaged or worn threads on closure devices.

### **For Mini-Bulk Containers**

REFILL ONLY WITH Lumax herbicide. The contents of this container cannot be completely removed by cleaning. Refilling with materials other than Lumax will result in contamination and may weaken container.

After filling and before transporting, check for leaks.

Do not refill or transport damaged or leaking container.

Circulation before dispensing is required.

**DO NOT USE MINI-BULK CONTAINERS FOR THE STORAGE OF FOOD, FEED, OR DRINKING WATER.**

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This product is protected by U.S. Patent Nos. 5,006,158 and 5,698,493. Other patents pending. No license granted to prepare any tank mixtures other than those expressly provided herein.

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For non-emergency information (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)

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Base/Container Label  
2.5, 120, 220, 330 Gallon and Bulk

**RESTRICTED USE PESTICIDE**  
**(GROUND AND SURFACE WATER CONCERNS)**  
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.  
THIS PRODUCT IS A RESTRICTED-USE HERBICIDE DUE TO GROUND AND SURFACE WATER CONCERNS. USERS MUST READ AND FOLLOW ALL PRECAUTIONARY STATEMENTS AND INSTRUCTIONS FOR USE IN ORDER TO MINIMIZE POTENTIAL FOR ATRAZINE TO REACH GROUND AND SURFACE WATER.

Lumax®  
Selective Herbicide

A Preemergence Herbicide for Control of Annual Grass and Broadleaf Weeds in Field Corn, Field Production Seed Corn, Field Silage Corn, Sweet Corn, and Yellow Popcorn

Active Ingredients\*:

S-Metolachlor: (CAS No. 87392-12-9).....	29.40%
Atrazine**: (CAS No. 1912-24-9).....	11.00%
Mesotrione: (CAS No. 104206-82-8).....	2.94%
Other Ingredients:	56.66%
Total:	100.00%

\*Active ingredients per gallon: S-metolachlor 2.68 pounds, mesotrione 0.268 pounds, atrazine 1.0 pound.

\*\*Atrazine with a maximum of 0.4% related triazines.

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

See directions for use in attached booklet. [2.5 Gallon]

To be used in accordance with directions for use in Lumax label booklet. [120/220/330 Gallon, Bulk]

**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 Directions for Use section for information about this standard.



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EPA Reg. No. 100-1152

EPA Est. 100-LA-001 [2.5, 120, 220, 330 gallons]

EPA Est. \_\_\_\_\_ [Bulk]

2.5 gallons  
Net Contents

120 gallons  
Net Contents

220 gallons  
Net Contents

330 gallons  
Net Contents

\_\_\_\_\_ gallons[bulk]  
Net Contents

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**PRECAUTIONARY STATEMENTS**

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**CAUTION**

Causes moderate eye injury. Do not get in eyes or on clothing. Avoid contact with skin or clothing. Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse. Wear long-sleeved shirt and long pants, socks plus shoes and gloves. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

<b>FIRST AID</b>	
<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 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>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 swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<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>	

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### **Environmental Hazards**

This product is toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate. This pesticide contains atrazine, which has been shown to be toxic to aquatic invertebrates. Runoff and drift from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not apply when weather conditions favor drift from treated areas.

### **Ground Water Advisory**

Lumax contains the active ingredients S-metolachlor, mesotrione and atrazine.

Atrazine can travel (seep or leach) through soil and can enter ground water which may be used as drinking water. Atrazine has been found in ground water. Users are advised not to apply atrazine to sand and loamy sand soils where the water table (ground water) is close to the surface and where these soils are very permeable, i.e., well-drained. Your local agricultural agencies can provide further information on the type of soil in your area and the location of ground water.

S-metolachlor has the potential to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

### **Surface Water Advisory**

The active ingredients in this product have the potential to contaminate surface water through ground spray drift. Under some conditions, the active ingredients may also have a high potential for runoff into surface water (primarily via dissolution in runoff water) for several months post-application. These include poorly drained or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow ground water, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlaying tile drainage systems that drain to surface water.

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 runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

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### **Mixing/Loading Instructions**

Care must be taken when using this product to prevent back-siphoning into wells, spills, or improper disposal of excess pesticide, spray mixtures, or rinsates.

Check valves or antisiphoning devices must be used on mixing equipment.

This product must not be mixed/loaded or used within 50 ft. of wells, including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing, or washing to this product into or from pesticide handling or application equipment or containers within 50 ft. of any well are prohibited, unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, and rain water that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum, 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above specified minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site.

Additional State imposed requirements regarding well head setbacks and operational area containment must be observed.

This product must not be mixed or loaded within 50 ft. of perennial or intermittent streams and rivers, natural or impounded lakes and reservoirs. This product may not be applied within 66 ft. of the points where field surface water runoff enters perennial or intermittent streams and rivers or within 200 ft. around natural or impounded lakes and reservoirs. If this product is applied to highly erodible land, the 66 ft. buffer or setback from runoff entry points must be planted to crop, or seeded with grass or other suitable crop.

### **Tile-Outletted Terraced Fields Containing Standpipes**

One of the following restrictions must be used in applying atrazine to tile-outletted terraced fields containing standpipes:

1. Do not apply this product within 66 ft. of standpipes in tile-outletted terraced fields.
2. Apply this product to the entire tile-outletted terraced field and immediately incorporate it to a depth of 2-3 inches in the entire field.

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3. Apply this product to the entire tile-outletted terraced field under a no-till practice only when a high crop residue management practice is practiced. High crop residue management is described as a crop management practice where little or no crop residue is removed from the field during and after crop harvest.

### **Physical and Chemical Hazards**

Do not use or store near heat or open flame.

[Bulk]:

### **CIRCULATION BEFORE DISPENSING IS REQUIRED**

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

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**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,**



4/1/02

**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.

**Container Disposal (2.5 gal.)**

Triple rinse (or equivalent) then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

**For Bulk and Mini-Bulk Containers (all bulk and mini bulk)**

**Container Disposal**

When this container is empty, replace the cap and seal all openings that have been opened during use; and return the container to the point of purchase or to a designated location named at time of purchase of this product. The container must only be refilled with this pesticide product. **DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE.** Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transporting. Do not transport if this container is damaged or leaking. If the container is damaged, leaking or obsolete, contact Syngenta Crop Protection, Inc. at 1-800-888-8372. If not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling. Disposal of this container must be in compliance with state and local regulations.

For minor spills, leaks, etc. follow all precautions on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire, or other emergency, call 1-800-8372, day or night. If the container is damaged and leaking or material has been spilled follow these procedures:

1. Cover spill with absorbent material.
2. Sweep into disposal container.
3. Wash area with detergent and water and follow with clean water rinse.
4. Do not allow to contaminate water supplies.
5. Dispose of according to instructions.

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### **Container Precautions**

Before refilling, inspect thoroughly for damage such as cracks, punctures, bulges, dents, abrasions, and damaged or worn threads on closure devices.

#### **For Mini-Bulk Containers (all bulk and mini-bulk)**

REFILL ONLY WITH Lumax herbicide. The contents of this container cannot be completely removed by cleaning. Refilling with materials other than Lumax will result in contamination and may weaken container.

After filling and before transporting, check for leaks.

Do not refill or transport damaged or leaking container.

Circulation before dispensing is required.

**DO NOT USE MINI-BULK CONTAINERS FOR THE STORAGE OF FOOD, FEED, OR DRINKING WATER!**

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