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7/5/2012

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON D C 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

Ms Cheryl Strader  
Regulatory Specialist Herbicides  
Syngenta Crop Protection LLC  
P O Box 18300  
Greensboro NC 27419

JUL - 5 2012

Subject Label Amendment – Increasing Cotton Rotational Interval as Required by the Agency  
Product Name Boundary Herbicide  
EPA Registration Number 100 958  
Submission Date March 5 2012  
Decision Number 462500

Dear Ms Strader

The label amendment referred to above changing the crop rotational interval for cotton from 8 months to 12 months as required by the Agency letter dated February 2 2012 in connection with your product registration under the Federal Insecticide Fungicide and Rodenticide Act (FIFRA) is acceptable provided the following revisions are made to the product label

- 1) The GENERAL INFORMATION header appearing on page 7 must be changed to read PRODUCT INFORMATION
- 2) Replace the AERIAL DRIFT REDUCTION ADVISORY INFORMATION header and the reference to the header both appearing on page 10 with SPRAY DRIFT MANAGEMENT
- 3) Per the Label Review Manual the FIRST AID instructions appearing on page 33 must be set apart or distinguishable from other text Because of its importance the Agency recommends the FIRST AID text on page 33 appear in a box
- 4) Per the Label Review Manual the STORAGE AND DISPOSAL instructions must be set apart and clearly distinguishable from other Directions for Use Highlighting their importance by increasing their prominence may be done by placing the text in a box
- 5) NOTE Please note that marketing claims made on the pesticide label must be substantiated by data maintained in your files If data supporting marketing claims made on the product label is not available then those claims must be removed

SEE NEXT PAGE

Page 2 of 2  
Changing/Increasing Cotton Rotational Interval  
Name Boundary Herbicide  
EPA Registration Number 100 958  
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6) NOTE Should you wish to add/retain a reference to the company's website on your label then please be aware that the website becomes labeling under the FIFRA and is subject to review by the Agency. If the website is false or misleading the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) lists examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

**Products shipped after 18 months from the date on this notice or the next printing of the label whichever occurs first, must bear the new revised label** If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA. Your release for shipment of this product constitutes acceptance of these conditions. This label supersedes all previously accepted labels. **You must submit one copy of the final printed label before the product is released for shipment**. One copy of the label stamped "Accepted with Comments" is enclosed for your records. If you have any questions, please contact Michael Walsh by phone at (703) 308 2972 or via email at walsh.michael@epa.gov

Sincerely



Kathryn V. Montague  
Product Manager (23)  
Herbicide Branch  
Registration Division (7505P)

Enclosure

[BOOKLET]

Sale use and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited

Boundary®

Herbicide

For control of certain grasses and broadleaf weeds in soybeans

Active Ingredients

S metolachlor (CAS No 87392 12 9)	68 1%
Metribuzin (CAS No 21087 64 9)	16 2%
Other Ingredients	15 7%
Total	100 0%

Contains 6 3 lbs of S metolachlor and 1 5 lbs of metribuzin per gallon

EPA Reg No 100 958

EPA Est

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

See additional precautionary statements and directions for use inside booklet

SCP 958A

2 5 gallons  
220 gallons  
\_\_\_\_\_ gallons  
Net Contents

**ACCEPTED  
with COMMENTS  
In EPA Letter Dated  
JUL - 5 2012**  
Under the Federal Insecticide  
Fungicide and Rodenticide Act  
as amended for the pesticide  
registered under EPA Reg No

100-958

<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 swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice</li> <li>• Do not give any liquid to the person</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>
<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 treatment advice</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>	

**PRECAUTIONARY STATEMENTS**

**Hazards to Humans and Domestic Animals**

**CAUTION**

Harmful if swallowed Causes moderate eye irritation Avoid contact with eyes skin or clothing

**Personal Protective Equipment (PPE)**

**Applicators and other handlers must wear**

- Long sleeved shirt and long pants
- Chemical resistant (such as nitrile butyl neoprene and/or barrier laminate) gloves
- Shoes plus socks

Follow manufacturer s instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**Engineering Control Statements**

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

**User Safety Recommendations**

**Users should**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

**Environmental Hazards**

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.

**Ground Water Advisory**

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.

Metribuzin is a chemical which can travel (seep or leach) through soil and can contaminate ground water which may be used as drinking water. Metribuzin has been found in ground water as a result of agricultural use. Users are advised not to apply metribuzin where the water table (ground water) is close to the surface and where the soils are very permeable, i.e., well drained soils such as loamy sands. Your local agricultural agencies can provide further information on the type of soil in your area and the location of ground water.

### **Surface Water Advisory**

S metolachlor has the potential to contaminate surface water through ground spray drift. Under some conditions, S metolachlor 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 draining 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.

### **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 anti siphoning devices must be used on all mixing and/or irrigation equipment.

This product may 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 mixed/loaded or used within 50 ft. of all wells, including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing, or washing of 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.

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

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

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION LLC or Seller. To the extent permitted by applicable law, 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. To the extent permitted by applicable law, this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and (2) Buyer and User assume the risk of any such use. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.**

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, 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 Limitations of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

### DIRECTIONS FOR USE

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

Do not apply this product in a way that will contact workers or other persons either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.** 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, or water, wear:

- Coveralls
- Chemical resistant (such as nitrile, butyl, neoprene and/or barrier laminate) gloves
- Shoes plus socks

Sale, use and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.

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



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## GENERAL INFORMATION

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Observe all precautions and limitations on the labels of each product used in tank mixtures. Tank mixture partners must be registered in states where they are used. Refer to and follow the label for each tank mix product used.

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

- 1 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.
- 2 Do not apply to impervious substrates such as paved or highly compacted surfaces.
- 3 Do not use tailwater from the first flood or furrow irrigation of treated fields to treat nontarget crops unless at least  $\frac{1}{2}$  inch of rainfall has occurred between application and the first irrigation.

### Mixing Instructions

Prepare no more spray mixture than is needed for the immediate operation. Thoroughly clean the spray equipment before using Boundary. Vigorous agitation is necessary to maintain uniformity of the spray mixture. Maintain maximum agitation throughout the spraying operation. Do not allow spray mixture to stand overnight in the spray tank. Flush the spray equipment thoroughly following each use and apply the rinsate to a previously treated area.

### Application in Water or Fluid Fertilizers

**Boundary Alone** Add  $\frac{1}{3}$  of the required amount of water or fluid fertilizer to the spray or mixing tank. With the agitator running, add Boundary into the spray tank. Continue agitation while adding the remainder of the water or fluid fertilizer. Begin application of the spray solution after the Boundary has completely dispersed in the water or fluid fertilizer. Maintain agitation until all of the mixture has been applied.

**Boundary + Tank Mixtures** Add  $\frac{1}{3}$  of the required amount of water or fluid fertilizer to the mix tank. Start the agitator running before adding any tank mix partners. In general, tank mix partners should be added in this order: products packaged in water soluble packaging, wettable powders, wettable granules (dry flowables), liquid flowables, liquids such as Boundary, and emulsifiable concentrates. Always allow each tank mix partner to become fully dispersed before adding the next product. Provide

sufficient agitation while adding the remainder of the water. Maintain agitation until all of the mixture has been applied.

**Notes** (1) When using Boundary in tank mixtures, all products in water soluble packaging should be added to the tank and mixed with plain water before any other tank mix partner, including Boundary. Allow the water soluble packaging to completely dissolve and the product(s) to completely disperse before adding any other tank mix partner to the tank. (2) Water soluble packets will not properly dissolve in most spray solutions that contain fluid fertilizers.

If using Boundary in a tank mixture, observe all directions for use, crop/sites, use rates, dilution ratios, precautions, and limitations that appear on the tank mix product label. No label dosage rate should be exceeded, and the most restrictive label precautions and limitations should be followed.

Boundary is compatible with most common tank mix partners. However, the physical compatibility of Boundary with tank mix partners should be tested before use. To determine the physical compatibility of Boundary with other products, use a jar test, as described below.

**Compatibility Test**

A jar test is recommended before tank mixing to ensure compatibility of Boundary 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 fluid 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 suspensions of fertilizer and pesticides.

**Test Procedure**

1. Add 1.0 pt. of carrier (fertilizer or water) to each of 2 one 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 ¼ tsp. or 1.2 milliliters of a compatibility agent approved for this use, such as Compex® or Unite® (¼ 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 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

**Ground Spray Equipment** Apply Boundary alone or in tank mixtures by ground equipment in a minimum of 10 gals of spray mixture per acre unless otherwise specified

Use sprayers that provide accurate and uniform application Calibrate the sprayer before use at the beginning of the season For Boundary tank mixtures with wettable powder or dry flowable formulations screens and strainers should be no finer than 50 mesh

Calculate the amount of herbicide needed for band treatment by the formula

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{broadcast rate per acre} = \text{amount needed per acre of field}$$

**Chemigation** Do not apply Boundary through any type of irrigation system

**Aerial Application** Apply Boundary in water using a minimum spray volume of 2 gals /A Avoid application under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur Make applications at a maximum height of 10 ft above the soybeans with low drift nozzles at a maximum pressure of 40 psi

Avoid application to humans or animals Flagmen and loaders should avoid inhalation of spray mist and prolonged contact with skin

**Aerial Drift Management**

Avoiding spray drift at the application site is the responsibility of the applicator The interaction of many equipment and weather related factors determine the potential for

spray drift The applicator and the grower are responsible for considering all these factors when making decisions

The following drift management requirements must be followed to avoid off target drift movement from aerial applications to agricultural field crops These requirements do not apply to forestry applications public health uses or to applications using dry formulations

- 1 The distance of the outermost nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor
- 2 Nozzles must always point backward parallel with the air stream and never be pointed downward more than 45 degrees

Where states have more stringent regulations they should be observed

The applicator should be familiar with and take into account the information covered in the **Aerial Drift Reduction Advisory Information** section below

## **Aerial Drift Reduction Advisory Information**

### **Information on Droplet Size**

The most effective way to reduce drift potential is to apply large droplets The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly or under unfavorable environmental conditions (see **Wind Temperature and Humidity** and **Temperature Inversions**)

### **Controlling Droplet Size**

- **Volume** – Use high flow rate nozzles to apply the highest practical spray volume Nozzles with higher rated flows produce larger droplets
- **Pressure** – Do not exceed the nozzle manufacturer s recommended pressures For many nozzle types lower pressure produces larger droplets When higher flow rates are needed use higher flow rate nozzles instead of increasing pressure
- **Number of nozzles** – Use the minimum number of nozzles that provide uniform coverage
- **Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice Significant deflection from horizontal will reduce droplet size and increase drift potential

- **Nozzle Type** – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

**Boom Length**

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

**Application Height**

Applications should not be made at a height greater than 10 ft above the top of the largest plants, unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

**Swath Adjustment**

When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

**Wind**

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**Temperature and Humidity**

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**Temperature Inversions**

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground

fog however if fog is not present inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion while smoke that moves upward and rapidly dissipates indicates good vertical air mixing

### **Sensitive Areas**

Boundary 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)

Avoid application to humans or animals Flagmen and loaders should avoid inhalation of spray mist and prolonged contact with skin

### **Cleaning Equipment after Application**

Because some crops other than soybeans are sensitive to low rates of Boundary special attention must be given to cleaning equipment before spraying a crop other than those registered for use and on this label Mix only as much spray solution as needed Immediately after spraying clean equipment thoroughly using the following procedure

- 1 Flush tank hoses boom and nozzles with clean water
- 2 Prepare a cleaning solution of one gal of household ammonia per 50 gals of water Many commercial spray tank cleaners may be used as well Consult your Syngenta representative for a partial listing of approved tank cleaners and more information about proper tank cleaning procedures Do not use chlorine based cleaners such as Clorox®
- 3 When available 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 Completely fill the sprayer with the cleaning solution to 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 one minute with the cleaning solution
- 5 Dispose of rinsate from steps 1 3 as described under the **Environmental Hazards** section of the **Precautionary Statements**
- 6 Repeat steps 2 5

- 7 Remove nozzles screens and strainers and clean separately in the ammonia cleaning solution after completing the above procedures
- 8 Rinse the complete spraying system with clean water

**Impregnation onto Dry Bulk Granular Fertilizers**

Many dry bulk granular fertilizers may be impregnated or coated with Boundary and used to control weeds in soybeans. When applying Boundary with dry bulk fertilizers follow all directions for use and precautions on the Boundary label regarding target crops rates per acre soil texture application methods and rotational crops

Complying with all individual state regulations relating to dry bulk granular fertilizer blending registration labeling and application is the responsibility of the individual and/or company selling the herbicide/fertilizer mixture

Prepare the herbicide/fertilizer mixture by using any closed drum belt ribbon or other commonly used dry bulk fertilizer blender. Nozzles used to spray Boundary onto the fertilizer must be spaced to provide uniform spray coverage. Care should be taken to aim the spray onto the fertilizer only avoiding the walls of the blender

If the herbicide/fertilizer mixture is too wet add a highly absorptive material such as Agsorb® FG or Celatom MP 79® or similar granular clay or diatomaceous earth materials to obtain a dry free flowing mixture. Absorptive materials should be added only after the herbicide has been thoroughly blended into the fertilizer mixture. Best application results will be obtained by using a granule of 6/30 particle size or of a size similar to that of the fertilizer materials being used. Generally less than 2% by weight of absorptive material will be needed. Avoid using more than 5% absorptive material by weight

Calculate the amount of Boundary to be used by the following formula

$$\frac{2\ 000}{\text{lbs of fertilizer per acre}} \times \text{pts of Boundary per acre} = \text{pts of Boundary per ton of fertilizer}$$

**Pneumatic (Compressed Air) Application**

High humidity high urea concentrations low fertilizer use rates and dusty fertilizer may cause fertilizer mixtures to build up or plug the distributor head air tubes or nozzle deflector plates. To minimize buildup premix Boundary with Exxon Aromatic 200 at a rate of 2.0-2.5 pts /gal of Boundary. Aromatic 200 is a noncombustible/nonflammable petroleum product. Aromatic 200 may be used in either a fertilizer blender or through direct injection systems. Drying agents should not be used when using Aromatic 200

**Notes** (1) Mixtures of Boundary and Aromatic 200 must be used on dry fertilizer only. Poor results or crop injury may result if these mixtures are used in water or liquid fertilizer solutions for spraying applications. (2) When impregnating Boundary in a blender before application, a drier mixture can be obtained by substituting a drying agent for Aromatic 200. The use of Agsorb FG or another drying agent of 6/30 particle size is recommended. (3) Drying agents are not recommended for use with On The Go impregnation equipment.

*Precautions To avoid potential for explosion (1) Do not impregnate Boundary on ammonium nitrate, potassium nitrate, or sodium nitrate, either alone or in blends with other fertilizers. (2) Do not combine Boundary with a single superphosphate (1-20-0) or treble superphosphate (0-46-0). (3) Do not use Boundary on straight limestone, since absorption will not be achieved. Fertilizer blends containing limestone can be impregnated.*

**Application of Impregnated Dry Bulk Granular Fertilizer**

Apply 200-700 lbs of the herbicide/fertilizer mixture per acre. For best results, apply the mixture uniformly to the soil with properly calibrated equipment immediately after blending. Uniform application of the herbicide/fertilizer mixture is essential in order to prevent possible crop injury to subsequent rotational crops. Nonuniform application may also result in unsatisfactory weed control. In areas where conventional tillage is practiced, a shallow incorporation of the mixture into the soil is recommended to obtain satisfactory weed control. On fine- or medium-textured soils in areas where soil incorporation is not planned, i.e., reduced tillage situations or in some conventional till situations, make applications approximately 30 days before planting to allow moisture to move the herbicide/fertilizer mixture into the soil. On coarse-textured soils, make applications approximately 14 days prior to planting.

*Precautions To help avoid rotational crop injury, make applications as early as possible, since Boundary impregnated onto dry bulk fertilizers can be expected to last longer in the soil than Boundary applied as a spray in water or fluid fertilizer.*

**Table 1 Crop Rotation Recommendations<sup>1</sup>**

<b>Waiting Period After Application of Boundary<sup>2</sup></b>			
<b>4½ MONTHS</b>	<b>8 MONTHS</b>	<b>12 MONTHS</b>	<b>18 MONTHS</b>
Winter Barley Winter Wheat Alfalfa	Corn Peas Potatoes Rice Spring Barley Spring Wheat	Asparagus Cotton Forage Grasses Lentils Sainfoin Sugarcane Tomatoes Other Crops not listed (except root crops)	Onions Sugar Beets and Other Root Crops



<sup>1</sup>Cover crops for soil building or erosion control may be planted any time but do not graze or harvest for food or feed. Stand reductions may occur in some areas.

<sup>2</sup>Crop rotation recommendations do not include restrictions for the tank mix partner. Refer to the label of the other product for additional restrictions.

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## **SOYBEANS (EXCEPT CALIFORNIA)**

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Boundary may be applied preplant surface, preplant incorporated, preemergence, or as a sequential application to control weeds listed on this label.

### **Activation**

A small amount of soil moisture is required to activate Boundary. In areas of low rainfall, a preemergence application to dry soil should be followed with light irrigation of ¼ inch of water. Do not apply heavy irrigation immediately after application. As with many surface applied herbicides, weed control and crop tolerance may vary with rainfall and/or soil texture.

### **Grazing and Feeding Treated Soybean Plants**

Treated soybean plants may be grazed or fed to livestock 40 days after the last application of Boundary.

### **Rate Ranges**

Where a rate range is shown, use a lower rate on soils that are coarse textured and/or low in organic matter. Use a higher rate on soils that are relatively fine textured and/or high in organic matter.

### **Replanting**

If replanting is necessary in fields previously treated with Boundary, the field may be replanted to soybeans. A minimum of tillage is recommended. Do not apply a second treatment as injury to soybeans may occur.

### **Special Precautions (Soybeans)**

Injury to soybeans or reduced weed control may occur when Boundary is used under the following conditions; these conditions should be avoided wherever possible:

1. When soils have a calcareous surface area or a pH of 7.5 or higher.
2. Due to the sensitivity of certain soybean varieties, Boundary is not recommended for use on Altona, AP 55, AP 71, Asgrow 6520, Burlison, Coker 102, Coker 156, Dassel, GL 3202, Govan, Maple Amber, NB 3665, NKS 1884, Paloma 350, Portage, Regal, Semmes, Terra Vig 505, Terra Vig 606, Tracy, Vansoy, and

Vinton 81 If you choose to plant a newly released soybean variety consult your seed supplier for information on its tolerance to metribuzin (an active ingredient in Boundary) before using Boundary

- 3 When applied in conjunction with soil applied organic phosphate pesticides
- 4 Uneven application or improper incorporation of Boundary can decrease the level of weed control and/or increase the level of crop injury
- 5 When applied to any soil with less than 0.5% organic matter
- 6 Where soil incorporation is deeper than recommended
- 7 When sprayers were not calibrated accurately
- 8 When heavy rains occur soon after application especially in poorly drained areas where water may stand for several days
- 9 When soybeans are planted less than 1 1/2" deep particularly when Boundary is applied preemergence
- 10 Where high soil levels of atrazine are present
- 11 When using poor quality soybean seed

Boundary when applied as directed will control the following weeds

**Table 2 Weeds Controlled by Boundary\***

Annual Broadleaves		Annual Grasses
Anoda spurred	Nightshade black	Barnyardgrass
Beggarweed Florida	Pennycress field	Bluegrass annual
Carpetweed	Pepperweed Virginia	Crabgrass spp
Chickweed common	Pigweed spp *	Crowfootgrass
Copperleaf hophornbeam	Purslane common	Cupgrass prairie
Galinsoga spp	Pusley Florida	Cupgrass southwestern
Henbit	Redweed	Foxtail spp
Horseweed/marestail	Sesbania spp	Goosegrass
Jimsonweed	Shepherd s purse	Junglerice
Knotweed spp	Sicklepod	Panicum fall
Kochia*	Sida prickly/teaweed	Rice red
Ladysthumb	Smartweed Pennsylvania	Signalgrass broadleaf
Lambsquarters common*	Spurge spotted	Witchgrass
Lettuce prickly	Starbur bristly	
Mallow Venice	Thistle Russian	
Mustard spp	Waterhemp spp	

Boundary will provide suppression\*\* of cocklebur common ragweed seedling johnsongrass velvetleaf hairy nightshade yellow nutsedge Texas panicum sandbur spp shattercane common sunflower and the volunteer crops barley sorghum and wheat

\*Except triazine resistant biotypes

\*\*Suppression means significant activity but not always at a level considered acceptable for commercial weed control

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**BOUNDARY FOUNDATION PROGRAM FOR PLANNED 2 PASS WEED CONTROL SYSTEMS**

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Boundary may be applied preplant incorporated or preemergence at 1.25 - 1.5 pts /A on all soils to reduce competition from the weeds listed in Table 2 for a 30 day period when followed by a planned postemergence weed control treatment. Recommended postemergence treatments include any product or combination of products labeled to control the specific weeds remaining in the field including Roundup® and Roundup Ultra™ (for use on Roundup Ready® soybean varieties). Follow all application directions for Boundary used alone either preplant incorporated or preemergence. For the postemergence herbicide application consult the selected postemergence herbicide manufacturer's label for weeds controlled, weed size, application rate, additional use directions, precautions, and limitations before use.

**Note** On soils with pH above 7.0 use the 1.25 pts /A rate only

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**BOUNDARY IN CONVENTIONAL TILLAGE SYSTEMS**

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**Preplant Incorporated Application**

Incorporate Boundary uniformly into the top 2 inches of soil within 14 days before planting using a disk, field cultivator, rolling cultivator, or similar implement. Apply Boundary preplant incorporated if furrow irrigation is used or when a period of dry weather after application is expected. If soybeans are planted on beds, apply and incorporate the tank mixture after bed formation.

**Preemergence Application**

Dry weather following preemergence application of Boundary may reduce effectiveness. If weeds develop, cultivate uniformly with shallow tilling equipment such as a rotary hoe that will not damage soybeans.

For information on applying product in fluid or dry fertilizer, refer to **Application in Water or Fluid Fertilizers** or **Impregnation onto Dry Bulk Granular Fertilizers** and **Application of Impregnated Dry Bulk Granular Fertilizer** on this label.

**Table 3 Boundary Use Rates Conventional Tillage Systems (Broadcast Rate)**

Soil Texture	0.5 to 3% Organic Matter	Over 3% Organic Matter <sup>2</sup>
<b>COARSE</b> <sup>1</sup> (Loamy sand sandy loam)	1.0 - 1.25 <sup>3</sup> pts /A	1.25 - 1.5 pts /A
<b>MEDIUM</b> (Loam silt loam silt sandy clay sandy clay loam)	1.5 - 1.75 pts /A	1.75 - 2.0 pts /A
<b>FINE</b> (Silty clay silty clay loam <sup>4</sup> clay clay loam)	2.0 - 2.25 pts /A	2.0 - 2.5 pts /A

<sup>1</sup>Do not use on sand soils. On coarse textured soils do not use on loamy sand soils with less than 2% organic matter.

<sup>2</sup>For preplant incorporated application use the lower rate.

<sup>3</sup>For Southern and Southeastern states see section below **In Coarse (Light) Soils**.

<sup>4</sup>Silty clay loam soils are transitional soils and may be classified as medium textured soils in some regions of the U.S. When using Boundary treat this soil as fine textured.

**Note** On soils with pH above 7.0 soybean injury caused by the metribuzin in Boundary may occur at rates higher than 1.25 pts /A. To avoid injury do not use Boundary at rates greater than 1.25 pts /A on soils above pH 7.0.

**IN COARSE (LIGHT) SOILS**

(Only in AL AR FL GA LA MS MO NC OK SC TN TX VA)

Boundary is recommended for use as a preplant incorporated or preemergence application in coarse textured low organic matter soils in the states listed above. Refer to the appropriate sections of this label for specific directions on use recommendations and restrictions.

**Weeds Controlled** Refer to Table 2

**Table 4 Boundary Preemergence Application (Broadcast Rates)**

Soil Texture	Organic Matter	Boundary (pts /A)
<b>COARSE</b> (Sand <sup>1</sup> loamy sand sandy loam)	0.5% or above	1.0 - 1.75 <sup>2</sup>

<sup>1</sup>Not recommended for use on sand with less than 1% organic matter.

<sup>2</sup>Use the higher rate under heavy weed pressures and/or on soils higher in organic matter. For maximum control of sicklepod use a preemergence application.

**Note** On soils with pH above 7.0 soybean injury caused by the metribuzin in Boundary may occur at rates higher than 1.25 pts /A. To avoid injury do not use Boundary at rates greater than 1.25 pts /A on soils above pH 7.0.

**BOUNDARY PLUS PYTHON® (80 WDG) TANK MIX APPLICATION**

Boundary may be applied with Python Herbicide preplant surface preplant incorporated or preemergence for the control of certain broadleaf weeds and grasses in soybeans Consult the Python label for specific directions on use recommendations and restrictions not specified on this label

**Weeds Controlled** In addition to weeds controlled by Boundary alone Boundary plus Python will improve control of Palmer amaranth velvetleaf common ragweed wild sunflower waterhemp spp kochia and triazine resistant common lambsquarters  
**(Note Python will not improve control of ALS resistant weeds )**

**Table 5 Boundary Plus Python 80 WDG Application (Broadcast Rates)**

Soil Texture	Boundary <sup>1</sup> (Pts /A)	Python 80 WDG <sup>1</sup> (Oz /A)
<b>COARSE</b> (Loamy sand or sandy loam)	1 0 - 1 25 <sup>2</sup>	0 8 - 0 89
<b>MEDIUM</b> (Loam silt loam silt sandy clay sandy clay loam)	1 25 - 1 75	0 89 - 1 0
<b>FINE</b> (Silty clay silty clay loam <sup>3</sup> clay loam)	1 75 - 2 25	0 89 - 1 0

<sup>1</sup>Use the higher rate on soils with more than 3% organic matter

<sup>2</sup>For Southern and Southeastern states in coarse soils see **In Coarse (Light) Soils** section of this label for rates of Boundary

<sup>3</sup>Silty clay loam soils are transitional soils and may be classified as medium textured soils in some regions of the U S When using Boundary treat this soil as fine textured

**Note** On soils with pH above 7 0 soybean injury caused by the metribuzin in Boundary occasionally occurs at rates higher than 1 25 pts /A To avoid injury do not use Boundary at rates greater than 1 25 pts /A on soils above pH 7 0

**BOUNDARY PLUS SCEPTER® (70 DG) TANK MIX APPLICATION**

Boundary may be applied with Scepter herbicide preplant surface preplant incorporated or preemergence for the control of certain broadleaf weeds and grasses in soybeans Consult the Scepter label for specific directions on use recommendations restrictions and any additional weeds not specified on this label

**Weeds Controlled** In addition to weeds controlled by Boundary alone Boundary plus Scepter improves control of the following annual broadleaf weeds

- Buffalobur
- Cocklebur
- Morningglory pitted
- Morningglory smallflower
- Ragweed common
- Sicklepod
- Sunflower

Boundary plus Scepter will provide suppression (reduce the competition) of ivyleaf and tall morningglory and giant ragweed

**Table 6 Boundary Plus Scepter Application (Broadcast Rates)**

Soil Texture	Boundary <sup>1</sup> (Pts /A)	Scepter 70 DG <sup>2</sup> (Oz /A)
<b>COARSE</b> (Loamy sand or sandy loam)	1 0 1 25 <sup>3</sup>	1 4 2 1
<b>MEDIUM</b> (Loam silt loam silt sandy clay sandy clay loam)	1 25 1 75	1 4 2 1
<b>FINE</b> (Silty clay silty clay loam <sup>4</sup> clay clay loam)	1 75 2 25	1 4 2 1

<sup>1</sup>Higher rate is recommended on soils with more than 3% organic matter

<sup>2</sup>For preemergence application use the higher rate For maximum control of moderate to heavy infestations of cocklebur giant ragweed and sicklepod use the higher rate and a preplant incorporated application

<sup>3</sup>For Southern and Southeastern states in coarse soils see the **In Coarse (Light) Soils** section of this label for Boundary rates

<sup>4</sup>Silty clay loam soils are transitional soils and may be classified as medium textured soils in some regions of the U S When using Boundary treat this soil as fine textured

**Note** On soils with pH above 7 0 soybean injury caused by the metribuzin in Boundary may occur at rates higher than 1 25 pts /A To avoid injury do not use Boundary at rates greater than 1 25 pts /A on soils above pH 7 0

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**BOUNDARY PLUS CANOPY® (75DG) OR CANOPY XL (56 3 WG) TANK MIX APPLICATION**

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Boundary may be applied with Canopy or Canopy XL herbicide as a preplant surface preplant incorporated or preemergence application for the control of certain broadleaf weeds and grasses in soybeans Consult the Canopy or Canopy XL label for specific directions on use recommendations and restrictions not specified on this label

**Weeds Controlled** In addition to weeds controlled by Boundary alone Boundary plus Canopy will improve control of cocklebur and velvetleaf and provide additional suppression (reduce competition) of giant ragweed common ragweed and morningglory spp Boundary plus Canopy XL will control the following additional weeds yellow nutsedge waterhemp spp and nightshade spp

**Table 7 Boundary Plus Canopy Application (Broadcast Rates)**

Soil Texture <sup>1</sup>	Boundary <sup>2</sup> (Pts /A)	Canopy <sup>5</sup> (75 DG) (Oz /A)	Canopy XL (56 3 WG) (Oz /A)
<b>COARSE</b> (Loamy sand or sandy loam)	1 0 1 25 <sup>3</sup>	N/A	3 6 4 6
<b>MEDIUM</b> (Loam silt loam silt sandy clay sandy clay loam)	1 25 1 75	3	3 6 4 6
<b>FINE</b> (Silty clay silty clay loam <sup>4</sup> clay clay loam)	1 75 2 25	3 4	3 6 4 6

<sup>1</sup>Do not use on soils with pH greater than 7 0

<sup>2</sup>Use higher rate on soils with more than 3% organic matter

<sup>3</sup>For Southern and Southeastern states in coarse soils see **In Coarse (Light) Soils** section of this label for rates of Boundary

<sup>4</sup>Silty clay loam soils are transitional soils and may be classified as medium textured soils in some regions of the U S When using Boundary treat this soil as fine textured

<sup>5</sup>Do not use Canopy 75 DG as a mix partner on soils with pH above 6 8

**Note** On soils with pH above 7 0 soybean injury caused by the metribuzin in Boundary occasionally occurs at rates higher than 1 25 pts /A To avoid injury do not use Boundary at rates greater than 1 25 pts /A on soils above pH 7 0

#### **BOUNDARY PLUS FIRSTRATE® (84WDG) TANK MIX APPLICATION**

Boundary may be applied with FirstRate 84WDG herbicide as a preplant preplant incorporated or preemergence application for the control of certain broadleaf weeds and grasses in soybeans Consult the FirstRate label for specific directions on use recommendations and restrictions not specified on this label

**Weeds Controlled** In addition to weeds controlled by Boundary alone Boundary plus FirstRate will improve control of cocklebur giant ragweed common ragweed common sunflower and velvetleaf and provide additional suppression (reduce competition) of morningglory species

**Table 8 Boundary Plus FirstRate Application (Broadcast Rates)**

Soil Texture	Boundary (Pts /A)	FirstRate 84WDG <sup>1</sup> (Oz /A)
<b>COARSE</b> (Loamy sand or sandy loam)	1 0 1 25 <sup>2</sup>	0 3 0 45
<b>MEDIUM</b> (Loam silt loam silt sandy clay sandy clay loam)	1 25 1 75	0 3 0 45
<b>FINE</b> (Silty clay silty clay loam <sup>3</sup> clay clay loam)	1 75 2 25	0 3 0 45

<sup>1</sup>Use higher rate on soils with more than 3% organic matter

<sup>2</sup>For Southern and Southeastern states in coarse soils see **In Coarse (Light) Soils** section of this label for rates of Boundary

<sup>3</sup>Silty clay loam soils are transitional soils and may be classified as medium textured soils in some regions of the U S When using Boundary treat this soil as fine textured

**Note** On soils with pH above 7.0 soybean injury caused by the metribuzin in Boundary occasionally occurs at rates higher than 1.25 pts /A To avoid injury do not use Boundary at rates greater than 1.25 pts /A on soils above pH 7.0

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### **BOUNDARY PLUS COMMAND® (3ME) TANK MIX APPLICATION**

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Boundary may be applied with Command as a preplant or shallow incorporated broadcast application for the control of certain broadleaf weeds and grasses in soybeans Command may also be applied preemergent Consult the Command label for specific directions for use recommendations and restrictions not specified on this label

**Weeds Controlled** In addition to weeds controlled by Boundary alone Boundary plus Command will provide improved control of heavy infestations of velvetleaf jimsonweed and common ragweed

**Table 9 Boundary Plus Command Application (Broadcast Rates)**

<b>Soil Texture</b>	<b>Boundary<sup>1</sup> (Pts /A)</b>	<b>Command 3ME (Pts /A)</b>
<b>COARSE</b> (Loamy sand or sandy loam)	1.0 - 1.25 <sup>2</sup>	2/3 - 1
<b>MEDIUM</b> (Loam silt loam silt sandy clay sandy clay loam)	1.25 - 1.75	2/3 - 1
<b>FINE</b> (Silty clay silty clay loam <sup>3</sup> clay clay loam)	1.75 - 2.25	2/3 - 1

<sup>1</sup>Higher rate is recommended on soils with organic matter greater than 3%

<sup>2</sup>For Southern and Southeastern states in coarse soils see the In Coarse (Light) Soils section of this label for Boundary rates

<sup>3</sup>Silty clay loam soils are transitional soils and may be classified as medium textured soils in some regions of the U S When using Boundary treat this soil as fine textured

**Note** On soils with pH above 7.0 soybean injury caused by the metribuzin in Boundary occasionally occurs at rates higher than 1.25 pts /A To avoid injury do not use Boundary at rates greater than 1.25 pts /A on soils above pH 7.0

*Precautions (1) Do not plant wheat oats barley rye or alfalfa in the fall or following spring after application as crop injury may occur (2) Do not apply where weather conditions favor drift*



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**BOUNDARY PLUS PROWL® (3.3 EC) TANK MIX APPLICATION**


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Boundary may be applied with Prowl as a preplant surface preplant incorporated or preemergence broadcast application for the control of certain broadleaf weeds and grasses in soybeans. Consult the Prowl label for specific directions for use recommendations and restrictions not specified on this label.

**Weeds Controlled** In addition to weeds controlled by Boundary alone, Boundary plus Prowl will provide improved control for triazine resistant weeds such as common lambsquarters, pigweed spp, etc.

**Table 10 Boundary Plus Prowl Application (Broadcast Rates)**

Soil Texture	Boundary <sup>1</sup> (Pts /A)	Prowl 3.3 EC (Pts /A)
<b>COARSE</b> (Loamy sand or sandy loam)	1.0 - 1.25 <sup>2</sup>	1.2 - 2.4
<b>MEDIUM</b> (Loam, silt loam, silt sandy clay, sandy clay loam)	1.25 - 1.75	1.8 - 3.6
<b>FINE</b> (Silty clay, silty clay loam <sup>3</sup> , clay, clay loam)	1.75 - 2.25	1.8 - 3.6

<sup>1</sup>Higher rate is recommended on soils with organic matter greater than 3%.

<sup>2</sup>For Southern and Southeastern states in coarse soils, see the **In Coarse (Light) Soils** section of this label for Boundary rates.

<sup>3</sup>Silty clay loam soils are transitional soils and may be classified as medium textured soils in some regions of the U.S. When using Boundary, treat this soil as fine textured.

**Note** On soils with pH above 7.0, soybean injury caused by the metribuzin in Boundary occasionally occurs at rates higher than 1.25 pts /A. To avoid injury, do not use Boundary at rates greater than 1.25 pts /A on soils above pH 7.0.

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**HERBICIDES THAT MAY BE APPLIED POSTEMERGENCE FOLLOWING BOUNDARY**


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If required, application of Boundary alone or in tank mixture may be followed by an application of a postemergence herbicide to provide additional control of certain weeds. The following postemergence herbicides may be applied:

Assure® II	Liberty® Herbicide <sup>2</sup>	Rezult® A&B
Basagran®	Manifest®	Roundup/Roundup Ultra <sup>1</sup>
Blazer®	Option® II	Scepter
Classic®	Pinnacle®	Scepter O T ®
Cobra®	Poast®	Select®
Concert®	Poast Plus®	Status®
Conclude® B&G	Prestige®	Stellar®
FirstRate	Pursuit®	Storm®
Flexstar®	Raptor®	Synchrony® STS™
Fusilade® DX	Reflex®	Tornado®
Frontrow®	Reliance™ STS®	Touchdown® <sup>1</sup>
Fusion®	Resource®	
Galaxy®		

<sup>1</sup>Use on Roundup Ready soybeans only

<sup>2</sup>Use on LibertyLink soybeans only

Refer to the above information and the individual product labels for use directions use rates and special precautions/restrictions

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### **REDUCED RATE SCEPTER (70 DG) APPLICATION FOLLOWING BOUNDARY**

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If required application of Boundary alone or in tank mixture may be followed by an early postemergence application of a reduced rate of Scepter herbicide for improved control of cocklebur Apply 0.7-1.4 oz of Scepter 70 DG Use the lower rate of Scepter if cockleburs are less than 3 inches tall or have fewer than 3 leaves and are actively growing and use the higher rate if cockleburs are 3-6 inches tall and actively growing Do not use Scepter when plants have been subjected to stress conditions Use of nonionic surfactant or crop oil concentrate is recommended for Scepter applications Refer to the Scepter 70 DG label for additional use directions and special precautions/restrictions

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### **BURNDOWN WEED CONTROL**

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Boundary can be used as part of a burndown herbicide program for control of existing vegetation prior to soybean emergence in conservation tillage (reduced tillage/no till) systems Boundary may be tank mixed with 2,4-D low volatile ester (LVE) Gramoxone® Extra Roundup Roundup Ultra Touchdown Fusion Poast Plus or Select for control of emerged weeds prior to crop emergence Boundary burndown tank mixes can be applied before planting or prior to crop emergence

### **Application**

Boundary may be applied up to 30 days before planting or preemergence Apply only by ground equipment when Boundary is used for burndown of existing vegetation in conservation tillage systems Use the high end of the rate range for Boundary

applications made 14-30 days before planting. Refer to Table 13 for rates of Boundary and to the following table for rates of tank mix partners.

**Table 11 Burndown Rates of Tank Mix Partners**

Product	Rate	Directions and Remarks
2,4-D LVE	0.25 lb a.i./A	Apply at least 7 days preplant when using 2,4-D LVE at 0.25-0.5 lb a.i./A and at least 30 days preplant with rates greater than 0.5 lb a.i./A. Include crop oil concentrate (COC) at the rate of 1 gal/100 gals of spray solution (1% v/v).
Gramoxone Extra	24-48 fl oz/A	Must be applied prior to crop emergence. Use 24-32 fl oz of Gramoxone Extra for weeds less than 4 inches in height and 32-48 fl oz when weeds are 4-6 inches in height. Apply in 20-60 gals of water per acre. Include either nonionic surfactant at 1 qt/100 gals (0.25% v/v) or crop oil concentrate at 1 gal/100 gals (1% v/v) of spray solution.
Gramoxone Extra + 2,4-D LVE	24-48 fl oz/A + 0.25 lb a.i./A	Follow the Directions and Remarks section above for 2,4-D LVE and Gramoxone Extra, paying special attention to crop planting restrictions with 2,4-D LVE. Include either nonionic surfactant or crop oil concentrate in this tank mix.
Roundup/ Roundup Ultra or Touchdown	12-24 fl oz/A or 8-16 fl oz/A	Must be applied prior to crop emergence. Use the higher rates as weeds approach the maximum weed heights listed in Table 12. Apply in 10-20 gals of water per acre. With Roundup and Touchdown, include nonionic surfactant at 2 qts/100 gals (0.5% v/v) and ammonium sulfate (spray grade) at 17 lbs/100 gals of spray solution. With Roundup Ultra, include ammonium sulfate (spray grade) at 17 lbs/100 gals of spray solution. Any glyphosate formulation registered and labeled for use in soybeans may be tank mixed with Boundary.
Roundup/ Roundup Ultra or Touchdown + 2,4-D LVE	12-24 fl oz/A or 8-16 fl oz/A + 0.25 lb a.i./A	Follow the Directions and Remarks section above for 2,4-D LVE and Roundup/Roundup Ultra/Touchdown, paying special attention to planting restrictions with 2,4-D LVE. Use the adjuvant recommendations under the Roundup/Roundup Ultra/Touchdown tank mix. Do not use crop oil concentrate.
Fusion + 2,4-D LVE	4-8 fl oz/A + 0.25 lb a.i./A	Follow the planting restrictions under the Directions and Remarks section above for 2,4-D LVE. Fusion rates of 4-6 and 8 fl oz will control certain grasses up to 2-4 and 6 inches in height, respectively. Include either crop oil concentrate at 1 gal/100 gals (1.0% v/v) or nonionic surfactant at 1.2 qts/100 gals (0.25-0.5% v/v) of spray solution. Refer to the Fusion label for additional information.
Poast Plus + 2,4-D LVE	8-16 fl oz/A + 0.25 lb a.i./A	Follow the planting restrictions under the Directions and Remarks section above for 2,4-D LVE. The 8 and 12 fl oz rates of Poast Plus will control certain grasses up to 2 and 3 inches in height, respectively. Include either crop oil concentrate at the rate of 1 gal/100 gals of spray solution (1% v/v) or Dash® HC at 1 pt/A. Refer to the Poast Plus label for additional information.
Select + 2,4-D LVE	3-4 fl oz/A + 0.25 lb a.i./A	Follow the planting restrictions under the Directions and Remarks section above for 2,4-D LVE. The 3 and 4 fl oz rates of Select will control certain grasses up to 3 and 4 inches in height, respectively. Include crop oil concentrate at the rate of 1 qt/A and 28% UAN (urea ammonium nitrate) at a rate of 1.2 qts/A. Refer to the Select label for additional information.

*Precautions Do not apply these treatments after crop emergence Observe all precautions and limitations on the labeling of all products used in tank mixtures Refer to the General Information section of this label for additional information precautions and limitations*

### **Soybeans**

- 1 Apply only 2,4-D low volatile ester formulations which are registered and recommended for preplant or burndown use
- 2 Do not apply tank mixtures containing 2,4-D LVE if wind is blowing toward desired susceptible plants (i.e. cotton, tobacco, tomato, etc.) or when wind speeds exceed 6 miles per hour. Observe all cautions and limitations of all products used in tank mixtures.

### **Feeding Restrictions**

Soybean plants or hay treated with Boundary may be grazed or fed to livestock 40 days after application. Follow the most restrictive preharvest interval of all products used in a tank mixture.

**Weeds Controlled** Boundary in tank mixtures with the herbicides listed in Table 11 will provide burndown control of the weeds listed below.

**Table 12 Weeds Controlled by Burndown Rates of Boundary Tank Mixtures**

Weeds Controlled	Boundary +							
	2 4 D LVE	Poast Plus + 2 4 D LVE	Select + 2 4 D LVE	Fusion + 2 4 D LVE	Roundup/ Roundup Ultra/ Touchdown	Roundup/ Roundup Ultra/ Touchdown + 2 4 D LVE	Gramoxone Extra	Gramoxone Extra + 2 4 D LVE
<b>Annual Grasses</b>	<b>Maximum Burndown Height (Inches)</b>							
Barley						8		4 6
Barnyardgrass		2 3	3 4			6		4 6
Crabgrass spp		2 3				6		4 6
Foxtail spp		2 3	3 4	2 6		8		4 6
Johnsongrass seedling		2 3				8		4 6
Panicum fall		2 3	3	2 6		6		4 6
Sandbur field						8		4 6
Shattercane		2 3				8		4 6
Wheat volunteer						6		4 6
Witchgrass		2 3				6		4 6
<b>Broadleaves</b>	<b>Maximum Burndown Height (Inches)</b>							
Buffalobur						6	6	4 6
Chickweed common			6			6	6	4 6
Cocklebur common			6			6	8	4 6
Dandelion common			6 dia <sup>1</sup>			2 dia <sup>2</sup>	6 dia <sup>1</sup>	4 dia <sup>3</sup>
Henbit			4			4	4	4 6
Horseweed/marestail			6 <sup>1</sup>			4 <sup>2</sup>	6	3
Jimsonweed			6			6	6	4 6
Kochia			4 <sup>1</sup>			4	4	4
Ladysthumb			6			6	8	4 6
Lambsquarters common			6			6	8	4 6
Lettuce prickly			6			6	6	4 6
Mallow Venice			6			6	6	4 6
Morningglory spp			6			2	4	2
Mustard spp			6			6	8	4 6
Pennycress field			6			6	6	4 6
Pigweed spp (annual)			6			6	8	4 6
Ragweed common			6			6 <sup>2</sup>	8	4 6
Ragweed giant			6 <sup>1</sup>			4 <sup>2</sup>	6	4
Shepherd s purse			6			6	6	4 6
Sida prickly			6			4	4	4
Smartweed Pennsylvania			6			6	8	4 6
Sunflower common			6			6	6	4 6
Thistle Russian			4 <sup>1</sup>			2-4 <sup>2</sup>	4	4
Velvetleaf			6			6	8	4 6
Waterhemp spp			6			6	8	4 6

<sup>1</sup>Use 2 4 D LVE at 0.5 pound active ingredient per acre

<sup>2</sup>Use a minimum Roundup/Roundup Ultra rate of 16 fl oz /A and a minimum Touchdown rate of 10.6 fl oz /A

<sup>3</sup>Suppression only

**BOUNDARY USE RATES FOR REDUCED AND NO TILL SYSTEMS**

**Preplant Surface Application**

Boundary may be used in reduced till and no till systems. Applications may be made up to 30 days before planting or after planting but before soybean emergence. Residual herbicides such as Canopy, Canopy XL, FirstRate, Scepter, Command, Python, and Prowl may be tank mixed for additional weed control. If weeds are present at time of application, burndown herbicides may be added to the tank mixes (see Burndown Weed Control section). Refer to the tank mix product labels for specific rates and use directions.

**Table 13 Boundary Use Rates for Reduced Till and No Till Systems (Broadcast Rates)**

Soil Texture	Boundary (Pts /A <sup>1</sup> )
<b>COARSE</b> <sup>2</sup> (Loamy sand, sandy loam)	1.0 - 1.75
<b>MEDIUM</b> (Loam, silt loam, silt, sandy clay, sandy clay loam)	1.75 - 2.5
<b>FINE</b> (Silty clay, silty clay loam <sup>3</sup> , clay, clay loam)	2.25 - 3.0

<sup>1</sup>Use low rate range for low residue level or soils with less than 3% organic matter. Use the higher rate range for high residue level or soils with greater than 3% organic matter.

<sup>2</sup>Do not use on sand soils. On coarse textured soils, do not use on loamy sand soils with less than 2% organic matter.

<sup>3</sup>Silty clay loam soils are transitional soils and may be classified as medium textured soils in some regions of the U.S. When using Boundary, treat this soil as fine textured.

**BOUNDARY SEQUENTIAL APPLICATION**

An early preplant (surface applied or shallow incorporated) application of Boundary followed by a preemergence application of Boundary after planting but before soybean emergence will provide more consistent control of broadleaf and grass weeds than a single application.

A sequential application will decrease the need for tillage and/or burndown herbicides for the control of existing vegetation before planting while providing residual control of weeds after planting.

**Application**

An early preplant application may be made 15-30 days before planting soybeans. Follow this application with a preemergence overlay application of Boundary after planting but before crop emergence. Follow directions on this label for sequential applications from 0-14 days before planting.

Where a rate range is recommended the higher rates should be used (a) in fields with a history of severe weed pressure (b) when the time between early preplant and preemergence overlay applications approaches the maximum 30 days (c) when the organic matter content of the soil is over 3% and/or (d) when heavy crop residues are present on the soil surface

When weeds exceed 1 1 5 inches in height or diameter at application use a burndown herbicide such as Roundup Ultra Gramoxone Extra or 2 4 D LVE

**Weeds Controlled** In addition to weeds controlled by Boundary alone the sequential application improves control of the following annual broadleaf weeds buffalobur cocklebur common ragweed velvetleaf and sunflower

**Table 14 Sequential Application (Broadcast Rates)**

Soil Texture <sup>1</sup>	Early Preplant Application Boundary (Pts /A)	Followed By	Preemergence Overlay Application Boundary (Pts /A)
<b>COARSE</b> <sup>1</sup> (Sand loamy sand sandy loam)	1 0 1 5	followed by	0 25 0 75
<b>MEDIUM</b> (Loam silt loam sandy clay loam silt sandy clay)	1 25 1 75	followed by	0 5 1 0
<b>FINE</b> (Silty clay loam <sup>3</sup> clay loam silty clay clay)	1 5 2 0 <sup>2</sup>	followed by	0 75 1 25 <sup>2</sup>

<sup>1</sup>On coarse textured soils do not use on sand soils with less than 1% organic matter However on coarse textured soils with a calcareous surface area or a pH of 7 5 or higher do not use on sand soils with less than 2% organic matter or on loamy sand or sandy loam soils with less than 1% organic matter

<sup>2</sup>Total not to exceed 3 25 pints of Boundary per acre per use season

<sup>3</sup>Silty clay loam soils are transitional soils and may be classified as medium textured soils in some regions of the U S When using Boundary treat this soil as fine textured

**STORAGE AND DISPOSAL**

**Pesticide Storage**

Store in a cool dry place and in such a manner as to prevent cross contamination with other pesticides fertilizers food and feed Store in original container and out of the reach of children preferably in a locked storage area

Handle and open container in a manner as to prevent spillage If container is leaking invert to prevent leakage If the container is leaking or material is spilled for any reason

or cause carefully dam up spilled material to prevent runoff Refer to **Precautionary Statements** on label for hazards associated with the handling of this material Do not walk through spilled material Absorb spilled material with absorbing type compounds and dispose of as directed for pesticides below In spill or leak incidents keep unauthorized people away

### **Pesticide Disposal**

Do not contaminate water food or feed by storage or disposal Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility

### **Container Handling [less than 5 gallons]**

Non refillable container Do not reuse or refill this container Offer for recycling if available Triple rinse container (or equivalent) 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 Fill the container ¼ full with water and recap Shake for 10 seconds Pour rinsate into application equipment or a mix tank or store rinsate for later use and disposal Drain for 10 seconds after the flow begins to drip Repeat this procedure two more times Then offer for recycling if available 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 indicated on this label and clean up immediately Take special care to contain spills leaks and other accidents to prevent further exposure of facilities and equipment Absorb spilled product with absorbing materials and dispose of in an approved waste disposal facility In the event of a major spill fire or other emergency call 1 800 888 8372 day or night

### **Container Handling [Bulk]**

Refillable container Refill this container with pesticide only Do not use this container for any other purpose Cleaning the container before final disposal is the responsibility of the person disposing of the container Cleaning before refilling is the responsibility of the refiller To clean container before final disposal empty the remaining contents from this container into application equipment or mix tank Fill the container about 10 percent full with water Agitate vigorously or recirculate water with the pump for 2 minutes Pour or pump rinsate into application equipment or rinsate collection system Repeat this rinsing procedure two more times

For minor spills leaks etc follow all precautions indicated on this label and clean up immediately Take special care to contain spills leaks and other accidents to prevent further exposure of facilities and equipment Absorb spilled product with absorbing materials and dispose of in an approved waste disposal facility In the event of a major spill fire or other emergency call 1 800 888 8372 day or night



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Manufactured for  
Syngenta Crop Protection LLC  
P O Box 18300  
Greensboro NC 27419 8300

SCP 958

[CONTAINER LABEL]

Sale use and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited

Boundary®

Herbicide

For control of certain grasses and broadleaf weeds in soybeans

Active Ingredients	
S metolachlor (CAS No 87392 12 9)	68 1%
Metribuzin (CAS No 21087 64 9)	16 2%
Other Ingredients	15 7%
Total	100 0%

Contains 6 3 lbs of S metolachlor and 1 5 lbs of metribuzin per gallon

See directions for use in attached booklet

<b>AGRICULTURAL USE REQUIREMENTS</b>
Use this product only in accordance with its labeling and with the Worker Protection Standard 40 CFR part 170 Refer to supplemental labeling under Agricultural Use Requirements in the Directions for Use section for information about this standard

EPA Reg No 100 958

EPA Est

2 5 gallons  
Net Contents

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

**Precautionary Statements**

**Hazards to Humans and Domestic Animals**

Harmful if swallowed Causes moderate eye irritation Avoid contact with eyes skin or clothing

**FIRST AID**

**If in eyes** Hold eye open and rinse slowly and gently with water for 15 20 minutes Remove contact lenses if present after the first 5 minutes then continue rinsing eye Call a poison control center or doctor for treatment advice

**If swallowed** Call a poison control center or doctor immediately for treatment advice Do not give any liquid to the person Do not induce vomiting unless told to do so by a poison control center or doctor Do not give anything by mouth to an unconscious person

**If on skin or clothing** Take off contaminated clothing Rinse skin immediately with plenty of water for 15 20 minutes Call a poison control center or doctor for treatment advice

**If inhaled** Move person to fresh air If person is not breathing call 911 or an ambulance then give artificial respiration preferably by mouth to mouth if possible Call a poison control center or doctor for treatment advice

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

**HOT LINE NUMBER** For 24 Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill Leak Fire or Accident) Call **1 800 888 8372**

**Environmental Hazards**

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

**Ground Water Advisory**

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

Metribuzin is a chemical which can travel (seep or leach) through soil and can contaminate ground water which may be used as drinking water. Metribuzin has been found in ground water as a result of agricultural use. Users are advised not to apply metribuzin where the water table (ground water) is close to the surface and where the soils are very permeable, i.e., well drained soils such as loamy sands. Your local agricultural agencies can provide further information on the type of soil in your area and the location of ground water.

### **Surface Water Advisory**

S metolachlor has the potential to contaminate surface water through ground spray drift. Under some conditions, S metolachlor 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 draining 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.

### **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 all mixing and/or irrigation equipment.

This product may 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 mixed/loaded or used within 50 ft. of all wells, including abandoned wells, drainage wells, and sink holes.\*

\*For exceptions to this restriction, see the **Environmental Hazards** section of the **Precautionary Statements** in attached booklet.

### **Aerial Drift Management Requirements**

Do not apply this product by air, unless the supplemental labeling on Aerial Drift Management in attached booklet is followed.

### **Chemigation**

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

**Container Handling**

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