

FLUMIOXAZIN	GROUP	14	HERBICIDE
METRIBUZIN	GROUP	5	HERBICIDE
PYROXASULFONE	GROUP	15	HERBICIDE



# FIERCE MTZ

HERBICIDE

**FOR RESIDUAL CONTROL AND/OR SUPPRESSION OF LISTED WEEDS IN FIELD CORN, SOYBEAN, FALLOW LAND AND NON-CROP AREAS.**

Active Ingredients	By Wt
Flumioxazin*	5.29%
Metribuzin**	15.86%
Pyroxasulfone***	6.76%
Other Ingredients	72.09%
Total	100.00%

- \* *N*-(7-fluoro-3,4-dihydro-3-oxo-4-prop-2-ynyl-2*H*-1,4-benzoxazin-6-yl) cyclohex-1-ene-1,2-dicarboxamide
- \*\* 4-amino-6-*tert*-butyl-4,5-dihydro-3-methylthio-1,2,4-triazin-5-one
- \*\*\* 5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1*H*-pyrazol-4-ylmethyl 4,5-dihydro-5,5-dimethyl-1,2-oxazol-3-yl sulfone

Fierce® MTZ Herbicide is a suspension concentrate with 0.5 lb flumioxazin per gallon, 1.5 lb metribuzin per gallon and 0.64 lb pyroxasulfone per gallon.

EPA Reg. No. 59639-236  
EPA Est. 228-IL-1<sup>ⓧ</sup>, 5481-ID-1<sup>Ⓢ</sup>, 70815-GA-1<sup>Ⓢ</sup>  
Superscript is first letter of lot number.

**KEEP OUT OF REACH OF CHILDREN**  
**CAUTION**  
SEE BELOW FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

**FIRST AID**

**If swallowed:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything to an unconscious person.

**HOT LINE NUMBER**

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 800-892-0099 for emergency medical treatment information.

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS & DOMESTIC ANIMALS CAUTION

Harmful if swallowed. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

### PERSONAL PROTECTIVE EQUIPMENT (PPE):

**Applicators and other handlers must wear:** long-sleeved shirt, long pants, shoes, socks and water-proof gloves.

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.

### Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standards (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 after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Users should 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 non-target plants and aquatic invertebrates. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water when disposing of equipment washwaters.

This pesticide is toxic to plants and should be used strictly in accordance with the drift and run-off precautions on this label in order to minimize off-site exposures.

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

Metribuzin is a chemical which can travel (seep or leach) through soil and can contaminate groundwater which may be used as drinking water. Metribuzin has been found in groundwater as a result of agricultural use. Users are advised not to apply metribuzin

where the water table (groundwater) 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 groundwater.

**Surface Water Advisories:** Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment wash waters or rinsate.

The product may impact surface water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow groundwater. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams and springs will reduce potential loading of pyroxasulfone and its degradation product, 5-difluoromethoxy-1H-pyrazol-4-yl) methanesulfonic acid (M1), from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

## DIRECTIONS FOR USE

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

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

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

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

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water is: coveralls, shoes, socks and chemical-resistant gloves made of waterproof material.

## DISCLAIMER, RISKS OF USING THIS PRODUCT, LIMITED WARRANTY AND LIMITATION OF LIABILITY

**IMPORTANT: Read the entire Label including this Disclaimer, Risks of Using this Product, Limited Warranty, and Limitation of Liability before using this product. If the terms are not acceptable THEN DO NOT USE THE PRODUCT; rather, return the unopened product within 15 days of purchase for a refund of the purchase price.**

### RISKS OF USING THIS PRODUCT

The Buyer and User (referred to collectively herein as "Buyer") of this product should be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance of the target pest or weeds to this product, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of Valent. The Buyer should be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN THIS PRODUCT SHOULD NOT BE APPLIED. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND TO THE FULLEST EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

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Valent shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

#### **LIMITED WARRANTY**

Valent warrants only that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the label, under average use conditions, when used strictly in accordance with the label **and subject to the Risks of Using This Product as described above. To the extent consistent with applicable law AND AS SET FORTH ABOVE, VALENT MAKES NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED.** No agent or representative of Valent or Seller is authorized to make or create any other express or implied warranty.

#### **LIMITATION OF LIABILITY**

**To the fullest extent consistent with applicable law, Valent or Seller is not liable for any incidental, consequential, indirect or special damages resulting from the use or handling of this product. The limitation includes, but is not limited to, loss of yield on all or any portion of the treated acreage, increased care, treatment or other expenses required to take the crop to harvest, increased finance charges or altered finance ratings, emotional or mental distress and/or exemplary damages. TO THE FULLEST EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE BUYER, AND THE EXCLUSIVE MAXIMUM LIABILITY OF VALENT OR 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 THIS PRODUCT OR, AT THE ELECTION OF VALENT OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

#### **PROMPT NOTICE OF CLAIM**

To the extent consistent with applicable law allowing such requirements Valent must be provided notice as soon as Buyer has reason to believe it may have a claim, but in no event later than thirty days from date of planting, or thirty days from the date of application, whichever is later, so that an immediate inspection of the affected property and growing crops can be made.

To the extent consistent with applicable law if Buyer does not notify Valent of any claims, in such period, it shall be barred from obtaining any remedy.

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#### **NO AMENDMENTS**

Valent and Seller offer this product, and Buyer accepts it, subject to the foregoing **Disclaimer, Risks of Using This Product, Limited Warranty and Limitation of Liability**, which may not be modified by any oral or written agreement.

#### **TANK MIXES**

**NOTICE:** Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor, to the extent allowed by applicable law.

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

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

#### **Weed Resistance Management**

For resistance management, please note that *Fierce* MTZ Herbicide contains Group 14/flumioxazin, Group 5/metribuzin and a Group 15/pyroxasulfone herbicides. Any weed population may contain or develop plants naturally resistant to Group 14 herbicides and/or Group 5 herbicides and/or Group 15 herbicides. The resistant individuals may dominate the weed population if these herbicides are used repeatedly in the same field. Appropriate resistance-management strategies should be followed.

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

- Rotate the use of *Fierce* MTZ Herbicide or other Group 14, Group 5 and/or Group 15 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.

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- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g., higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method, for example hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your local extension specialist or certified crop advisors for additional pesticide resistance-management and/or integrated weed-management strategies for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact Valent U.S.A. LLC at 800-6-VALENT (682-5368).

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### PRODUCT INFORMATION

*Fierce* MTZ Herbicide provides residual control of susceptible weeds in labeled crops and provides additional burndown activity when used as part of a burndown program. In addition, *Fierce* MTZ Herbicide can be applied as part of a fall burndown program for control of susceptible winter annuals.

Weeds controlled by *Fierce* MTZ Herbicide are listed in Table 1, Weeds Controlled or Suppressed by Residual Activity of *Fierce* MTZ Herbicide. Application rates of *Fierce* MTZ Herbicide vary depending on soil type and organic matter; refer to individual crop use instructions.

Moisture is necessary to activate *Fierce* MTZ Herbicide in soil for residual weed control. Dry weather following applications of *Fierce* MTZ Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, *Fierce* MTZ Herbicide will control susceptible germinating weeds. When adequate moisture is not received after soil applied treatments of *Fierce* MTZ Herbicide application, weed control may be improved by shallow cultivation or irrigation with at least 1/2 inch of water. If weeds begin to emerge, irrigate (1/4 inch of water) or cultivate uniformly with shallow-tillage equipment such as a rotary hoe that will not damage the crop. Deep cultivation reduces the effectiveness of *Fierce* MTZ Herbicide.

Crop injury may occur from applications made to poorly drained soils and/or applications made under cool and/or wet conditions. Risk of crop injury can be minimized

by using on well drained soils, planting soybeans at least 1.5 inches deep, using high quality seed and completely covering seeds with soil prior to preemergence applications. Treated soil that is splashed onto newly emerged crops may result in temporary crop injury.

<b><i>Fierce</i> MTZ Herbicide Rate Summary</b>	
<b>Pints of <i>Fierce</i> MTZ Herbicide</b>	<b>Total Pounds of Active Ingredient</b>
1.0	0.268
1.25	0.334
1.50	0.401

### RESTRICTIONS

- Do not exceed the maximum annual rates as listed on this label.
- Do not apply when weather conditions favor spray drift from treated areas.
- Do not apply during low-level inversion conditions, including fog.
- Observe all rotational intervals as listed in the Crop Rotational Interval Table.
- Low-pressure, high volume hand-wand equipment is prohibited.
- Do not apply to frozen or snow covered soil.
- Do not apply this product through any type of irrigation system.

### PRECAUTION

- Any tillage operation after the application or mechanical incorporation into the soil will reduce residual weed control.

**Burndown program:** Apply *Fierce* MTZ Herbicide as part of a burndown program to actively growing weeds. Applying *Fierce* MTZ Herbicide under conditions that do not promote active weed growth will reduce herbicide effectiveness. Weeds under stress due to drought, excessive water, extremes in temperature, disease or low humidity tend to become less susceptible to herbicidal action. *Fierce* MTZ Herbicide is most effective when applied under warm sunny conditions.

**Rainfastness:** *Fierce* MTZ Herbicide is rainfast one hour after application. Do not apply *Fierce* MTZ Herbicide if rain is expected within one hour of application or postemergence efficacy may be reduced.

**Soil Characteristics:** Application of *Fierce* MTZ Herbicide to soils with high organic matter and/or high clay content may require higher dosages than soils with low organic matter and/or low clay content. Application to cloddy seedbeds can result in reduced weed control.

**Tank Mixes:** Read tank mix product label for rates and weeds controlled. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

## APPLICATION INFORMATION

### GROUND APPLICATION

#### **Burndown Application (Prior to Crop Emergence):**

To ensure thorough coverage in burndown applications, use 10 to 60 gallons of carrier volume per acre. Use 20 to 60 gallons per acre if dense vegetation or heavy crop residue is present.

#### **Preemergence Application (Conventional Tillage):**

To ensure uniform coverage, use 10 to 30 gallons of carrier volume per acre for conventional tillage applications.

### AERIAL APPLICATION

Spray drift away from the site of application may cause damage to non-target vegetation.

When used as part of a burndown weed control program, apply *Fierce* MTZ Herbicide in 7 to 10 gallons of carrier volume per acre. Application at less than 7 gallons per acre may provide inadequate control. When used for preemergence weed control, apply *Fierce* MTZ Herbicide in 5 to 10 gallons of water per acre. The higher carrier volume provides more consistent weed control. Do not exceed the nozzle manufacturer's specified 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.

### Adjuvants and Drift Control Additives

When an adjuvant is to be used with *Fierce* MTZ Herbicide, use a Chemical Producers and Distributors Association certified adjuvant. Either a crop oil concentrate (COC) or methylated seed oil (MSO) which contains at least 15% emulsifiers and 80% oil at 1% v/v or a non-ionic surfactant (NIS) at 0.25% v/v, may be used when applying *Fierce* MTZ Herbicide as part of a burndown program. Some tank mix partners, such as Roundup PowerMAX®, are formulated with sufficient adjuvants and do not require the addition of a crop oil concentrate, methylated seed oil or non-ionic surfactant when tank mixed with *Fierce* MTZ Herbicide. The addition of a crop oil concentrate or methylated seed oil may increase the burndown activity on certain weeds such as cutleaf Evening-primrose and Carolina geranium. Verify mixing compatibility qualities by a jar test.

A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 lb/A or a 28 to 32% nitrogen solution at 1 to 2 qt/A) may be added to the spray mixture along with either a crop oil concentrate, methylated seed oil or non-ionic surfactant to enhance weed control. The addition of a nitrogen source does not replace the need for a crop oil concentrate, a methylated seed oil or a non-ionic surfactant.

Drift control additives may be used. When a drift control additive is used, read and carefully observe the cautionary statements and all other information appearing on the additive label.

Refer to tank mix partner's label for adjuvant recommendation.

## JAR TEST TO DETERMINE COMPATIBILITY OF ADJUVANTS AND *FIERCE* MTZ HERBICIDE

When using *Fierce* MTZ Herbicide and an adjuvant, such as in stale seed bed or reduced tillage situations, a jar test should be performed before mixing commercial quantities of *Fierce* MTZ Herbicide, when using *Fierce* MTZ Herbicide for the first time, when using new adjuvants or when a new water source is being used.

1. Add 1 pt of the water to a quart jar. The water should be from the same source and temperature as which will be used in the spray tank mixing operation.
2. Add 6 ml of *Fierce* MTZ Herbicide to the quart jar for every 1 pt of *Fierce* MTZ Herbicide per acre being applied (6 ml if 1 pt/A is the desired *Fierce* MTZ Herbicide rate), gently mix until product goes into suspension.
3. Add 60 ml (4 Tbsps or 2 fl oz) of the crop oil or methylated seed oil to the quart jar or 1 ml of non-ionic surfactant if it is being used in place of oil, gently mix.
4. If nitrogen is being used, add 16 ml (1 Tbsp or 0.5 oz) of the 28 to 32% nitrogen source to the quart jar. If ammonium sulfate is being used, add 19 g AMS to the quart jar in place of the 28 to 32% nitrogen.
5. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.
6. An ideal tank mix combination will be uniform and free of suspended particles. If any of the following conditions are observed the choice of adjuvant should be questioned:
  - a) Layer of oil or globules on the mixture's surface.
  - b) Flocculation: fine particles in suspension or as a layer on the bottom of the jar.
  - c) Clabbering: thickening texture (coagulated) like gelatin.

## SPRAYER PREPARATION

Before applying *Fierce* MTZ Herbicide, start with clean, well maintained application equipment. The spray tank, as well as all hoses and booms, must be cleaned to ensure no residue from the previous spraying operation remains in the sprayer. Some pesticides, including but not limited to, the sulfonylurea and phenoxy herbicides, (i.e., chlorimuron and 2,4-D respectively) are active at very small amounts and can cause crop injury when applied to susceptible crops. The spray equipment must be cleaned according to the manufacturer's directions for the last product used before the equipment is used to apply *Fierce* MTZ Herbicide. If two or more products were tank mixed prior to *Fierce* MTZ Herbicide application, follow the most restrictive cleanup procedure.

## MIXING INSTRUCTIONS

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. If a drift retardant is to be used, add 10 lb of spray grade ammonium sulfate per 100 gallons of spray solution.

3. While agitating, slowly add the *Fierce* MTZ Herbicide to the spray tank. Agitation will create a rippling or rolling action on the water surface.
4. If tank mixing *Fierce* MTZ Herbicide with other labeled herbicides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates and then solutions. Prepare no more spray mixture than is required for the immediate spray operation.
5. Add any required adjuvants.
6. Fill spray tank to desired level with water. **Continue agitation until all spray solution has been applied.**
7. Mix only the amount of spray solution that can be applied the day of mixing. *Fierce* MTZ Herbicide should be applied within 6 hours of mixing.

## SPRAYER CLEANUP

Spray equipment, including mixing vessels and nurse tanks, must be cleaned each day following *Fierce* MTZ Herbicide application. After *Fierce* MTZ Herbicide is applied, the following steps must be used to clean the spray equipment:

1. Completely drain the spray tank, rinse the sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the spray tank with clean water and flush all hoses, booms, screens and nozzles.
3. Top off tank, add 1 gallon of 3% household ammonia (or equivalent) for every 100 gallons of water, circulate through sprayer for 5 minutes, and then flush all hoses, booms, screens and nozzles for a minimum of 15 minutes. To enhance removal of *Fierce* MTZ Herbicide from the spray system, add a tank cleaner such as "Valent Tank Cleaner", in place of ammonia and allow the cleaning solution to remain in the pressurized spray system (spray tank, hoses and boom) for 8 hours before flushing the system for a minimum of 15 minutes. If diaphragms are being used on the spray boom, loosen diaphragms before flushing the spray system, allowing cleaning solution to spray through the open diaphragm. If spray lines have any end caps, they must be loosened before flushing the system, allowing cleaning solution to spray through the loosened caps.
4. Drain tank completely.
5. Add enough clean water to the spray tank to allow all hoses, booms, screens and nozzles to be flushed for 2 minutes.
6. Remove all nozzles and screens and rinse them in clean water.

Thoroughly clean spray equipment, including all tanks, hoses, booms, screens and nozzles, before it is used to apply postemergence pesticides. Equipment with *Fierce* MTZ Herbicide residue remaining in the system may result in crop injury to the subsequently treated crop.

## SPRAY DRIFT

### Aerial Application

- Do not release spray at a height greater than 10 feet above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- Applicators are required to use a coarse or coarser droplet size (ASABE S572.1).
- The boom length must not exceed 65% of the wingspan for airplanes or 75% of the rotor blade diameter for helicopters.
- Applicators must use 1/2 swath displacement upwind at the downwind edge of the field.
- Nozzles must be oriented so the spray is directed toward the back of the aircraft.
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.

### Ground Boom Applications

- Apply with the nozzle height specified by the manufacturer, but no more than 3 feet above the ground or crop canopy. For all other ground applications, the nozzle must be no more than 3 feet from the target vegetation.
- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.

## SPRAY DRIFT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.

BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

- Do not apply this product by air within 40 ft of non-target plants including non-target crops.
- Do not apply this product by air within 100 ft of emerged cotton crops.
- Do not apply this product by air within 40 ft of streams, wetlands, marshes, ponds, lakes and reservoirs.

## IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

### Controlling Droplet Size – Ground Boom

- Volume – Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure – Use the lowest spray pressure specified for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle – Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

### Controlling Droplet Size – Aircraft

- Adjust Nozzles – Follow nozzle manufacturer's directions for setting up nozzles. To reduce fine droplets, orient nozzles parallel with the airflow in flight.

### BOOM HEIGHT – Ground Boom

For ground equipment, the boom should remain level with the crop and have minimal bounce.

### RELEASE HEIGHT – Aircraft

Higher release heights increase the potential for spray drift.

### SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

### TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

### TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or 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. Avoid applications during temperature inversions.

### WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. The pesticide 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, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

### NON-TARGET ORGANISM ADVISORY STATEMENT

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated area. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

**Adjuvants and Drift Control Additives:** Refer to tank mix partner's label for adjuvant specifications. Drift control additives may be used. When a drift control additive is used, read and carefully observe the cautionary statements and all other information appearing on the additive label.

**Table 1. Weeds Controlled or Suppressed by Residual Activity of Fierce MTZ Herbicide**

Common Name	Scientific Name	Fierce MTZ Herbicide Rates		
		1 pt/A	1.25 pt/A	1.5 pt/A
		C = Control or S = Suppression		
<b>BROADLEAF WEED SPECIES</b>				
Bristly Starbur	<i>Acanthospermum hispidum</i>	S	S	S
Carpetweed	<i>Mollugo verticillata</i>	C	C	C
Chickweeds				
Common	<i>Stellaria media</i>	C	C	C
Mouseear	<i>Cerastium vulgatum</i>	C	C	C
Coffee Senna	<i>Cassia occidentalis</i>	S	C	C
Copperleaf, Hophornbeam	<i>Acalypha ostryifolia</i>	S	S	S
Dandelion	<i>Taraxacum officinale</i>	C	C	C
Eclipta	<i>Eclipta prostrata</i>	C	C	C
Evening-primrose, Cutleaf	<i>Oenothera laciniata</i>	C	C	C
Florida Beggarweed	<i>Desmodium tortuosum</i>	S	C	C
Florida Pusley	<i>Richardia scabra</i>	C	C	C
Golden Crownbeard	<i>Verbesina encelioides</i>	S	C	C
Hairy Indigo	<i>Indigofera hirsuta</i>	S	C	C
Hemp Sesbania	<i>Sesbania exaltata</i>	C	C	C
Henbit	<i>Lamium amplexicaule</i>	C	C	C
Jimsonweed	<i>Datura stramonium</i>	C	C	C
Kochia	<i>Kochia scoparia</i>	C	C	C
Lambsquarters, Common	<i>Chenopodium album</i>	C	C	C
Little Mallow	<i>Malva parviflora</i>	C	C	C
Marestail/Horseweed	<i>Conyza canadensis</i>	C	C	C
Morningglories <sup>1</sup>				
Entireleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>	S	C	C
Ivyleaf	<i>Ipomoea hederacea</i>	S	C	C
Red/Scarlet	<i>Ipomoea coccinea</i>	S	C	C
Tall	<i>Ipomoea purpurea</i>	S	C	C
Mustard, Wild	<i>Brassica kaber</i>	C	C	C
Nightshades				
Black	<i>Solanum nigrum</i>	C	C	C
Eastern Black	<i>Solanum ptycanthum</i>	C	C	C
Hairy	<i>Solanum sarrachoides</i>	C	C	C

(continued)

<sup>1</sup> Morningglory species are not adequately controlled on fine soils or soils with greater than 3% organic matter.



**Table 1. Weeds Controlled or Suppressed by Residual Activity of Fierce MTZ Herbicide (continued)**

Common Name	Scientific Name	Fierce MTZ Herbicide Rates		
		1 pt/A	1.25 pt/A	1.5 pt/A
		C = Control or S = Suppression		
<b>BROADLEAF WEED SPECIES</b>				
Pigweed				
Palmer Amaranth	<i>Amaranthus palmeri</i>	C	C	C
Redroot	<i>Amaranthus retroflexus</i>	C	C	C
Smooth	<i>Amaranthus hybridus</i>	C	C	C
Spiny Amaranth	<i>Amaranthus spinosus</i>	C	C	C
Tumble	<i>Amaranthus albus</i>	C	C	C
Common Waterhemp	<i>Amaranthus rudis</i>	C	C	C
Prickly Sida (Teaweed)	<i>Sida spinosa</i>	C	C	C
Puncturevine	<i>Tribulus terrestris</i>	C	C	C
Purslane, Common	<i>Portulaca oleracea</i>	C	C	C
Radish, Wild	<i>Raphanus raphanistrum</i>	C	C	C
Ragweeds				
Common	<i>Ambrosia artemisiifolia</i>	C	C	C
Giant	<i>Ambrosia trifida</i>	S	S	S
Redmaids	<i>Calandrinia ciliata</i> var. <i>menziessii</i>	C	C	C
Russian Thistle	<i>Salsola iberica</i>	S	C	C
Shepherd's-purse	<i>Capsella bursa-pastoris</i>	C	C	C
Smallflower Morningglory	<i>Jacquemontia tamnifolia</i>	C	C	C
Spotted Spurge	<i>Euphorbia maculata</i>	C	C	C
Smartweeds				
Ladysthumb	<i>Polygonum persicaria</i>	S	S	S
Pennsylvania	<i>Polygonum pennsylvanicum</i>	S	S	S
Spurred Anoda	<i>Anoda cristata</i>	S	C	C
Tropic Croton	<i>Croton glandulosus</i>	S	C	C
Velvetleaf	<i>Abutilon theophrasti</i>	C	C	C
Venice Mallow	<i>Hibiscus trionum</i>	C	C	C
Wild Buckwheat	<i>Polygonum convolvulus</i>	S	S	S
Wild Poinsettia	<i>Euphorbia heterophylla</i>	S	C	C
Wormwood, Biennial	<i>Artemisia biennis</i>	S	S	S

(continued)

**Table 1. Weeds Controlled or Suppressed by Residual Activity of Fierce MTZ Herbicide (continued)**

Common Name	Scientific Name	Fierce MTZ Herbicide Rates		
		1 pt/A	1.25 pt/A	1.5 pt/A
C = Control or S = Suppression				
<b>GRASS WEED SPECIES</b>				
Barnyardgrass	<i>Echinochloa crus-galli</i>	C	C	C
Bluegrass, Annual	<i>Poa annua</i>	C	C	C
Cheat	<i>Bromus secalinus</i>	C	C	C
<b>Crabgrass</b>				
Large	<i>Digitaria sanguinalis</i>	C	C	C
Smooth	<i>Digitaria ischaemum</i>	C	C	C
Cupgrass, Southwestern	<i>Eriochloa gracilis</i>	C	C	C
Downy Brome	<i>Bromus tectorum</i>	C	C	C
<b>Foxtails</b>				
Giant	<i>Setaria faberi</i>	C	C	C
Green	<i>Setaria viridis</i>	C	C	C
Yellow	<i>Setaria glauca</i>	C	C	C
Goosegrass	<i>Eleusine indica</i>	C	C	C
Johnsongrass (seedling)	<i>Sorghum halepense</i>	C	C	C
Lovegrass, California	<i>Eragrostis diffusa</i>	C	C	C
<b>Panicums</b>				
Fall	<i>Panicum dichotomiflorum</i>	C	C	C
Texas	<i>Panicum texanum</i>	C	C	C
Red Rice	<i>Oryza sativa</i>	C	C	C
<b>Ryegrass</b>				
Italian	<i>Lolium multiflorum</i>	C	C	C
Rigid	<i>Lolium rigidum</i>	C	C	C
Signalgrass, Broadleaf	<i>Brachiaria platyphylla</i>	C	C	C

**SOIL TEXTURES**

Application rates of Fierce MTZ Herbicide vary depending on soil type and organic matter, soil textures are defined as:

Coarse and Medium	Fine
sandy loam, loamy sand, loamy, silt-loam, silt, sandy clay, sandy clay loam	silty clay, silty clay loam, clay, clay loam

**DIRECTIONS FOR FIELD CORN (NO-TILL AND MINIMUM TILL)**

**RESTRICTIONS**

- Do not apply more than 1.5 pt of Fierce MTZ Herbicide per acre per year.
- Do not make more than 1 application of Fierce MTZ Herbicide per year.
- Do not use on popcorn, sweet corn or corn grown for seed.
- Do not apply after crop has emerged.
- Field corn treated with Fierce MTZ Herbicide maybe grazed or harvested for silage or grain 60 days after treatment.
- Do not apply on coarse textured soils with less than 1.5% organic matter.
- Do not apply on soils having pH 7.0 or greater.
- Low-pressure, high volume hand wand equipment is prohibited.

## PRECAUTIONS

- Use only on no-till or minimum tillage fields where last year's crop residue has not been incorporated into the soil.
- Use on soils with less than 1% organic matter only after an activation rainfall or irrigation of 1/2 inch or more water has occurred between application and planting.
- In the states of AR, LA, MS, OK or TX, corn may be planted within 30 days of *Fierce* MTZ Herbicide application if planting on raised beds. If not planting on raised beds, plant 30 days after *Fierce* MTZ Herbicide application.
- In the states of AL, FL and GA, corn may be planted within 30 days of *Fierce* MTZ Herbicide application if strip tillage has occurred between application and planting. If strip tillage has not occurred, plant 30 days.

## SPRING BURNDOWN USE DIRECTIONS – For Pre-plant Applications in Field Corn

Use *Fierce* MTZ Herbicide as part of a burndown program for residual weed control and to assist in postemergence burndown of many weeds where field corn will be planted directly into the residue of the previous year. See Directions for Use in Fall Burndown and Fallow Land for rates and timing of applications. For control of emerged weeds, apply *Fierce* MTZ Herbicide with an appropriate burndown tank mix partner. To ensure thorough coverage, use a minimum of 15 gallons of spray solution per acre.

Apply *Fierce* MTZ Herbicide at 1 to 1.5 pt/A early pre-plant. Plant corn between 7 and 30 days after application unless the application is made as part of a fall burndown program.

## TANK MIXES

*Fierce* MTZ Herbicide may be tank mixed with 2,4-D LVE, atrazine, dicamba, simazine, glyphosate, clopyralid, or paraquat, for pre-plant burndown applications. Refer to tank mix product labels for specific use directions and weeds controlled.

## DIRECTIONS FOR SOYBEAN (NO-TILL, MINIMUM TILL AND CONVENTIONAL TILL)

### RESTRICTIONS

- Do not apply more than 1.5 pt of *Fierce* MTZ Herbicide per acre per year.
- Do not make more than 1 application of *Fierce* MTZ Herbicide per year.
- Do not graze treated soybean fields or feed treated forage or hay to livestock within 40 days of treatment.
- Do not irrigate when soybeans are cracking.

### PRECAUTIONS

- Soybean injury may occur if *Fierce* MTZ Herbicide is used in the same field that chloroacetamide herbicides such as flufenacet *s*-metolachlor or dime-thenamid will be used preemergence.
- Severe injury will occur if *Fierce* MTZ Herbicide is applied when soybeans have begun to crack.

- Injury may occur when:
  - soils have a calcareous surface area or a pH of 7.5 or higher.
  - applied in conjunction with soil-applied organic phosphate pesticides.
  - applied to any soil with less than 0.5% organic matter.
  - soybeans are planted less than 1-1/2 inches deep.
  - heavy rains occur soon after application, especially in poorly drained areas where water may stand for several days.

## SPRING BURNDOWN USE DIRECTIONS – For Pre-plant Applications in Soybean

Use 1 to 1.5 pt/A of *Fierce* MTZ Herbicide as part of a burndown program, for residual weed control and to assist in postemergence burndown of many annual and perennial weeds where soybeans will be planted directly into the residue of the previous year. See Directions for Use in Fall Burndown and Fallow Land for rates and timing of applications. For control of emerged weeds, apply *Fierce* MTZ Herbicide with an appropriate burndown tank mix partner. To ensure thorough coverage, use a minimum of 10 gallons of spray solution per acre.

## PREEMERGENCE USE DIRECTIONS

Apply 1 to 1.5 pt/A of *Fierce* MTZ Herbicide to soybeans early pre-plant, prior to planting or preemergence. Preemergence application of *Fierce* MTZ Herbicide must be made within 3 days after planting and prior to soybean emergence.

## TANK MIXES

*Fierce* MTZ Herbicide may be tank mixed with chlorimuron, pendimethalin, clomazone, imazethapyr, clo-ransulam, linuron, flumioxazin, and pyroxasulfone for additional residual control, *Fierce* MTZ Herbicide may be tank mixed with chlorimuron, cloransulam, 2,4-D, dicamba, glyphosate, and glufosinate for additional burndown control. Refer to tank mix product labels for specific use directions and weeds controlled.

## DIRECTIONS FOR USE IN FALL BURNDOWN AND FALLOW LAND

Apply 1 to 1.5 pt/A of *Fierce* MTZ Herbicide in the fall to provide residual weed control in fields that will be planted the following spring as identified in the Crop Rotational Interval Table. Weeds controlled or suppressed by residual activity are listed in Table 1, Weeds Controlled or Suppressed by Residual Activity of *Fierce* MTZ Herbicide. If weeds have emerged at the time of application, use *Fierce* MTZ Herbicide in combination with a labeled burndown herbicide. Abnormally warm or wet winters will reduce the length of weed control observed in the spring.

## TANK MIXES

*Fierce* MTZ Herbicide, applied as part of a burndown program, may be used for residual weed control, as well as to assist in postemergence burndown of many annual and perennial weeds where crops will be planted directly into a stale seedbed, cover

crop or in previous crop residues. Choose the most appropriate tank mix partner for control of emerged weeds. To ensure thorough coverage, use a minimum of 10 gallons of spray solution per acre.

**DIRECTIONS FOR USE TO MAINTAIN BARE GROUND ON NON-CROP AREAS**

Use *Fierce* MTZ Herbicide to maintain bare ground on non-crop areas for non-selective vegetation control in areas including around farm buildings, along ungrazed fence rows, wind breaks and shelter belts. Follow all directions as outlined in “Use Information” section of this label.

*Fierce* MTZ Herbicide offers residual and postemergence control of susceptible broadleaf and grass weeds as well as an additional mode of action to assist in the control of ALS (Group 2) resistant weeds. *Fierce* MTZ Herbicide can be tank mixed for increased residual or postemergence control. The length of residual control is dependent on the rate applied as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase. *Fierce* MTZ Herbicide rates of 1 to 1.5 pt/A are required to provide residual control of the weeds listed in Table 1, Weeds Controlled or Suppressed by Residual Activity of *Fierce* MTZ Herbicide.

**RESTRICTIONS**

- Do not apply more than 1.5 pt per acre per year.
- Do not apply more than 1 application per year.
- Do not apply to farm alleys or roads where traffic may result in treated dust settling onto crops or other desirable vegetation.
- Do not apply to ditch banks.
- Low-pressure, high volume hand wand equipment is prohibited.

**APPLICATION RATE AND TIMING**

Apply 1 to 1.5 pt/A of *Fierce* MTZ Herbicide per broadcast acre prior to weed germination. Moisture is necessary to activate *Fierce* MTZ Herbicide on soil for residual weed control. Dry weather following application of *Fierce* MTZ Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, *Fierce* MTZ Herbicide will suppress susceptible germinating weeds. If weeds are present at time of application, control is affected by spray coverage and by the addition of an adjuvant (0.25% v/v non-ionic surfactant or 1 qt/A crop oil concentrate). The most effective weed control with *Fierce* MTZ Herbicide occurs when applied in combination with an adjuvant to weeds less than 2 inches in height. A tank mix partner must be used in combination with *Fierce* MTZ Herbicide for control of weeds larger than 2 inches. Completely read and follow the label of any potential tank mix partner with *Fierce* MTZ Herbicide. When using tank mixtures, use conditions must be in accordance with the most restrictive of the label limitations and precautions on either herbicide label.

**CROP ROTATIONAL INTERVAL TABLE**

The following rotational crops may be planted after applying *Fierce* MTZ Herbicide at the listed rate. Planting earlier than the recommended rotational interval may result in crop injury.

Crops	<i>Fierce</i> MTZ Herbicide Use Rates Interval Months		
	1 pt/A	1.25 pt/A	1.5 pt/A
Alfalfa	10	10	10
Corn, Field (conventional till)	1	1	1
Corn, Field (minimum/no till)	7 days	1	1
Edible Peas and other edible beans	11	11	11
Grass grown for seed	18	18	18
Lentils	8	8	8
Potato	12	12	12
Rice	12	12	12
Small Grains (other than wheat)	11	12	12
Soybean	0	0	0
Wheat	8	8	8
Other crops not listed above	18	18	18

**CROP FAILURE**

If the crop treated with *Fierce* MTZ Herbicide is lost due to a catastrophe, such as hail or other forms of inclement weather refer to Crop Rotational Interval Table for re-plant intervals.

## STORAGE AND DISPOSAL

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

### PESTICIDE STORAGE

Keep pesticide in original container.

Store in a cool, dry, secure place.

Do not put formulation or dilute spray solution into food or drink containers.

Do not contaminate food or foodstuffs.

Do not store or transport near feed or food.

Not for use or storage in or around the home.

For help with any spill, leak, fire or exposure involving this material, call day or night (800) 892-0099.

### PESTICIDE DISPOSAL

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

### CONTAINER HANDLING

Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. 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 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or 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.

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Manufactured for:

**Valent U.S.A. LLC**

P.O. Box 8025

Walnut Creek CA 94596-8025

Made in U.S.A.

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