

60063-52

12/21/2012

1/25



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs
Registration Division (7505P)
Ariel Rios Building
1200 Pennsylvania Ave., NW
Washington, D.C. 20460

EPA Reg. Number:

60063-52

Date of Issuance:

DEC 21 2012

NOTICE OF PESTICIDE:

[x] Registration
[ ] Reregistration
(under FIFRA, as amended)

Term of Issuance: Unconditional

Name of Pesticide Product:

Stalwart MTZ

Joseph W. Burley
Sipcam Agro USA, Inc
2520 Meridian Parkway, Suite 525
Durham, NC 27713

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(5) provided that you:

- 1. Submit and/or cite all data required for registration/re-registration review of your product when the Agency requires all registrants of similar products to submit data.
2. Revise the EPA Reg. No. to 60063-52
3. Assure that the establishment number and net content are also added to the label.
4. Make the following label changes:
- Add the following statements to the front panel of the label:
- Contains Petroleum Distillates
- Do not store or use near open flame
- In the PPE section, add the following after "chemical-resistant gloves": "(such as Barrier Laminate, Butyl Rubber, Nitrile Rubber, Viton or other Selection Category F)"
- The early-entry PPE requirements in the Agricultural Use Requirements box should read:
- Coveralls, Chemical-resistant gloves such as barrier laminate or viton, and shoes plus socks
5. Within 18 months from the date of this Notice, submit storage stability (830.6317) and corrosion characteristics (830.6320) studies. It is recommended that the observation be made at 0,3,6,9 and 12 month intervals.

Comments Continued on Page 2

Kathryn V. Montague
Product Manager 23
Herbicide Branch
Registration Division (7505P)
Office of Pesticide Programs

[Handwritten signature of Kathryn V. Montague]

Date:

DEC 21 2012

60063-52

Page 2

2/25

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records. Submit one (1) copy of the final printed label before you release the product for shipment.

If you have any questions regarding this notice, please contact Grant Rowland at (703) 347-0254 or at [rowland.grant@epa.gov](mailto:rowland.grant@epa.gov).

3/25

ACCEPTED  
with COMMENTS  
In EPA Letter Dated:  
DEC 21 2012  
Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.



**SIPCAM AGRO USA, INC.**

**GROUP 5 15 HERBICIDES**

60063-52

**Stalwart® MTZ**  
Herbicide

**For Control of Certain Grasses and Broadleaf Weeds in Potatoes and Soybeans**

**Active Ingredient:**

Metolachlor: 2-chloro- N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl) acetamide .....	58.2%
Metribuzin: 4-Amino-6-tert-butyl-3-methylthio-1,2,4-triazin-5-on .....	13.8%
<b>Other Ingredients:</b> .....	<b>28.0%</b>
<b>Total:</b> .....	<b>100.0%</b>

This product contains 5.25 lbs. of metolachlor and 1.25 lbs of metribuzin per gallon.

**KEEP OUT OF REACH OF CHILDREN**

**WARNING - AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en dtalle.  
(If you do not understand the label, find someone to explain it to you in detail).

See additional precautionary statements and directions for use inside booklet.

**Net Contents: 2.5 Gallons (9.46 Liters)**

EPA Reg. No. 60063-52  
EPA Est. No.

Sipcam Agro USA, Inc.  
2520 Meridian Parkway, Suite 525  
Durham, NC 27713

4/25

<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 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 mouth to mouth if possible.</li> <li>• Call a poison control center or doctor for further 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>Emergency phone numbers</b>	(800) 424-9300 CHEMTREC (transportation and spills) (800) 858-7378 NPIC (human and animal health)
<b>Note to Physician:</b> May pose an aspiration pneumonia hazard. Contains petroleum distillate.	

**PRECAUTIONARY STATEMENTS**  
**Hazards to Humans and Domestic Animals**  
**WARNING - AVISO**

Causes substantial but temporary eye injury. Harmful if swallowed. Do not get in eyes or on clothing. Wear protective eye wear \*(goggles, face shield, or safety glasses). Wash thoroughly with soap and water after handling and before eating, drinking chewing, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

This product may cause skin sensitization reactions in some people.

**PERSONAL PROTECTIVE EQUIPMENT**

**Applicators and other handlers must wear:**

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves
- Chemical-resistant footwear plus socks
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, mixing, or loading

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

5/25

When applicators use enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(5)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**User Safety Recommendations**

**Users should:**

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

**ENVIRONMENTAL HAZARDS**

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water and rinsate.

**Ground Water Advisory**

Metolachlor has the potential to leach through soil and can contaminate 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 enter 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. Your local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

**Surface Water Advisory**

Metolachlor has the potential to contaminate surface water through ground spray drift. Under some conditions, 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 overlying 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 overlying 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 must not be mixed or 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

6/25

washwater, and rainwater 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 sites.

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

Applicators and other handlers must wear:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves
- Chemical-resistant footwear plus socks
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, mixing, or loading

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

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

### PRODUCT INFORMATION

**Note:** Tank mixtures are permitted only in those states where the tank mix partner is registered. Refer to and follow the label for each tank mix product used for precautionary statements, directions for use, geographic and other restrictions.

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 1/2 inch of rainfall has occurred between application and the first irrigation.

Mix only enough spray solution for the required application. Ensure that the spray equipment is clean prior to use. Maintain vigorous agitation in the spray tank during mixing and during application. Do not allow the spray solution to sit in the spray tank overnight. Always clean the spray system rigorously after each use. Dispose of system rinsate on a previously treated area.

### MIXING PROCEDURES

Stalwart MTZ is a liquid that may be mixed with water or fluid fertilizer and applied as a spray. Stalwart MTZ may also be sprayed onto dry bulk granular fertilizer and applied with the granular fertilizer.

#### Dry Bulk Granular Fertilizers

Many dry bulk granular fertilizers may be impregnated or coated with Stalwart MTZ and used to control weeds in corn.

When applying Stalwart MTZ with dry bulk granular fertilizers, follow all directions for use and precautions on the Stalwart MTZ label regarding target crops, rates per acre, soil texture, application methods (including timing of application), and rotational crops.

All individual state regulations relating to dry bulk granular fertilizer blending, registration, labeling, and application are 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 Stalwart MTZ onto the fertilizer must be placed to provide uniform spray coverage. Care should be taken to aim the spray directly onto the fertilizer only and to avoid spraying the walls of the blender.

If the herbicide/fertilizer mixture is too wet, add a highly absorptive material, such as Agsorb® 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 material 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 Stalwart MTZ to be used by the following formula:

$$\frac{2,000}{\text{lbs. of fertilizer per acre}} \times \text{pts./A of Stalwart MTZ} = \text{pts. of Stalwart MTZ per ton of fertilizer}$$

8/25

### **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 **Stalwart MTZ** with Exxon Aromatic 200 at a rate of 2.0-2.5 pts./gal. of **Stalwart MTZ**. 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. Consult the manufacturer's MSDS for information relating to the flammability of this solvent.

**Notes:** (1) Mixtures of **Stalwart MTZ** 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 **Stalwart MTZ** in a blender before application, a drier mixture can be attained by substituting a drying agent for Aromatic 200. The use of Agsorb FG or drying agents 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 **Stalwart MTZ** on ammonium nitrate, potassium nitrate, or sodium nitrate, either alone or in blends with other fertilizers. (2) Do not combine **Stalwart MTZ** with a single superphosphate (0-20-0) or treble superphosphate (0-46-0). (3) Do not use **Stalwart MTZ** on straight limestone, since absorption will not be achieved. Fertilizer blends containing limestone can be impregnated.*

### **Application**

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 or 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: (1) To help avoid rotational crop injury, make applications as early as possible, since **Stalwart MTZ** impregnated onto dry bulk granular fertilizers can be expected to last longer in the soil than when **Stalwart MTZ** is applied as a spray in water or fluid fertilizer.*

### **Application in Water or Fluid Fertilizers**

**Stalwart MTZ Alone:** Fill the spray tank 1/3 full with water or fluid fertilizer, Start the agitator and add the required amount of **Stalwart MTZ** followed by the rest of the water or fluid fertilizer. Provide sufficient agitation during mixing and application to maintain a uniform suspension.

**Tank Mixtures:** Fill the spray tank 1/3 full with water or fluid fertilizer. Start the agitator and add the required amounts of tank mix partners. **In general**, tank mix partners should be added in the following sequence: products packaged in water soluble packages, wettable powders, wettable granules (dry flowables), liquid flowables, liquids such as **Stalwart MTZ** and emulsion concentrates. Always allow each tank mix partner to fully disperse before adding the next product. Maintain sufficient agitation while adding the remainder of the water or fluid fertilizer and to ensure the formation of a uniform suspension.

**Note:** Water soluble packaging will not dissolve in most fluid fertilizers. If products in water soluble packaging are to be tank mixed with **Stalwart MTZ**, add the products in water soluble packaging to



9/25

water only. Ensure that the water soluble packaging is totally dissolved and the product completely dispersed before adding other tank mix partners and Stalwart MTZ.

Always refer to the labels of the tank mix partner products for maximum use rates, directions for use, precautionary statements, geographic and other restrictions.

### Compatibility Test

A jar test is recommended before tank mixing to ensure compatibility of **Stalwart MTZ** 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. Since liquid fertilizers vary, even within the same analysis, **always check compatibility with pesticide(s) each time before use.** Incompatibility of tank mixtures is more common with suspensions of fertilizer and pesticides. Commercial application equipment may improve compatibility in some instances. Check compatibility using this 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 1 /4 tsp. or 1.2 milliliters of a compatibility agent approved for this use (1 /4 tsp. is equivalent to 2.0 pts./100 gals. spray). Shake or stir gently to mix. When an adjuvant is to be used with this product, Sipcarn Agro USA recommends the use of Compex®, Unite® or a Chemical Producers and Distributors Association (CPDA) certified adjuvant.
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 herbicides first, flowables next, and emulsifiable concentrates last. After each addition, shake or stir gently to thoroughly mix. The appropriate amount of herbicides for this test follows:

**Dry herbicides:** For each pound to be applied per acre, add 1.5 level teaspoons to each jar.

**Liquid herbicides:** For each pint to be applied per acre, add 0.5 teaspoon or 2.5 milliliters to each jar.

4. After adding all ingredients, put lids on and tighten, and invert each jar 10 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 2 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 of 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.

## APPLICATION INFORMATION

**Ground Application:** Use sprayers that provide accurate and uniform application. Screens in nozzles and in suction and in-line strainers should be no finer than 50-mesh. Use a pump with capacity to: (1) maintain 35-40 psi at the nozzles, and (2) provide sufficient agitation in tank to keep mixture in

10/25

suspension. Unless otherwise specified, use a minimum of 10 gals. of spray mixture per acre. Rinse sprayer thoroughly with clean water immediately after use.

For band applications, calculate amount to be applied per acre as follows:

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

**Center Pivot Irrigation Application**

If chemigating apply this product only through a center pivot irrigation system. Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

DO NOT apply this product through irrigation systems connected to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. 'Public water system' means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days per year.

Controls for both irrigation water and pesticide injection systems must be functionally interlocked, so as to automatically terminate pesticide injection when the irrigation water pump motor stops. A person knowledgeable of the irrigation system and responsible for its operation shall be present so as to discontinue pesticide injection and make necessary adjustments, should the need arise.

The irrigation water pipeline must be fitted with a functional, automatic, quick-closing check valve to prevent the flow of treated irrigation water back toward the water source. The pipeline must also be fitted with a vacuum relief valve and low pressure drain, located between the irrigation water pump and the check valve, to prevent back-siphoning of treated irrigation water into the water source.

Always inject Stalwart MTZ into irrigation water after it discharges from the irrigation pump and after it passes through the check valve. Never inject pesticides into the intake line on the suction side of the pump.

Pesticide injection equipment must be fitted with a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump. Interlock this valve to the power system, so as to prevent fluid from being withdrawn from the chemical supply tank when the irrigation system is either automatically or manually turned off.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump, or piston pump) effectively designed and constructed of materials that are chemically compatible with pesticides and capable of being fitted with a system interlock.

Spray mixture in the chemical supply tank must be agitated at all times, otherwise settling and uneven application may occur. DO NOT apply when wind speed favors drift beyond the area

11/25

intended for treatment. Apply in 1/2 to 1 inch of water. Use the lower volume of water on coarse textured soils and the higher volume on fine textured soils. Use of more than 1 inch of water may reduce weed control by moving the herbicide below the effective zone in the soil.

Fill chemical supply tank of injection equipment with water. Operate system for one complete revolution, measuring time required, amount of water injected, and acreage covered. Thoroughly mix recommended amount of Stalwart MTZ for acreage to be covered into same amount of water used during calibration and inject into system continuously for one revolution or run. Mixture in the chemical supply tank must be continuously agitated during the injection run. Shut off injection equipment after one revolution, but continue to operate irrigation system until Stalwart MTZ has been cleared from last sprinkler head.

Caution: Where sprinkler irrigation patterns do not overlap sufficiently, unacceptable weed control may result. Where sprinkler irrigation patterns overlap excessively, crop injury may result.

**Aerial Application:** Apply a minimum of 1.0 gal. of water for each 1.0 gal. of this product applied per acre, but for rates below 1.0 gal./A, use in sufficient water to equal 2.0 gals./A of total spray. Avoid applications under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur. In order to assure that spray will be controllable within the target area when used according to label directions, make applications at a maximum height of 10 ft., using low-drift nozzles at a maximum pressure of 40 psi.

Avoid application to humans or animals. Flagmen and loaders - 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 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 must 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 must not be made at a height greater than 10 feet 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 downwind. 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 must be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator must 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 must 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

13/25

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**

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

**Cleaning Equipment After Application**

Some non-labeled crops are particularly sensitive to low application rates of Stalwart MTZ. It is essential, therefore that the complete application system is rigorously cleaned following application of Stalwart MTZ and prior to use for crops not on this label.

First, flush the whole system (tank, hoses, boom and nozzles) with clean water. Follow this with a solution of 1 gallon of household ammonia in 50 gallons of water, or use a commercial spray tank cleaner. **Do not** use a chlorine (bleach) based cleaner. Fill the spray tank with the cleaning solution to ensure that **all** surfaces of the spray tank system are contacted with the cleaning solution and circulate this solution for at least 15 minutes until all surfaces are completely clean. Use a pressure washer, if available, to clean the inside of the spray tank, including the upper surface of the tank. Flush hoses, boom and nozzles with the cleaning solution for at least one minute. Repeat the whole cleaning process one time. Clean all screens and nozzles separately in the cleaning solution following the procedure above. Finally flush the whole system with clean water. Dispose of all wash waters according to the directions for such disposal in the Environmental Hazards section of this label.

**CROP ROTATION**

**Table 1: Crop Rotation Intervals<sup>1,3</sup>**

Rotational Interval After Application of Stalwart MTZ <sup>2</sup>			
4.5 Months	8 Months	12 Months	18 Months
winter barley winter wheat alfalfa	corn cotton peas rice spring barley spring wheat	asparagus forage grasses lentils sainfoin sugarcane tomatoes other crops not listed (except root crops)	onions sugar beets other root crops

<sup>1</sup>Cover crops for soil building or erosion control may be planted at 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.

<sup>3</sup>Refer to the specific crop use sections for additional crop rotation precautions.  
Do not rotate to food or feed crops other than those listed on this label

14/25

**Replanting**

If replanting is necessary in fields previously treated with Stalwart MTZ, the field may be replanted to potatoes or soybeans. Before replanting, refer to the specific crop use sections for recommendations restrictions and precautions.

**Activation**

A small amount of rainfall or irrigation is required to activate Stalwart MTZ following application. In areas of low rainfall, a preemergence application should be followed by light irrigation of 0.25 to 0.5 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.

**Potatoes**

Stalwart MTZ is recommended for preemergence weed control prior to or after potato emergence. Stalwart MTZ has some postemergence activity on weeds, but the consistency and spectrum of weed control is much better preemergence to weeds. Preplant incorporated applications are not recommended due to an increased risk of crop injury.

**Preemergence Applications**

Apply with ground spray equipment, aerial spray equipment, or by center pivot irrigation equipment which is capable of making a uniform broadcast application. Apply after planting but before crop emergence, or apply after drag-off if this operation is part of the usual cultural practice.

**Postemergence Applications**

Apply post-emergence only in center pivot irrigation water, after drag-off if that is a usual cultural practice, but not closer than 60 days before harvest. Refer to the "Center Pivot Irrigation Application" section of this label for application information.

<b>Table 2: weeds controlled by Stalwart Mtz</b>			
C=Control S=Suspension or Erratic Control P=Poor or No Control O=No information (Control may range from poor to excellent)			
<b>ANNUAL BROADLEAF WEEDS</b>		<b>ANNUAL GRASSES</b>	
Black Nightshade ( <i>Solanum nigrum</i> )	C	Barnyard Grass ( <i>Echinochloa crus-galli</i> )	C
Bristly Starbur ( <i>Acanthospermum hispidum</i> )	C	Bluegrass ( <i>Poa annua</i> )	C
Buffalobur ( <i>Solanum rostratum</i> )	P	Broadleaf Signalgrass ( <i>Brachiaria platyphylla</i> )	C
Carpetweed ( <i>Mollugo verticillata</i> )	C	Browntop Millet ( <i>Panicum ramosum</i> )	P
Cocklebur ( <i>Xanthium pensylvanicum</i> )	S	Crabgrass ( <i>Digitaria</i> spp.)	C
Copperleaf, Hophornbeam ( <i>Acalypha ostryaefolia</i> )	C	Crowfootgrass ( <i>Dactyloctenium aegyptum</i> )	C
Florida Beggarweed ( <i>Desmodium tortuosum</i> )	C	Cupgrass ( <i>Eriochloa gracillis</i> )	P
Florida Pusley ( <i>Richardia scabra</i> )	C	Foxtails ( <i>Setaria</i> spp.)	C
Galinsoga ( <i>Galinsoga</i> spp.)	C	Goosegrass ( <i>Eleusine indica</i> )	C
Horseweed Marestalk ( <i>Conyza canadensis</i> )	O	Johnsongrass, Seedling ( <i>Sorghum halepense</i> )	C
Jimsonweed ( <i>Datura stramonium</i> )	C	Junglerice ( <i>Echinochloa colonum</i> )	C
Knotweed ( <i>Polygonum</i> spp.)	C	Panicum, Fall ( <i>Panicum dichotomiflorum</i> )	C
Kochia ( <i>Kochia scoparia</i> )	S	Panicum, Texas ( <i>Panicum texanum</i> )	P
Lambsquarters ( <i>Chenopodium</i> spp.)	C	Red Rice ( <i>Oryza sativa</i> )	C
Morningglory, Ivyleaf ( <i>Ipomoea hederacea</i> )	P	Sandbur ( <i>Cenchrus</i> spp.)	P

Morningglory, Pitted ( <i>Ipomoea lacunose</i> )	P	Shattercane ( <i>Sorghum bicolor</i> )	P
Morningglory, Smallflower ( <i>Jacquemontia tamnifolia</i> )	P	Sorghum, Volunteer ( <i>Sorghum spp.</i> )	P
Morningglory, Tall ( <i>Ipomoea purpurea</i> )	P	Sprangletop ( <i>Leptochloa spp.</i> )	P
Pigweeds ( <i>Amaranthus spp.</i> )	C	Stinkgrass ( <i>Eragrostis spp.</i> )	P
Prickly Sida/Teaweed ( <i>Sida spinosa</i> )	C	Wheat, Volunteer ( <i>Triticum spp.</i> )	P
Purslane ( <i>Portulaca oleracea</i> )	C	Witchgrass ( <i>Panicum capillare</i> )	C
Ragweed, Common ( <i>Ambrosia artemisiifolia</i> )	S		
Redweed ( <i>Melochia corchorifolia</i> )	C	<b>SEDGES</b>	
Russian Thistle ( <i>Salsola kali</i> )	C	Nutsedge, Yellow ( <i>Cyperus esculentus</i> )	C
Sesbania ( <i>Sesbania spp.</i> )	C		
Shepherdspurse ( <i>Capsella bursa-pastoris</i> )	C		
Sicklepod ( <i>Cassia obtusifolia</i> )	C		
Smartweeds ( <i>Polygonum spp.</i> )	C		
Spotted Spurge ( <i>Euphorbia maculata</i> )	C		
Spurred Anoda ( <i>Anoda cristata</i> )	C		
Sunflower ( <i>Helianthus spp.</i> )	S		
Velvetleaf ( <i>Abutilon theophrasti</i> )	S		
Venice Mallow ( <i>Hibiscus trionum</i> )	C		
Wild Mustards ( <i>Brassica spp.</i> )	C		
Stalwart Mtz will not provide acceptable control of triazine-resistant biotypes. Suspension: weeds may be stunted in growth or be of reduced populations as compared to non-treated areas but control will generally not be commercially acceptable.			

**Application Rates**

The application rates for Stalwart MTZ for use in potatoes are provided below. Where a rate range is given, use the lower end of the rate range on the more coarse textured soils listed within that group and/or where weed pressures are known to be light; use the high end of the rate range on the more fine textured soils listed within that group and/or where the weeds pressures are known to be heavy.

Soil Texture	0.5 to 3% Organic Matter Pt./A	Over 3% Organic Matter Pt./A
<b>COARSE</b> <sup>1</sup> (Sand, loamy sand, sandy loam)	1.5-2.0	2.0-2.4
<b>MEDIUM or FINE</b> (Loam, silt loam, silt, sandy clay, sandy clay loam, silty clay, silty clay loam, clay, clay loam)	2.4-2.75	2.75-2.9

<sup>1</sup> On soils that classify as a "sand" texture do not use more than 1.5 pt./A of Stalwart MTZ, or more than 0.5 lb. a.i./A of metribuzin in total, or crop injury may occur.

Soil Texture	0.5% Organic Matter and Above Pt./A
<b>COARSE</b> <sup>1</sup> (Sand, loamy sand, sandy loam)	1.5
<b>MEDIUM or FINE</b> (Loam, silt loam, silt, sandy clay, sandy clay loam, silty clay, silty clay loam, clay, clay loam)	1.5-2.2

<sup>1</sup> Crop injury may occur on soils that classify as a "sand" texture and have less than 0.5% organic matter.

16/25

**Precautions (Potatoes):**

1. To avoid crop injury, postemergence applications should be made only on russeted or white skinned varieties of potatoes that are not early maturing. Avoid postemergence applications on Atlantic, Bellchip, Centennial, Chipbelle, Shepody and Superior varieties. Preemergence applications on these varieties may cause crop injury under adverse weather conditions, on coarse soils, under high soil pH and with higher use rates.

2. Potato varieties may vary in their response to a given herbicide application. When using Stalwart MTZ for the first time on a particular variety, always determine crop tolerance before using on a field-scale.

3. The planting of sensitive crops such as lettuce, cole crops and cucurbits during the next growing season following application of Stalwart MTZ may result in injury to that crop.

4. Certain cereal varieties are sensitive to metribuzin (e.g. see cereal section of the Sencor 4 or Sencor DF label) and should not be planted during the next growing season unless the following cultural practices occur:

a. Potato vines left in the row as a result of harvest must be uniformly distributed over the soil surface prior to plowing, and b. Plow with a moldboard plow to a depth sufficient to mix the upper 8 inches of soil.

**Restrictions (Potatoes):**

1. Two applications may be applied per year. For potatoes grown in soils with organic matter between 3% and 10%, do not apply more than 5.1 pints (3.35 lb. a.i. metolachlor) per acre/year; and in soils with organic matter between 0.5% and 3.0% do not apply more than 4.95 pints (3.25 lb. a.i. metolachlor) per acre/year. Do not apply more than 1.0 lb. a.i. of metribuzin per acre/year. Stalwart MTZ is not recommended for application to muck or peat soils.

2. Do not apply Stalwart MTZ postemergence if the weather in the next 3 days is predicted to be cool, wet or cloudy, as crop injury may occur.

3. Do not harvest within 60 days of the last Stalwart MTZ application.

4. Do not apply after June 30 in Idaho, Oregon, or Washington if the treated land will be planted to a crop other than potatoes in the fall.

5. Do not apply Stalwart MTZ to sweet potatoes or yams.

6. Do not apply Stalwart MTZ as a preplant incorporated application in potatoes, or crop injury may occur.

7. Do not use Stalwart MTZ on potatoes in Kern county California

**Tank Mixtures With Other Products Registered for Use in Potatoes**

For pre-emergence applications in potatoes, Stalwart MTZ may be tank mixed with other pesticide products registered for use in this way and timing in potatoes. Follow the directions for use, observe the stated precautions, and abide by the limitations and restrictions on the most restrictive of the product labels. If you have no previous experience mixing these products under your conditions, perform a compatibility test before attempting large-scale mixing (see the Compatibility Test section of this label).

For post-emergence applications (center pivot irrigation applications only), i.e. where potato vines are exposed, there may be increased risk of crop injury from certain product mixtures. At this application timing, tank mix Stalwart MTZ only with pesticide products which allow tank mixing and post-emergence chemigation on their product label. Follow the directions for use, observe the stated precautions, and abide by the limitations and restrictions on the most restrictive of the product labels.



17/25

**Soybean (Except California)**

Stalwart MTZ is a selective herbicide for the control/suppression of annual grasses and selected broadleaf weeds in soybeans. To broaden the spectrum of weeds controlled or increase residual control, Stalwart MTZ is recommended for use in tank mixture with or sequentially with additional registered herbicides.

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

**Grazing and Feeding Treated Soybean Plants**

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

**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 Stalwart MTZ, 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.

**Precautions (Soybeans)**

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

- When soils have a calcareous surface area or a pH of 7.5 or higher.
- Due to the sensitivity of certain soybean varieties, Stalwart MTZ 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 Stalwart MTZ) before using Stalwart MTZ.
- When applied in conjunction with soil-applied organic phosphate pesticides.
- Uneven application or improper incorporation of Stalwart MTZ can decrease the level of weed control and/or increase the level of crop injury.
- When applied to any soil with less than 0.5% organic matter.
- Where soil incorporation is deeper than recommended.
- When sprayers were not calibrated accurately.
- When heavy rains occur soon after application, especially in poorly drained areas where water may stand for several days.
- When soybeans are planted less than 1-1/2" deep, particularly when Stalwart MTZ is applied pre-emergence.
- Where high soil levels of atrazine are present.
- When using poor quality soybean seed.

<b>Table 5: weeds controlled by Stalwart Mtz</b>			
C=Control S=Suspension or Erratic Control P=Poor or No Control O=No information (Control may range from poor to excellent)			
ANNUAL BROADLEAF WEEDS		ANNUAL GRASSES	
Black Nightshade ( <i>Solanum nigrum</i> )	C	Barnyard Grass ( <i>Echinochloa crus-galli</i> )	C
Bristly Starbur ( <i>Acanthospermum hispidum</i> )	C	Bluegrass ( <i>Poa annua</i> )	C
Buffalobur ( <i>Solanum rostratum</i> )	P	Broadleaf Signalgrass ( <i>Brachiaria platyphylla</i> )	C
Carpetweed ( <i>Mollugo verticillata</i> )	C	Browntop Millet ( <i>Panicum ramosum</i> )	P
Cocklebur ( <i>Xanthium pensylvanicum</i> )	S	Crabgrass ( <i>Digitaria spp.</i> )	C

18/25

Copperleaf, Hophornbeam ( <i>Acalypha ostryaefolia</i> )	C	Crowfootgrass ( <i>Dactyloctenium aegyptum</i> )	C
Florida Beggarweed ( <i>Desmodium tortuosum</i> )	C	Cupgrass ( <i>Eriochloa gracillis</i> )	P
Florida Pusley ( <i>Richardia scabra</i> )	C	Foxtails ( <i>Setaria</i> spp.)	C
Galinsoga ( <i>Galinsoga</i> spp.)	C	Goosegrass ( <i>Eleusine indica</i> )	C
Horseweed Maretail ( <i>Conyza canadensis</i> )	O	Johnsongrass, Seedling ( <i>Sorghum halepense</i> )	C
Jimsonweed ( <i>Datura stramonium</i> )	C	Junglerice ( <i>Echinochloa colonum</i> )	C
Knotweed ( <i>Polygonum</i> spp.)	C	Panicum, Fall ( <i>Panicum dichotomiflorum</i> )	C
Kochia ( <i>Kochia scoparia</i> )	S	Panicum, Texas ( <i>Panicum texanum</i> )	P
Lambsquarters ( <i>Chenopodium</i> spp.)	C	Red Rice ( <i>Oryza sativa</i> )	C
Morningglory, Ivyleaf ( <i>Ipomoea hederacea</i> )	P	Sandbur ( <i>Cenchrus</i> spp.)	P
Morningglory, Pitted ( <i>Ipomoea lacunose</i> )	P	Shattercane ( <i>Sorghum bicolor</i> )	P
Morningglory, Smallflower ( <i>Jacquemontia tamnifolia</i> )	P	Sorghum, Volunteer ( <i>Sorghum</i> spp.)	P
Morningglory, Tall ( <i>Ipomoea purpurea</i> )	P	Sprangletop ( <i>Leptochloa</i> spp.)	P
Pigweeds ( <i>Amaranthus</i> spp.)	C	Stinkgrass ( <i>Eragrostis</i> spp.)	P
Prickly Sida/Teaweed ( <i>Sida spinosa</i> )	C	Wheat, Volunteer ( <i>Triticum</i> spp.)	P
Purslane ( <i>Portulaca oleracea</i> )	C	Witchgrass ( <i>Panicum capillare</i> )	C
Ragweed, Common ( <i>Ambrosia artemisiifolia</i> )	S		
Redweed ( <i>Melochia corchorifolia</i> )	C	<b>SEDGES</b>	
Russian Thistle ( <i>Salsola kali</i> )	C	Nutsedge, Yellow ( <i>Cyperus esculentus</i> )	C
Sesbania ( <i>Sesbania</i> spp.)	C		
Shepherdspurse ( <i>Capsella bursa-pastoris</i> )	C		
Sicklepod ( <i>Cassia obtusifolia</i> )	C		
Smartweeds ( <i>Polygonum</i> spp.)	C		
Spotted Spurge ( <i>Euphorbia maculata</i> )	C		
Spurred Anoda ( <i>Anoda cristata</i> )	C		
Sunflower ( <i>Helianthus</i> spp.)	S		
Velvetleaf ( <i>Abutilon theophrasti</i> )	S		
Venice Mallow ( <i>Hibiscus trionum</i> )	C		
Wild Mustards ( <i>Brassica</i> spp.)	C		
Stalwart Mtz will not provide acceptable control of triazine-resistant biotypes. Suspension: weeds may be stunted in growth or be of reduced populations as compared to non-treated areas but control will generally not be commercially acceptable.			

**Stalwart MTZ Foundation Program for Planned 2-Pass Weed Control Systems**

Stalwart MTZ may be applied preplant incorporated or preemergence at 1.5-1.8 pt./A on all soils to reduce competition from the weeds listed in Table 5 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® or Touchdown® or other glyphosate brands (for use only on Roundup Ready® or glyphosate tolerant soybean varieties). Follow all application directions for Stalwart MTZ 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 1.5 pt./A rate only.

19/25

**Stalwart MTZ in Conventional Tillage Systems**

**Preplant Incorporated Application**

Incorporate Stalwart MTZ uniformly into the top 2 inches of soil within 14 days before planting using a disk, field cultivator, rolling cultivator, or similar implement. Apply Stalwart MTZ 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**

Rainfall (1/2 inch or more) is necessary for herbicide activation. Dry weather following preemergence application of Stalwart MTZ 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 6: Stalwart MTZ Use Rates - Conventional Tillage Systems (Broadcast Rate)**

Soil Texture	0.5 to 3% Organic Matter Pt./A	Over 3% Organic Matter <sup>2</sup> Pt./A
<b>COARSE</b> <sup>1</sup> (Loamy sand, sandy loam)	1.2-1.5 <sup>3</sup>	1.5-1.8
<b>MEDIUM</b> (Loam, silt loam, silt, sandy clay, sandy clay loam)	1.8-2.1	2.1-2.4
<b>FINE</b> (Silty clay, silty clay loam <sup>4</sup> , clay, clay loam)	2.4-2.7	2.4-3.0

1 Do not use on sand soils. On coarse-textured soils, do not use on loamy sand soils with less than 2% organic matter.  
 2 For preplant incorporated application, use the lower rate.  
 3 For Southern and Southeastern states, see section below **In Coarse (Light) Soils**  
 4 Silty clay loam soils are transitional soils and may be classified as medium-textured soils in some regions of the U.S. When using Stalwart MTZ, treat this soil as "fine-textured."

**Note:** On soils with pH above 7.0, soybean injury caused by the metribuzin in Stalwart MTZ may occur at rates higher than 1.5 pt./A. To avoid injury, do not use Stalwart MTZ at rates greater than 1.5 pt./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)

Stalwart MTZ 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 5.

**Table 7: Stalwart MTZ Preemergence Application (Broadcast Rates)**

Soil Texture	Organic Matter	Pt/A
<b>COARSE</b> (Sand <sup>1</sup> , loamy sand, sandy loam)	0.5% or above	1.2-2.1 <sup>2</sup>

1 Not recommended for use on sand with less than 1% organic matter.  
 2 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 Stalwart MTZ may occur at rates higher than 1.5 pt./A. To avoid injury, do not use Stalwart MTZ at rates greater than 1.5 pt./A on soils above pH 7.0.

**Herbicides That May Be Applied Postemergence Following Stalwart MTZ**

If required, application of Stalwart MTZ 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:

- |            |                |                    |
|------------|----------------|--------------------|
| Aim®       | Fusilade® DX   | Rezult® A&B        |
| Arrow™     | Fusion®        | Roundup brands1    |
| Assure® II | Harmony® GT XP | Scepter            |
| Basagran®  | Liberty® 2     | Select®            |
| Classic®   | Poast Plus®    | Storm®             |
| Cobra®     | Poast®         | Synchrony® XP3     |
| Extreme1   | Pursuit®       | Touchdown® brands1 |
| FirstRate  | Raptor®        | Ultra Blazer®      |
| Flexstar®  | Reflex®        |                    |
| Frontrow®  | Resource®      |                    |

1 Use on Roundup-Ready or glyphosate tolerant soybean varieties only.

2 Use on LibertyLink® soybean varieties only.

3 Use on STS™ soybean varieties only.

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

**Burndown Weed Control**

Stalwart MTZ 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. Stalwart MTZ may be tank mixed with 2,4-D low volatile ester (LVE), Touchdown brands, Roundup brands for control of emerged weeds prior to crop emergence. Stalwart MTZ burndown tank mixes can be applied before planting or prior to crop emergence.

**Application**

Stalwart MTZ may be applied up to 30 days before planting or preemergence. Apply only by ground equipment when Stalwart MTZ is used for burndown of existing vegetation in conservation tillage systems. Use the high end of the rate range for Stalwart MTZ applications made 14-30 days before planting. Refer to Table 16 for rates of Stalwart MTZ and to the following table for rates of tank mix partners.

Product	Rate	Directions and Remarks
2,4-D LVE	0.25-1 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 gal. of spray solution (1% v/v).
Touchdown brands or Roundup brands	Refer to product label for use rates	Must be applied prior to crop emergence. Use the higher rates as weeds approach the maximum weed heights listed in Table 9. Apply in 10-20 gal. of water per acre. Refer to the Touchdown or Roundup label for

2/25

		spray adjuvant recommendations. Any glyphosate formulation registered and labeled for use in soybeans may be tank mixed with Stalwart MTZ.
Touchdown brands or Roundup brands + 2,4-D LVE	Refer to the Touchdown or Roundup label for use rates + 0.25 lb. a.i./A	Follow the <b>Directions and Remarks</b> section above for 2,4-D LVE and Touchdown/Roundup, paying special attention to planting restrictions with 2,4-D LVE. Refer to the Touchdown or Roundup label for spray adjuvant recommendations. Do not use crop oil concentrate.
<i>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 Product Information section of this label for additional information, precautions, and limitations.</i>		

**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 Stalwart MTZ 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:** Stalwart MTZ in tank mixtures with the herbicides listed in Table 8 will provide burndown control of the weeds listed below.

<b>Stalwart MTZ +</b>			
Weeds Controlled	2,4-D - LVE	Touchdown / Roundup	Touchdown/ Roundup + 2,4-D - LVE
<b>Annual Grasses</b>	<b>Maximum Burndown Height (Inches)</b>		
Barley	Does not control these species		8
Barnyard grass			6
Crabgrass spp			6
Foxtail spp.			8
Johnsongrass, seedling			8
Panicum, fall			6
Sandbur, field			8
Shattercane			8
Wheat, volunteer			6
Witchgrass			6
<b>Broadleaf</b>		<b>Maximum Burndown Height (Inches)</b>	
Buffalobur	-	6	6
Chickweed, common	6	6	6
Cocklebur, common	6	6	8
Dandelion, common	6 dia. <sup>1</sup>	2 dia. <sup>2</sup>	6 dia. <sup>1</sup>
Henbit	4	4	4
Horseweed/ marestail	6 <sup>1</sup>	4 <sup>2</sup>	6
Jimsonweed	6	6	6
Kochia	4 <sup>1</sup>	4	4
Ladysthumb	6	6	8
Lambsquarters, common	6	6	8

24/25

Lettuce, prickly	6	4	6
Mallow, Venice	6	6	6
Morningglory spp.	6	2	4
Mustard spp.	6	6	8
Pennycress, field	6	6	6
Pigweed spp. (annual)	6	6	8
Ragweed, common	6	6 <sup>2</sup>	8
Ragweed, giant	6 <sup>1</sup>	4 <sup>2</sup>	6
Shepherd's-purse	6	6	6
Sida, prickly	6	4	4
Smartweed, Pennsylvania	6	6	8
Sunflower, common	6	6	6
Thistle, Russian	4 <sup>1</sup>	2-4 <sup>2</sup>	4
Velvetleaf	6	6	8
Waterhemp spp.	6	6	8
<sup>1</sup> Use 2,4-D LVE at 0.5 lb. ai/A. <sup>2</sup> Use a minimum of 0.75 lb. ai/A of Touchdown or Roundup.			

**Stalwart MTZ Use Rates For Reduced and No-Till Systems**

**Preplant Surface Application**

Stalwart MTZ 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, 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 10: Stalwart MTZ Use Rates for Reduced-Till and No-Till Systems (Broadcast Rates)**

Soil Texture	Pt./A <sup>1</sup>
<b>COARSE<sup>2</sup></b> (Sand, loamy sand, sandy loam)	1.2-2.1
<b>MEDIUM</b> (Loam, silt loam, silt, sandy clay, sandy clay loam)	2.1-3.0
<b>FINE</b> (silty clay, silty clay loam <sup>3</sup> , clay, clay loam)	2.7-3.6
<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 Stalwart MTZ, treat this soil as "fine-textured."	

**Stalwart MTZ Sequential Application**

An early preplant (surface-applied or shallow incorporated) application of Stalwart MTZ, followed by a preemergence application of Stalwart MTZ 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 Stalwart MTZ after planting but before crop emergence. Follow directions on this label for sequential applications from 0-14 days before planting.

23/25

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 Touchdown, Roundup, Gramoxone Inteon, or 2,4-D LVE.

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

**Table 11: Stalwart MTZ Sequential Application (Broadcast Rates)**

Soil Texture <sup>1</sup>	Early Preplant Application Pt./A		Preemergence Overlay Application Pt./A
<b>COARSE</b> <sup>1</sup> (Sand, loamy sand, sandy loam)	1.2-1.8	followed by	0.3-0.9
<b>MEDIUM</b> (Loam, silt loam, silt, sandy clay, sandy clay loam)	1.5-2.1	followed by	0.6-1.2
<b>FINE</b> (silty clay, silty clay loam <sup>3</sup> , clay, clay loam)	1.8-2.4	followed by	0.9-1.5 <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 3.9 pints of Stalwart MTZ 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 Stalwart MTZ, treat this soil as "fine-textured."

### STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited.

**Pesticide Storage:** Store in a cool, dry place. For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes.

**Pesticide Disposal:** Wastes resulting from the use of this product are toxic. Improper disposal of unused pesticide, spray mixture, or rinsate is a violation of federal law. Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to federal, state, or local procedures. For guidance in proper disposal methods, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office.

**Container Disposal:**

**Containers < 5 Gallons: Nonrefillable container.** Do not reuse or refill this container. 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 or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Minibulk Containers: Nonrefillable container.** Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follow: Empty the remaining

24/25

contents into application equipment or a mix tank. Fill the container  $\frac{1}{4}$  full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Bulk Containers: Refillable container.** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents 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. When the container is empty, replace the cap and seal all openings that have been opened during use; and return to the point of purchase, or to a designated location named at the time of purchase of this product. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transporting. Do not transport if this container is damaged or leaking. If the container is damaged or leaking, call Chem-Trec. If the container is damaged and leaking or material has been spilled, follow these procedures:

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

If not returned to the point of purchase or to a designated location, clean empty container as instructed above and offer for recycling. Disposal of this container must be in compliance with state and local regulations.

## NOTICE OF WARRANTY

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