

# Specimen Label



Dow AgroSciences



## HERBICIDE

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### For Use Only by Individuals/Firms Certified as Licensed Pesticide Applicators

Active Ingredients:	
sulfentrazone .....	62.1%
cloransulam-methyl .....	7.9%
Other Ingredients.....	30.0%
Total .....	100.0%

Contains 0.7 lb of active ingredient per lb of product (0.62 lb ai of sulfentrazone and 0.08 lb of ai of cloransulam-methyl)

### Precautionary Statements

#### Hazards to Humans and Domestic Animals

EPA Reg. No. 279-3246-62719

## CAUTION

**Causes Moderate Eye Irritation • Harmful If Inhaled, Swallowed, Or Absorbed Through Skin**

**Avoid breathing vapor or spray mist. Avoid contact with skin, eyes or clothing.**

#### Personal Protective Equipment (PPE)

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

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

#### User Safety Recommendations

Users should:

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

#### First Aid

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

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

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

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

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-331-3148 for emergency medical treatment information.

#### Environmental Hazards

This pesticide is toxic to marine/estuarine invertebrates. 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 terrestrial and aquatic plants in neighboring areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

**Groundwater advisory:** Cloransulam-methyl is known to leach through soil into groundwater under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground-water contamination. Do not use on coarse soils classified as sand which have less than 1% organic matter.

**Surface water advisory:** Sulfentrazone can contaminate surface water through spray drift. Under some conditions, sulfentrazone may also have a high potential for runoff into surface water (primarily via dissolution in runoff water), for several to many 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 groundwater, 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 waters.

#### Physical or Chemical Hazards

Do not use or store near heat or open flame.

#### Directions for Use

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

Read all Directions for Use carefully before applying.

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

#### Agricultural Use Requirements

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

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

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 over long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

## Storage and Disposal

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

**Pesticide Storage:** Store product in original container only, away from other pesticides, fertilizer, food or feed. Do not store below 40°F (4°C).  
**In Case of Spill:** Avoid contact. Isolate areas and keep out animals and unprotected persons. Confine spills.

**To Confine Spills:** Dike surrounding area, sweep up spillage. Dispose of in accordance with information given under Pesticide Disposal. Wash spill area with water, absorb with sand, cat litter or commercial clay, sweep up and dispose of in an approved manner. Place damaged package in a holding container. Identify contents per required hazardous waste labeling regulations.

**Pesticide Disposal:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of federal law. If these wastes cannot be disposed of by use according to label instructions, contact your state pesticide or environmental control agency or the hazardous waste representative at the nearest EPA regional office for guidance.

### Container Disposal

**Nonrefillable container.** Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: (For containers greater than 5 gallons) Empty the remaining contents into application equipment or a mix tank. Fill the container 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. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. (For containers 5 gallons or less) 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. Triple rinse (or equivalent). Then offer for recycling if available, or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Returnable/Refillable Containers.** 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 into application equipment or mix tank. Fill the container about 10% 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.

## Attention

- Although this label may appear similar to the label on a product you may have used, there may be important label differences. Users must read, understand and strictly follow all label directions, precautions and restrictions.
- It is the user's responsibility to be sure the product is approved for sale or use on the intended crop and for use in the specific geographic area.
- It is the user's responsibility to be aware of and to follow all state or local precautions or restrictions not appearing on this product label.
- Prior to purchase or use of this product, read the Conditions of Sale and Limitation of Warranty and Liability on this label. If the terms and conditions are unacceptable, return the product immediately in the original and unopened container.

## General Information

Sonic® herbicide is for preemergence control of broadleaf and grass weeds in soybeans only.

The mode of action of Sonic involves uptake by weed roots and shoots. Preemergence and preplant incorporated applications of Sonic require rainfall or irrigation to activate the herbicide. The amount of rainfall or irrigation required for activation following application depends on existing soil moisture, organic matter content and soil texture. If adequate moisture (1/2" to 1") is not received within 7 to 10 days after the treatment with Sonic, a shallow cultivation may be needed to obtain desired weed control. When sufficient moisture is received after dry conditions, Sonic will provide control of susceptible germinating weeds.

Sonic exhibits excellent crop safety. Poor growing conditions, such as excessive moisture, cool temperatures, and soil compaction or the presence of various pathogens may impact seedling vigor. Under these conditions, the active ingredients in Sonic, like other soil-applied

herbicides, can contribute to crop response. However, these early symptoms are short-lived.

Observe all instructions, crop restrictions, mixing directions, application precautions, replanting directions, rotational crop guidelines and other label information of each product when tank mixing with Sonic.

## Proper Handling Instructions

This product may not be mixed or loaded within 50 feet of any wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or properly diked mixing/loading areas.

Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 feet 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 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 specific minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.

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

Do not use flood irrigation to apply or incorporate this product.

Product must be used in a manner which will prevent back siphoning in wells, spills or improper disposal of excess pesticide, spray mixtures or rinsates.

## Rotational Crop Guidelines

Shown below are the minimum intervals in months from the time of an application of Sonic until soil treated with Sonic may be replanted with the crops listed. When Sonic is tank mixed with other herbicide(s), refer to all the labels for re-cropping instructions, following the intervals that are the most restrictive. For crops not listed, the interval is 30 months and a successful field bioassay.

Crop	Interval (Months)
alfalfa	12
barley	12
canola	24
corn, field <sup>1</sup>	10
corn, pop <sup>1</sup>	10
corn, seed <sup>1</sup>	10
corn, sweet	18
cotton	18 or 12 <sup>4</sup>
dry shelled beans and peas	12
oats	12
peanuts	12
potatoes	18
rice	10
rye	12
sorghum	12
soybeans	anytime
sugar beets <sup>2</sup>	30
sunflower <sup>2</sup>	30
tobacco <sup>3</sup>	30
wheat	4

<sup>1</sup>Corn, including field, popcorn and seed corn: Observe an 18-month rotational interval if 6.45 to 8 oz of Sonic is applied to soil of 1.5% organic matter or less, and pH is above 7. **Hybrid seed production:** Corn inbred lines grown for hybrid seed production may be

injured in the growing season following an application of Sonic. Inbred lines should be thoroughly tested for crop tolerance before rotating to production scale acreages. **Dow AgroSciences will not accept responsibility for any crop injury on field corn grown for seed following an application of Sonic.**

<sup>2</sup>These crops require a 30-month rotational interval and a successful field bioassay.

<sup>3</sup>Transplanted tobacco may be planted 10 months after application of a maximum application rate of 3 oz of Sonic per acre. Tobacco in seedbed nurseries may be replanted 18 months after application of 3 oz of Sonic per acre and following a successful field bioassay. A rotational interval of 30 months and a successful field bioassay is required for all applications of Sonic greater than 3 oz per acre.

<sup>4</sup>Cotton may be planted after 12 months where Sonic was applied at rates 5 oz/acre or less and meets the following conditions:

- Medium and fine soils
- pH <7.2
- Rainfall or irrigation must exceed 15" after application of Sonic

### Replanting Instructions

If the initial planting of soybeans fails to produce a uniform stand, soybeans may be replanted in fields treated with Sonic alone. Do not re-treat fields with a second application of Sonic. When tank mixing with a labeled product, refer to the replant instructions for that product. Do not replant treated fields with any crop at intervals that are inconsistent with the rotational crop guidelines on the label for Sonic. Where a tank mix is used, refer to the product's labels for any additional replant instructions.

### Application Information

Do not apply to crops other than soybeans. Apply with ground sprayers only.

Use a standard low pressure herbicide boom sprayer equipped with suitable nozzles and screens. Apply uniformly using properly calibrated nozzles (10 to 40 psi) and screens and strainers no finer than 50 mesh. Use 10 to 40 gallons of spray solution per acre. Do not exceed 40 psi spray pressure unless required by the spray nozzle manufacturer.

Continuous agitation during application is required. Avoid swath overlaps. Shut off spray booms while turning, slowing or stopping as over application may result. Do not allow spray mixtures of Sonic to sit overnight as settling of product and difficulty of re-suspending may occur.

To avoid injury to sensitive crops, spray equipment used for applications of Sonic must be drained and thoroughly cleaned with water plus ammonia before being used to apply other products. See Spray Clean-Out section.

#### **Avoid all direct and/or indirect spray contact with non-target plants.**

Do not apply near desirable vegetation. Allow adequate distance between target area and desirable plants to minimize exposure.

#### **Runoff and Wind Erosion Precautions**

**Do not apply under conditions which favor runoff or wind erosion of soil containing Sonic to non-target areas. To prevent off-site movement due to runoff or wind erosion:**

- Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, allow the soil surface to be settled by rainfall or irrigation.
- Do not apply to impervious substrates such as paved or highly compacted surfaces or frozen or snow covered ground.
- Do not apply to soils when saturated with water.
- Do not use tailwater from the first flood or furrow irrigation of treated fields to treat non-target crops unless at least 1/2 inch of rainfall has occurred between application and the first irrigation.

### Spray Drift Reduction Advisory

Avoiding spray drift at the application site is the responsibility of the applicator and the grower. 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 applications to agricultural field crops. Where states and local governments have more stringent regulations, they must be observed.

#### **Droplet Size Information**

Reduce drift potential by applying large droplets. The optimum drift management strategy is to apply the largest droplets that will provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift when applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

**VMD:** VMD is the expression of the droplet size of the spray cloud. The VMD value means that 50% of the droplets are larger than the expressed value and 50% of the droplets are smaller than the expressed value.

Optimum spray clouds should be 450 microns with fewer than 10% of the droplets being 200 microns or smaller.

**Volume:** Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows usually 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 Type:** Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low drift nozzles.

**Application Height:** Making applications at the lowest height practical reduces exposure of spray droplets to evaporation and wind movement.

#### **Swath Adjustment**

Swath adjustment distance must increase with increasing drift potential (higher wind, smaller drops, etc.).

#### **Wind**

Drift potentials are lowest between wind speeds of 3 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given wind speed. Applications in wind conditions outside of this range could increase the risk of off-target effects and should be avoided. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

#### **Temperature and Humidity**

When making applications in conditions of 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**

Do not apply Sonic during temperature inversions because the 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 following morning. Their presence can be indicated by ground fog. However, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or a smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicate an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

#### **Sensitive Areas**

Applications should be made when the wind is blowing away from adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, and non-target crops).

### Mixing Instructions and Loading Instructions

#### **Sonic Applied Alone**

Select the proper application rate of Sonic from Timing and Method of Application section of this label. Fill the spray tank with approximately one-half of the volume of water needed for the acreage being treated. With agitator operating, add the required amount of Sonic for acreage being treated by opening the bottle(s) and measuring directly into the spray tank. Allow the product to fully disperse. Complete the addition of spray water. Maintain agitation during filling, mixing and application. Apply the spray mixture of Sonic immediately after mixing. Do not store spray mixture.

#### **Sonic Applied in Tank Mix Combination**

Select the proper application rate of Sonic from Timing and Method of Application section of label. Read and follow all applicable use directions, precautions and restrictions on the respective tank mix product labels. To ensure product compatibility, a jar test should be conducted before large volume mixing. Provided the jar test indicates the mixture is compatible, prepare the tank mixture as follows.

Fill the spray tank with approximately one-half of the volume of water needed for the acreage being treated. With agitator operating, add the required amount of Sonic for the acreage being treated by opening the bottle(s) and measuring directly into the spray tank. Allow the product to fully disperse. Next add the recommended amount(s) of the



additional tank mix product(s) in the following order: first, dry formulations (e.g., wettable powders, dry flowables); next, liquid suspensions (e.g., flowables); and, finally, liquids (e.g., ECs). Allow time for complete mixing and dispersion after each addition, adding water as necessary. Complete the addition of spray water. Maintain agitation during filling, mixing and application. Use tank mixtures of Sonic immediately after mixing. Do not store tank mixtures.

**Fertilizer Spray Mixtures**

Applications of Sonic alone or with recommended tank mixtures in conjunction with fertilizer solutions may be used unless use directions specifically state otherwise. Small quantities should be tested for compatibility by the following procedure before mixing in full spray tank quantities:

1. Put 1 pint of fertilizer solution in a quart jar.
2. Add the appropriate amount of herbicide based on the table below. If more than one product is to be used, add each separately using the following sequence: dry formulations (e.g., wettable powders, dry flowables) first, liquid suspensions (e.g., flowables) next, and finally liquids (e.g., ECs).

Herbicide Type	Herbicide Field Use Rate	Amount Herbicide Added per Pint <sup>1</sup>
wetable powders or dry flowables	0.5 lb	0.75 teaspoon
	1 lb	1.5 teaspoons
	2 lb	3 teaspoons
	3 lb	4.5 teaspoons
emulsifiable concentrates	1 pt	0.5 teaspoon
liquid flowables	1 qt	1 teaspoon
	2 qt	2 teaspoons
	3 qt	3 teaspoons

<sup>1</sup>Based on a spray volume of 25 gal per acre. For lower or higher spray volumes, adjust fluid fertilizer quantity accordingly.

3. Close jar and shake well.
4. Watch mixture for several seconds, again after 5 minutes and again after 30 minutes. If herbicide/fertilizer combination remains mixed or can be remixed readily (i.e., does not permanently separate, foam, gel or become lumpy), the mixture is compatible and can be mixed in full volumes and sprayed. If the mixture is compatible, prepare spray by adding fertilizer solution to the tank first, then follow directions noted below.

**Sonic Applied Alone with Liquid Fertilizer**

In order to add Sonic to a liquid fertilizer carrier, Sonic must be premixed in a slurry of product and clear water. Fill the spray tank one-half full with fertilizer solution. With agitator operating, add the slurry with Sonic to the spray tank. Use a minimum of one gallon of water for each container of Sonic. Stir until completely dissolved. Then add slurry to the spray tank through a 20 to 35 mesh screen. Rinse container used for premixing and add rinsate to the spray tank. Complete filling the sprayer tank with fertilizer. Maintain agitation during filling, mixing and application. Use the spray mixture of Sonic immediately after mixing. Do not store mixture.

**Sonic Applied in Tank Mix Combinations**

Fill the spray tank one-half full with fertilizer solution. With the agitator operating, add a slurry of Sonic as described in the preceding paragraph. Next dilute the individual tank mix partners with sufficient water to form a free flowing dispersion, then add to the spray tank of fertilizer. While maintaining agitation, add the other products using the following order: slurry of dry formulations (wetable powders, dry flowables) first, diluted liquid formulations (ECs, flowables) second. Complete filling the sprayer tank with fertilizer. Maintain agitation during filling, mixing and application. Use tank mixtures of Sonic immediately after mixing. Do not store tank mixtures.

**Sprayer Equipment Clean-Out**

After spraying Sonic and before using sprayer equipment for any other applications, the sprayer must be thoroughly cleaned using the following procedure:

1. Drain sprayer tank, hoses, and spray boom and thoroughly rinse the inside of the sprayer tank with clean water to remove sediment and residues. Thoroughly flush sprayer hoses, boom and nozzles with clean water.

2. Fill the tank 1/2 full with clean water, and add appropriate detergent or ammonia (follow manufacturer's directions for use). Fill the tank to capacity and operate the sprayer for 15 minutes to flush hoses, boom, and nozzles.
3. Convenient and thorough cleaning of the sprayer can be achieved if the cleaning solution is left in the spray tank, hoses, spray booms and spray nozzles overnight or during storage.
4. Before using the sprayer, drain the spray system. Rinse the tank with clean water and flush through the hoses, boom, and nozzles. Remove and clean spray tips and screens separately with the detergent or ammonia solution.
5. Properly dispose of all cleaning solution and rinsate in accordance with federal, state and local regulations and guidelines.

Do not drain or flush equipment on or near desirable trees or plants. Do not contaminate any body of water including irrigation water that may be used on other crops. Should small quantities of Sonic remain in inadequately cleaned mixing, loading and/or spray equipment, they may be released during subsequent applications potentially causing effects to certain crops and other vegetation. Dow AgroSciences accepts no liability for any effects due to inadequately cleaned equipment.

**Soybeans (Conventional and GMO)**

**Timing and Method of Application**

Sonic may be used alone or in tank mixture combinations for the control of the weeds listed in conventional or GMO soybean varieties.

**Application Rates**

Soil Organic Matter <sup>1</sup>	Sonic (oz/acre) <sup>2</sup>	Rate of Sonic (lb ai/acre)	
		Sulfentrazone	Cloransulam-methyl
3% or less	6.45	0.25	0.032
greater than 3%	8	0.31	0.04

<sup>1</sup>Do not apply Sonic to soils classified as sand with less than 1% organic matter.

<sup>2</sup>Maximum application rates: See Preplant Surface and Preemergence Application for specific recommendations.

**Preplant Incorporated Application**

Apply Sonic alone or in tank mix combination with other herbicides registered for preplant incorporated application to soybeans. Incorporate the herbicide(s) into the top 1 to 3 inches of the final seedbed using equipment that provides thorough soil mixing. When Sonic is applied in tank mix combination with other herbicide(s), follow the incorporation directions for the tank mix partner(s). Follow applicable use instructions, including application rates, precautions and restrictions of each product used in the tank mixture.

**Preplant Surface Application**

Apply Sonic alone or in tank mix combination with other herbicides registered for preplant soil surface application to soybeans. If applied in tank mix combination, follow use instructions, including application rates (note: apply 1/2 of the maximum application rate for suppression of weeds in Roundup Ready soybeans, maintaining control with sequential application(s) of registered postemergence herbicides), precautions and restrictions of each product used in the tank mixture.

**Preemergence Application**

Apply at planting time or within 3 days after planting. Sonic may be applied alone or in tank mix combination with other herbicides registered for preemergence application to soybeans. When applied in tank mix combination, follow applicable use instructions, including application rates (note: apply 1/2 of the maximum application rate for suppression of weeds in Roundup Ready soybeans, maintaining control with sequential application(s) of registered postemergence herbicides). Observe the precautions and restrictions of each product used in the tank mixture. Apply before planting, at planting time or prior to seed germination. Properly closed seed furrows are necessary when applying at planting time or before seed germination. Do not apply later than 3 days after planting (or after seed germination) as crop injury may result.

## Weeds Controlled

When used as directed, Sonic will provide control or suppression of the following broadleaf weeds and grasses:

### Common Name

### Scientific Name

#### Broadleaves

amaranth, palmer  
amaranth, spiny  
anoda, spurred  
beggarweed, Florida  
carpetweed  
cocklebur, common  
copperleaf, hophornbeam  
croton, tropic  
daisy, American  
dayflower, common  
galinsoga, hairy  
groundcherry, clammy  
groundcherry, cutleaf  
horseweed (marestail)<sup>2</sup>  
jimsonweed  
kochia  
ladysthumb  
lambsquarters, common  
mallow, Venice  
Mexicanweed  
morningglory, entireleaf  
morningglory, ivyleaf  
morningglory, palmleaf  
morningglory, pitted<sup>1</sup>  
morningglory, purple  
morningglory, red  
morningglory, smallflower  
morningglory, tall  
mustard, wild  
nightshade, eastern black  
nightshade, hairy  
nightshade, silverleaf  
pigweed, redroot  
pigweed, smooth  
pigweed, tumble  
poorjoe  
purslane, common  
pusley, Florida  
ragweed, common<sup>2</sup>  
ragweed, giant<sup>2</sup>  
senna, coffee  
smartweed, Pennsylvania  
smellmelon  
spurge, spotted  
starbur, bristly  
sunflower, common  
teaweed  
thistle, Russian  
velvetleaf  
waterhemp, common  
waterhemp, tall

*Amaranthus palmeri*  
*Amaranthus spinosus*  
*Anoda cristata*  
*Desmodium tortuosum*  
*Mollugo verticillata*  
*Xanthium pensylvanicum*  
*Acalypha ostryeafolia*  
*Croton glandulosus*  
*Eclipta alba*  
*Commelina communis*  
*Galinsoga ciliata*  
*Physalis heterophylla*  
*Physalis angulata*  
*Hippuris vulgaris*  
*Datura stramonium*  
*Kochia scoparia*  
*Polygonum persicaria*  
*Chenopodium album*  
*Hibiscus trionum*  
*Caperonia castanaefolia*  
*Ipomea hederacea integrisc*  
*Ipomea hederacea hederacea*  
*Ipomea wrightii*  
*Ipomea lacunosa*  
*Ipomea turbinata*  
*Ipomea coccinea*  
*Jacquemontia tamnifolia*  
*Ipomea purpurea*  
*Brassica kaber*  
*Solanum americanum*  
*Solanum sarrachoides*  
*Solanum elaeagnifolium*  
*Amaranthus retroflexus*  
*Amaranthus hybridus*  
*Amaranthus albus*  
*Diodia teres*  
*Portulaca oleracea*  
*Richardia scabra*  
*Ambrosia artemisiifolia*  
*Ambrosia trifida*  
*Cassia occidentalis*  
*Polygonum pensylvanicum*  
*Cucumis melo*  
*Euphorbia maculata*  
*Acanthospermum hispidum*  
*Helianthus annuus*  
*Sida prickly*  
*Salsola kali*  
*Abutilon theophrasti*  
*Amaranthus rudis*  
*Amaranthus tuberculatus*

#### Grasses

barnyardgrass<sup>1</sup>  
broadleaf signalgrass  
crabgrass, large  
crabgrass, smooth  
crabgrass, southern<sup>1</sup>  
crowfootgrass<sup>1</sup>  
foxtail, giant<sup>1</sup>  
foxtail, green  
foxtail, yellow<sup>1</sup>  
goosegrass  
johnsongrass, seedling<sup>1</sup>  
orchardgrass  
panicum, fall  
panicum, Texas

*Echinochloa crus-galli*  
*Brachiaria platyphylla*  
*Digitaria sanguinalis*  
*Digitaria ischaemum*  
*Digitaria ciliaris*  
*Dactyloctenium aegyptium*  
*Setaria faberi*  
*Setaria viridis*  
*Setaria lutescens*  
*Eleusine indica*  
*Sorghum halapense*  
*Dactylis glomerata*  
*Panicum dichotomiflorum*  
*Panicum texanum*

#### Sedges

nutsedge, purple  
nutsedge, yellow  
sedge, annual

*Cyperus rotundus*  
*Cyperus esculentus*  
*Cares spp.*

<sup>1</sup>Provides suppression or partial control only.

<sup>2</sup>Will not control ALS resistant biotypes of these weed species.

### Reduced Rates for Roundup Ready Soybeans

Sonic may be used at reduced rates in conjunction with planned follow-up weed control applications with glyphosate based products such as Durango<sup>®</sup> DMA<sup>®</sup> herbicide, Roundup or other glyphosate herbicide products labeled for use on Roundup Ready soybean varieties. Follow all application directions for Sonic. Sonic will not control or reduce competition from ALS resistant biotypes.

Apply before planting, at planting time or prior to seed germination. Properly closed seed furrows are necessary when applying at planting time or before seed germination. Recommended postemergence treatments may include any product or combination of products labeled for use.

### Reduced Rate Application Rates

Soil Organic Matter <sup>1</sup>	Sonic (oz/acre)	Rate of Actives in Sonic (lb ai/acre)	
		Sulfentrazone	Cloransulam-methyl
3% or less	3	0.116	0.015
greater than 3%	4	0.155	0.020

<sup>1</sup>Do not apply Sonic to soils classified as sand with less than 1% organic matter.

### Preplant Burndown Application

Sonic, used at 6.45 to 8 oz per acre as in the Application Rates chart for all soybeans above, aids in the burndown of weeds listed below when applied as directed. Thorough coverage is essential. Apply a minimum of 10 gallons per acre finished spray volume. Use a non-ionic surfactant (NIS) having at least 80% active ingredient strength at 0.125 to 0.25% v/v (1 to 2 pints per 100 gallons of spray solution) plus ammonium sulfate (AMS) at 2.5% v/v. Crop oil concentrate (COC) at 1.2% v/v plus ammonium sulfate may be used. Burndown results may be slowed or reduced when the growth of the weeds is affected by unusual environmental factors just prior to or after application such as especially cool or widely fluctuating day and night air temperatures, drought, heat stress, or waterlogged soils. For complete burndown of emerged annual grasses or broadleaf weeds and to broaden the spectrum of weeds controlled, Sonic may be tank mixed with other herbicides such as Aim EW, 2,4-D products, glyphosate products, glufosinate or paraquat products to achieve acceptable control of existing weeds during application.

### Weeds Controlled

When used as directed for burndown, Sonic will aid in the control or suppression of the following broadleaf weeds:

#### Common Name

#### Scientific Name

##### Broadleaves

cocklebur, common  
horseweed (marestail)<sup>2</sup>  
jimsonweed  
mallow, Venice  
morningglory, entireleaf  
morningglory, ivyleaf  
morningglory, palmleaf  
morningglory, pitted<sup>1</sup>  
morningglory, purple  
morningglory, red  
morningglory, smallflower  
morningglory, tall  
ragweed, common<sup>2</sup>  
ragweed, giant<sup>2</sup>  
sicklepod  
smartweed, Pennsylvania  
sunflower, common  
velvetleaf<sup>1</sup>

*Xanthium pensylvanicum*  
*Hippuris vulgaris*  
*Datura stramonium*  
*Hibiscus trionum*  
*Ipomea hederacea tinegrisc*  
*Ipomea hederacea hederacea*  
*Ipomea wrightii*  
*Ipomea lacunosa*  
*Ipomea turbinata*  
*Ipomea coccinea*  
*Jacquemontia tamnifolia*  
*Ipomea purpurea*  
*Ambrosia artemisiifolia*  
*Ambrosia trifida*  
*Cassia obtusifolia*  
*Polygonum pensylvanicum*  
*Helianthus annuus*  
*Abutilon theophrasti*

<sup>1</sup>For velvetleaf control, use 28% nitrogen (UAN) or AMS with NIS or COC.

<sup>2</sup>Sonic will not control ALS resistant biotypes of these weed species.

### Precautions

- Properly closed seed furrows are necessary when applying at planting time or before seed germination.
- Maintain spray tank agitation until the spray mixture is applied.

### Restrictions

- Do not apply this product by air or through any type of irrigation system.
- Do not make more than one soil application per crop year.
- Do not apply more than 8 oz of Sonic per acre per season as a cumulative total of soil application of Sonic and post-emergence application of FirstRate<sup>®</sup> herbicide (1 oz per acre of Sonic contains 0.005 lb a.i. cloransulam-methyl and 0.3 oz per acre of FirstRate contains 0.016 lb a.i. cloransulam-methyl. Do not apply more than 0.055 lb a.i. per acre of cloransulam-methyl in a single growing season.).
- Do not feed treated soybean forage or soybean hay to livestock.
- Do not harvest soybeans for 65 days after application of Sonic.
- Do not apply Sonic to soils classified as sands containing less than 1% organic matter.
- Do not drain or flush equipment on or near desirable trees or plants. Do not contaminate any body of water including irrigation water that may be used on other crops.

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### Revisions:

1. Revised crop rotational interval for cotton
2. Clarified Preplant Burndown Application language