

Willowood SULFEN CLORAN

SULFENTRAZONE	GROUP	14	HERBICIDE
CLORANSULAM-METHYL	GROUP	2	HERBICIDE

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

Active Ingredients:	By Weight
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. a.i. of sulfentrazone and 0.08 lb. of a.i. of
cloransulam-methyl).

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

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

FIRST AID

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

HOTLINE NUMBERS

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For 24-Hour Medical Emergency Assistance (Human or Animal), call: **1-800-222-1222**. For Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), call CHEMTREC: **1-800-424-9300**.

See label booklet for complete Precautionary Statements, Directions For Use, and Storage and Disposal.

Manufactured For:
Willowood, LLC
1887 Whitney Mesa Drive #9740
Henderson, NV 89014-2069
20190906

EPA Reg. No. 87290-82

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof and chemical-resistant gloves
- Shoes plus socks
- Protective eyewear

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.

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 the product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

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: This chemical 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 groundwater 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.

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

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame. Do not mix or allow coming in contact with oxidizing agent. Hazardous chemical reaction may occur.

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 and chemical-resistant gloves
- Shoes plus socks

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 aware of and to follow all State or local precautions or restrictions not appearing on this product label.
- Before purchasing or using this product, read the Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies on this label. If the terms and conditions are unacceptable, return the product immediately in the original and unopened container.

PRODUCT INFORMATION

Willowood Sulfen Cloran is an herbicide for pre-emergence control of broadleaf and grass weeds in soybeans only.

Willowood Sulfen Cloran's mode of action involves uptake by weed roots and shoots. **Willowood Sulfen Cloran's** pre-emergence and pre-plant incorporated applications require rainfall or irrigation to activate the herbicide. The amount of rainfall or irrigation needed for activation after an application depends on existing soil moisture, organic matter content and soil texture. If adequate moisture ($\frac{1}{2}$ " to 1") is not received within 7 to 10 days following the application of **Willowood Sulfen Cloran**, a shallow cultivation may be necessary to obtain desired weed control. When sufficient moisture is received after dry conditions, **Willowood Sulfen Cloran** will provide control of susceptible germinating weeds.

Willowood Sulfen Cloran shows excellent crop safety. Poor growing conditions (for example: excess soil moisture, cool temperatures, and soil compaction or the presence of various pathogens) may impact seedling vigor. Under these conditions, the active ingredients in **Willowood Sulfen Cloran**, like other soil-applied herbicides, can contribute to adverse 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 **Willowood Sulfen Cloran**.

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

Use Precautions:

- Back to back applications of ALS or products that contain an ALS herbicide can occasionally result in residual herbicide build-up and potential crop injury. Applicator and grower are responsible and must be aware of previous herbicide use and potential interaction it may have with this product application.
- Ensure the seed furrow is closed and the seed is covered on acres treated with this product.
- Soybean stunting may result if excessive rainfall occurs after application but prior to soybean emergence. Injury is more prevalent under poor drainage or compacted soil conditions or when soil is saturated for long periods of time. Soybeans outgrown stunting once favorable conditions return.
- Do not make application of this product if there are visible signs of cracking due to soybean emergence, or serious crop injury may occur (ex. crop injury and varying stand loss).
- Seedling disease, nematodes, cold weather, deep planting (greater than 2 inches), excessive moisture, high salt concentration, or drought may weaken soybean seedlings and increase the possibility of crop injury.

Weed Resistance Management Guidelines

Willowood Sulfen Cloran contains two active ingredients, sulfentrazone and cloransulam-methyl, which are classified as a Group 14 herbicide (PPO-inhibitor) and a Group 2 herbicide (ALS-inhibitor), respectively. Any weed population may contain plants naturally resistant to Group 14 or Group 2 herbicides. Such resistant weed plants may not be effectively managed using Group 14 or Group 2 herbicides but may be effectively managed utilizing another herbicide alone or in mixtures from a different Group and/or by using cultural or mechanical practices. However, any herbicide mode of action classification by itself may not adequately address specific weeds that are resistant to specific herbicides. Contact your local Willowood, LLC representative, crop advisor, or extension agent to find out if suspected resistant weeds to these MOAs have been found in your region. Do not assume that each listed weed is being controlled by multiple mechanisms of action. Co-formulated active ingredients are intended to broaden the spectrum of weeds that are controlled. Some weeds may be controlled by only one of the active ingredient in this product. Report any incidence of non-performance of this product against a particular weed species. If resistance is suspected, treat weed escapes with an herbicide having a different mechanism of action and/or use non-chemical means to remove escapes, as practical, with the goal of preventing further seed production.

Suspected herbicide-resistant weeds may be identified by these indicators: 1) Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; 2) A spreading patch of non-controlled plants of a particular weed species; and 3) Surviving plants mixed with controlled individuals of the same species.

Best Management Practices

Proactively implementing diversified weed control strategies to minimize selection for weed populations resistant to one or more herbicides is recommended. A diversified weed management program may include the use of multiple herbicides with different modes of action and overlapping weed spectrum with or without tillage operations and/or other cultural practices. Research has demonstrated that using full labeled rates and following directions for use is important to delay the selection for resistance. Scouting after an herbicide application is important because it can facilitate the early identification of weed shifts and/or weed resistance and thus provide direction on future weed management practices. One of the best ways to contain resistant populations is to implement measures to avoid allowing weeds to reproduce by seed or to proliferate vegetatively. Cleaning equipment between sites and avoiding movement of plant material between sites will greatly aid in retarding the spread of resistant weed seed.

General principles of herbicide resistance management

1. Practice integrated weed management. Use multiple herbicide modes-of-action with overlapping weed spectrums in rotation, sequences, or mixtures.
2. Use the full labeled herbicide rate and proper application timing for the hardest to control weed species present in the field.
3. Fields should be scouted prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective. Fields should be scouted after application to verify that the treatment was effective. Identify weeds present in the field and understand their biology. The weed-control program should consider all the weeds present.
4. Plant into weed-free fields and keep fields as weed-free as possible.
5. Use a diversified approach toward weed management. Whenever possible, incorporate multiple weed-control practices such as mechanical cultivation, biological management practices, and crop rotation.
6. Fields with difficult to control weeds should be rotated to crops that allow the use of herbicides with alternative mechanisms of action or different management practices.
7. Do not allow weed escapes to produce seeds, roots, or tubers. Manage weed seeds at harvest and post-harvest to prevent a buildup of the weed seed-bank.
8. Prevent field-to-field and within-field movement of weed seed or vegetative propagules. Prevent an influx of weeds into the field by managing field borders.
9. Difficult to control weeds may require sequential applications of herbicides with differing mechanisms of action.
10. Do not use more than two applications of this or any other herbicide with the same mechanism of action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.

For annual cropping situations, also consider the following:

- Start with a clean field and control weeds early by using a burndown treatment or tillage in combination with a pre-emergence residual herbicide as appropriate.
- Use cultural practices such as cultivation and crop rotation, where appropriate.
- Use good agronomic principles that enhance crop competitiveness.
- Use new commercial seed that is as free of weed seed as possible.

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

The minimum crop intervals are shown in the table below from the time of an application of **Willowood Sulfen Cloran** until soil treated with **Willowood Sulfen Cloran** may be replanted with the crops listed. Cover crops that are planted for soil health or erosion control may be planted at any time following an application of this product, but do not use for food or feed. Residual activity of **Willowood Sulfen Cloran** may result in injury to some cover crop species if they are planted shortly after applications. Consult your local Cooperative Extension service for cover crop sensitivity to **Willowood Sulfen Cloran**. When **Willowood Sulfen Cloran** is tank mixed with other herbicide(s), consult all the product labels for re-cropping instructions, following the intervals that are the most restrictive. For crops not listed, the interval is 30 months along with conducting a successful field bioassay.

Crop	Interval
Soybeans	Anytime
Wheat	4 Months
Corn (Field, Pop, Seed) ¹ , Rice	10 Months
Beans (Dry Shelled), Peas (Dry Shelled and Succulent)	9 Months
Alfalfa, Barley, Beans (Lima), Oats, Peanuts, Rye, Snap Beans, Sorghum	12 Months
Cotton	18 or 12* Months
Corn (Sweet), Potatoes	18 Months
Canola	24 Months
Sugarbeets ¹ , Sunflower ¹ , Tobacco ²	30 Months

¹These crops require a 30-month rotational interval and conducting a successful field bioassay.

²Transplanted tobacco may be planted 10 months after treatment of a maximum application rate of 3 oz. of **Willowood Sulfen Cloran** per acre. Tobacco in seedbed nurseries may be replanted 18 months following an application of 3 oz. of **Willowood Sulfen Cloran** 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 **Willowood Sulfen Cloran** greater than 3 oz. per acre.

*Cotton may be planted after 12 months when **Willowood Sulfen Cloran** was applied at rates of 5 oz./acre or less and meets the following conditions:

- Medium and fine soils
- Soil pH < 7.2
- Rainfall or irrigation must exceed 15" following application of **Willowood Sulfen Cloran**.

Replanting Instructions

Soybeans may be replanted in fields treated with **Willowood Sulfen Cloran** alone if the initial planting of soybeans fails to produce a uniform stand. Do not re-treat fields with a second application of **Willowood Sulfen Cloran**. When tank mixing with an EPA registered product, refer to the replant instructions on the label 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 **Willowood Sulfen Cloran**.

When a tank mix is used, consult the product's labels for any additional replant instructions.

APPLICATION INFORMATION

Use Restrictions:

This product may only be used to control pre-emergence control of broadleaf and grass weeds in soybeans only. Do not make application to crops other than soybeans. Make application with ground sprayers only.

Ground Application

Make application using 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 volume per acre. Do not exceed 40 PSI spray pressure unless otherwise required by the spray nozzle manufacturer.

Continuous agitation throughout the application is required. Avoid swath overlaps. Shut off spray booms when turning, slowing, or stopping as over application may result. Do not allow spray mixtures of **Willowood Sulfen Cloran** to sit overnight as settling of product and difficulty of re-suspending may result.

To avoid injury to sensitive crops, spray equipment used for applications of **Willowood Sulfen Cloran** must be drained and thoroughly cleaned with water plus ammonia or detergent prior to being used to apply other products. Refer to the **Sprayer Equipment Clean-Out** section.

Avoid all direct and/or indirect spray contact with non-target plants. Do not make application near desirable vegetation. Provide adequate distance between target area and desirable plants to minimize exposure.

Runoff and Wind Erosion Precautions

Do not make application under conditions that favor runoff or wind erosion of soil that contains Willowood Sulfen Cloran 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 make application to impervious substrates such as paved or highly compacted surfaces or frozen or snow-covered ground.
- Do not make application 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 ½ inch of rainfall has occurred between application and the first irrigation.

SPRAY DRIFT

Spray Nozzles and Droplet Size:

- Select nozzles and application pressure that deliver medium to coarse or larger spray droplets as indicated in the nozzle manufacturer's recommendations and in accordance with ASABE Standard S-572.
- Select coarse to very coarse droplet size when sulfentrazone is used as a pre-emergent/pre-plant application.
- Select medium to very coarse droplet size when sulfentrazone is used post-emergence with a contact burndown herbicide.
- Applicators may spray only when wind speed is between 3 and 10 mph.
- Do not apply as spray droplets smaller than medium to coarse (defined by the ASABE standard).

Spray Volume:

- Ground applicators must use a minimum finished spray volume of 10 gallons per acre.
- When sulfentrazone is tank mixed with a contact burndown herbicide, ground applicators must use a minimum spray volume of 15 gallons per acre.

SPRAY DRIFT ADVISORY

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS. The interaction of many equipment- and weather-related factors determine the potential for spray drift.

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.

Importance of Droplet Size

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

Controlling Droplet Size – Ground Boom

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

Boom Height - Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop and have minimal bounce.

Shielded Sprayers

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

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 must 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 **Willowood Sulfen Cloran** 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 must 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 Willowood Sulfen Cloran Applied Alone

Refer to the **Timing and Method of Application** section of this label to select the proper application rate for **Willowood Sulfen Cloran**. Fill the spray tank with approximately ½ the volume of water required for the area being treated. While the agitator is operating, add the specified amount of **Willowood Sulfen Cloran** for area being treated by opening the container and measuring directly into the spray tank. Allow the product to fully disperse. Complete the addition of spray water. Continue agitation while filling, mixing and application. Apply the spray mixture of **Willowood Sulfen Cloran** immediately after mixing. Do not store spray tank mixture.

Willowood Sulfen Cloran Applied in Tank Mix Combination

Refer to the **Timing and Method of Application** section of label to select the proper application rate for **Willowood Sulfen Cloran**. Read and follow all applicable use directions, precautions, and restrictions on the respective tank mix product labels. To ensure product compatibility, a jar test must be conducted before large volume mixing and use on the entire field. Provided the jar test indicates the mixture is compatible, prepare the tank mixture as directed below.

Fill the spray tank with approximately ½ the volume of water required for the area being treated. While the agitator is operating, add the specified amount of **Willowood Sulfen Cloran** for the area being treated by opening the container and measuring directly into the spray tank. Allow the product to fully disperse. Next add the specified amount(s) of the additional tank mix product(s) in the following order:

1. Dry formulations (e.g., wettable powders, dry flowables);
2. Liquid suspensions (e.g., flowables); and
3. Liquids (e.g., ECs).

After each addition, allow time for complete mixing and dispersion, adding water as necessary. Complete the addition of spray water. Continue agitation while filling, mixing and application. Use tank mixtures of **Willowood Sulfen Cloran** immediately after mixing. Do not store spray tank mixtures.

Fertilizer Spray Mixtures

Willowood Sulfen Cloran applications alone or with recommended tank mixtures in conjunction with fertilizer solutions may be used unless otherwise directed by product label. Test small quantities for compatibility prior to use on large scale using following procedure before mixing in full spray tank quantities:

1. Add 1 pint of fertilizer solution to a quart jar.
2. Add the specified amount of herbicide based on the table below.
3. If more than one product is to be used, add each separately using the sequence below: 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*
Wettable Powders Or Dry Flowables	0.5 lb.	0.75 tsp.
	1.0 lb.	1.5 tsp.
	2.0 lbs.	3.0 tsp.
	3.0 lbs.	4.5 tsp.
Emulsifiable Concentrates	1.0 pt.	0.5 tsp.
Liquid Flowables	1.0 qt.	1.0 tsp.
	2.0 qts.	2.0 tsp.
	3.0 qts.	3.0 tsp.

*Amount is based on a spray volume of 25 gals. per acre; for lower or higher spray volumes, adjust fluid fertilizer quantity accordingly.

4. Close jar with lid and shake well.
5. Observe mixture for several seconds, and again after 5 minutes and after 30 minutes. If herbicide/fertilizer combination remains mixed or can be remixed readily (ex. 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, and follow the directions noted below.

Willowood Sulfen Cloran Applied Alone with Liquid Fertilizer

To add **Willowood Sulfen Cloran** to a liquid fertilizer carrier, **Willowood Sulfen Cloran** must be pre-mixed in a slurry of product and clear water first. Fill the spray tank one-half full of fertilizer solution. While the agitator is operating, add the slurry with **Willowood Sulfen Cloran** to the spray tank. Use a minimum of one gallon of water for each container of **Willowood Sulfen Cloran**. Stir until the solution is completely dissolved. Then add the 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 tank with fertilizer. Continue agitation while filling, mixing and application. Use the spray mixture of **Willowood Sulfen Cloran** immediately after mixing. Do not store spray tank mixture.

Willowood Sulfen Cloran Applied in Tank Mix Combinations with Fertilizer

Fill the spray tank one-half full of fertilizer solution. While the agitator is operating, add a slurry of **Willowood Sulfen Cloran** as described in the preceding paragraph. Then dilute the individual tank mix partners with sufficient water to form a free-flowing dispersion, and add to the spray tank of fertilizer. Continue maintaining agitation, add the other products in the following order:

- 1) Dry formulations slurry (wettable powders, dry flowables)
- 2) Diluted liquid formulations (ECs, flowables)
- 3) Complete filling the sprayer tank with fertilizer.
- 4) Continue agitation while filling, mixing and application. Use tank mixtures of **Willowood Sulfen Cloran** immediately after mixing. Do not store spray tank mixtures.

Sprayer Equipment Clean-Out

The sprayer and application equipment must be thoroughly cleaned using the following procedure after spraying **Willowood Sulfen Cloran** and prior to using spray equipment for any other applications:

1. Drain spray tank, hoses, and spray boom and thoroughly rinse the inside of the sprayer tank with clean water to remove residues and sediment. Thoroughly flush spray equipment hoses, boom, and nozzles with clean water.
2. Fill the tank ½ full of clean water, and add appropriate detergent or ammonia (follow manufacturer's directions for use). Fill the tank to capacity and operate the sprayer for a minimum of 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. Prior to using the sprayer, drain the spray system. Rinse the tank with clean water and flush through the hoses, boom, and nozzles. Remove and clean screens and spray tips 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.

Should small quantities of **Willowood Sulfen Cloran** remain in mixing, loading and/or spray equipment, they may be released during subsequent applications potentially causing adverse effects to certain crops and other vegetation. Willowood, LLC accepts no liability for any effects due to inadequately cleaned equipment.

Restrictions:

- 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.

Soybeans (Conventional and GMO)

Timing and Method of Application

Application of **Willowood Sulfen Cloran** may be made alone or in tank mixture combinations for the control of the weeds listed in conventional or GMO soybean varieties.

Application Rates

Soil Organic Matter ¹	Willowood Sulfen Cloran (Oz./Acre) ²	Rate of Willowood Sulfen Cloran (Lb. a.i./Acre)	
		Sulfentrazone	Cloransulam-methyl
3% or less	6.45	0.25	0.032
greater than 3%	8	0.31	0.04

¹Do not make application of **Willowood Sulfen Cloran** to soils classified as sand with less than 1% organic matter.
²Maximum application rates: Refer to the **Pre-Plant Surface** and **Pre-Emergence Application** for specifications.

Pre-Plant Incorporated Application

Make application of **Willowood Sulfen Cloran** alone or in tank mix combination with other herbicides registered for pre-plant 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. Follow the incorporation directions for the tank mix partner(s) when making an application of **Willowood Sulfen Cloran** in tank mix combination with other herbicide(s). Follow applicable use instructions, including application rates, precautions and restrictions of each product used in the tank mixture.

Pre-Plant Surface Application

Make application of **Willowood Sulfen Cloran** alone or in tank mix combination with other herbicides registered for pre-plant soil surface application to soybeans. Follow use instructions, including application rates, precautions and restrictions of each product used in the tank mixture when application is made in tank mix combination.

Pre-Emergence Application

Make application at planting time or within 3 days after planting. Application of **Willowood Sulfen Cloran** may be made alone or in tank mix combination with other herbicides registered for pre-emergence application to soybeans. Follow applicable use instructions, including application rates when application is made in tank mix combination. Observe the precautions and restrictions of each product used in the tank mixture. **Note:** Make application at ½ the maximum application rate for suppression of weeds in Roundup Ready soybeans, maintaining control with sequential applications of registered post-emergence herbicide products. Make application before planting, at planting time or prior to seed germination. Properly closed seed furrows are required when making application at planting time or before seed germination. Do not make application later than 3 days after planting or after seed germination, as crop injury may result.

Weeds Controlled

Woodward Sulfen Chloran will provide control or suppression of the following broadleaf weeds and grasses when used as directed:

BROADLEAVES

Common Name	Scientific Name	Common Name	Scientific Name
Amaranth, Palmer	<i>Amaranthus palmeri</i>	Morningglory, Smallflower	<i>Jacquemontia tamnifolia</i>
Amaranth, Spiny	<i>Amaranthus spinosus</i>	Morningglory, Tall	<i>Ipomoea purpurea</i>
Anoda, Spurred	<i>Anoda cristata</i>	Mustard, Wild	<i>Brassica kaber</i>
Beggarweed, Florida	<i>Desmodium tortuosum</i>	Nightshade, Eastern Black	<i>Solanum ptycanthum</i>
Carpetweed	<i>Mollugo verticillata</i>	Nightshade, Hairy	<i>Solanum sarrachoides</i>
Cocklebur, Common	<i>Xanthium strumarium</i>	Nightshade, Silverleaf	<i>Solanum elaeagnifolium</i>
Copperleaf, Hophornbeam	<i>Acalypha ostryifolia</i>	Pigweed, Redroot	<i>Amaranthus retroflexus</i>
Croton, Tropic	<i>Croton glandulosus</i>	Pigweed, Smooth	<i>Amaranthus hybridus</i>
Daisy, American	<i>Eclipta alba</i>	Pigweed, Tumble	<i>Amaranthus albus</i>
Dayflower, Common	<i>Commelina communis</i>	Poorjoe	<i>Diodia teres</i>
Galinsoga, Hairy	<i>Galinsoga ciliata</i>	Purslane, Common	<i>Portulaca oleracea</i>
Groundcherry, Clammy	<i>Physalis heterophylla</i>	Pusley, Florida	<i>Richardia scabra</i>
Groundcherry, Cutleaf	<i>Physalis angulata</i>	Ragweed, Common ²	<i>Ambrosia artemisiifolia</i>
Horseweed (Marestail) ²	<i>Coryza canadensis</i>	Ragweed, Giant ²	<i>Ambrosia trifida</i>
Jimsonweed	<i>Datura stramonium</i>	Senna, Coffee	<i>Cassia occidentalis</i>
Kochia	<i>Kochia scoparia</i>	Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>
Ladysthumb	<i>Polygonum persicaria</i>	Smellmelon	<i>Cucumis melo</i>
Lambsquarters, Common	<i>Chenopodium album</i>	Spurge, Spotted	<i>Euphorbia maculata</i>
Mallow, Venice	<i>Hibiscus trionum</i>	Starbur, Bristly	<i>Acanthospermum hispidum</i>
Mexicanweed	<i>Caperonia castaneifolia</i>	Sunflower, Common	<i>Helianthus annuus</i>
Morningglory, Entireleaf	<i>Ipomoea hederacea integruscula</i>	Teaweed (Prickly Sida)	<i>Sida spinosa</i>
Morningglory, Ivyleaf	<i>Ipomoea hederacea</i>	Thistle, Russian	<i>Salsola kali</i>
Morningglory, Palmleaf	<i>Ipomoea wrightii</i>	Velvetleaf	<i>Abutilon theophrasti</i>
Morningglory, Pitted ¹	<i>Ipomoea lacunosa</i>	Waterhemp, Common	<i>Amaranthus rudis</i>
Morningglory, Purple	<i>Ipomoea turbinata</i>	Waterhemp, Tall	<i>Amaranthus tuberculatus</i>
Morningglory, Red	<i>Ipomoea coccinea</i>		

¹Suppression or partial control only.

²Will not provide control of ALS-resistant biotypes of these weed species.

(continued)

Weeds Controlled (continued)

Willowood Sulfen Cloran will provide control or suppression of the following broadleaf weeds and grasses when used as directed:

GRASSES

Common Name	Scientific Name	Common Name	Scientific Name
Barnyardgrass ¹	<i>Echinochloa crus-galli</i>	Foxtail, Green	<i>Setaria viridis</i>
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	Foxtail, Yellow ¹	<i>Setaria lutescens</i>
Crabgrass, Large	<i>Digitaria sanguinalis</i>	Goosegrass	<i>Eleusine indica</i>
Crabgrass, Smooth	<i>Digitaria ischaemum</i>	Johnsongrass, Seedling ¹	<i>Sorghum halepense</i>
Crabgrass, Southern ¹	<i>Digitaria ciliaris</i>	Orchardgrass	<i>Dactylis glomerata</i>
Crowfootgrass ¹	<i>Dactyloctenium aegyptium</i>	Panicum, Fall	<i>Panicum dichotomiflorum</i>
Foxtail, Giant ¹	<i>Setaria faberi</i>	Panicum, Texas	<i>Panicum texanum</i>

SEDGES

Common Name	Scientific Name	Common Name	Scientific Name
Nutsedge, Purple	<i>Cyperus rotundus</i>	Sedge, Annual	<i>Cares</i> spp.
Nutsedge, Yellow	<i>Cyperus esculentus</i>		

¹Suppression or partial control only.

Limited Residual Rates for Planned Sequential Application Program in Soybeans – Reduced Rates

Willowood Sulfen Cloran may be used at the reduced rates listed below in conjunction with a planned, effective post herbicide program. **Willowood Sulfen Cloran** at the rates listed below will provide early season control or suppression to reduce early season weed competition. Follow all application directions for **Willowood Sulfen Cloran**. **Willowood Sulfen Cloran** may have reduced control of certain ALS-resistant biotypes including marestail, giant ragweed, common ragweed, and cocklebur. If there is documented ALS resistance in your area with the post herbicide, make application with the use rates listed in the full rate **Application Rates** chart above.

Apply prior to planting, at planting time or prior to seed germination. Properly closed seed furrows are required when applying at planting. Recommended post-emergence treatments may include any product or combination of products labeled for use on soybeans.

Reduced Rate Application Rates

Soil Organic Matter ¹	Willowood Sulfen Cloran (Oz./Acre)	Rate of Willowood Sulfen Cloran (Lb. a.i./Acre)	
		Sulfentrazone	Cloransulam-methyl
3% or less	3.00 – 5.00	0.116 – 0.193	0.015 – 0.025
greater than 3%	4.00 – 6.00	0.155 – 0.233	0.020 – 0.030

¹Do not make application of **Willowood Sulfen Cloran** to soils classified as sand with less than 1% organic matter.

Tank Mixes of Willowood Sulfen Cloran with Sharpen Herbicide for use in Reduced Till or No-Till Soybeans (AL, AR, CO, CT, DE, GA, IL, IN, IA, KS, KY, LA, MD, MI, MN, MS, MO, NE, NH, NJ, NC, ND, OH, OK, PA, SC, SD, TN, VA, WV, WI)

Users must read, understand and strictly follow all label directions, precautions and restrictions for Sharpen Herbicide. To improve burndown of existing broadleaf weeds before planting, make application of **Willowood Sulfen Cloran** at labeled use rates with Sharpen at 1 oz. per acre as a pre-plant application in reduced till or no-till soybeans. Make application 14 or more days prior to soybean planting. Refer to the product labels for specific information on use, precautions, restrictions and weeds controlled. Do not use this tank mix on coarse soils with <2% organic matter.

Pre-Plant Burndown Application

Application of **Willowood Sulfen Cloran** made at 6.45 to 8 oz. per acre as in the full rate **Application Rates** chart above for all soybeans, aids in the burndown of weeds listed below when applied as directed. **Willowood Sulfen Cloran** can provide improved burndown activity on weeds that have emerged in no-till applications, but is not intended to replace an appropriate pre-plant burndown program. For control of the weeds in the **Weeds Controlled** table in no-till/minimum till fields, **Willowood Sulfen Cloran** must be tank mixed or used in combination with a full burndown program. The program may include 2,4-D alone or in combination with Aim, dicamba, glyphosate, glufosinate, paraquat, or other appropriate burndown herbicides in tank mixture using the specified appropriate rate for the size and species of weeds present. Reduced rates of **Willowood Sulfen Cloran** and/or the corresponding burndown partner herbicide(s) can result in weed escapes and unsatisfactory product performance.

Make application in a minimum of 10 gallons per acre spray volume. Thorough coverage is essential. Use a non-ionic surfactant (NIS) that contains at least 80% active ingredient strength at 0.125 – 0.25% v/v (1-2 pints per 100 gallons of spray solution) plus ammonium sulfate (AMS) at 2.5% v/v. Crop Oil Concentrate (COC) and Methylated Seed Oil (MSO) at 1.2% v/v plus ammonium sulfate may be used. Burndown results may be slowed or reduced when environmental factors impact the growth of the weeds just before or after application (ex. temperature extremes, widely fluctuating day and night air temperatures, drought, heat stress or soils with high water content).

Weeds Controlled			
When applied as directed for burndown, Willowood Sulfen Cloran will provide control or suppression of the following broadleaf weeds that are up to 3 inches in height:			
BROADLEAVES			
Common Name	Scientific Name	Common Name	Scientific Name
Cocklebur, Common	<i>Xanthium strumarium</i>	Morningglory, Red	<i>Ipomoea coccinea</i>
Horseweed (Marestail) ²	<i>Coryza canadensis</i>	Morningglory, Smallflower	<i>Jacquemontia taminifolia</i>
Jimsonweed	<i>Datura stramonium</i>	Morningglory, Tall	<i>Ipomoea purpurea</i>
Mallow, Venice	<i>Hibiscus trionum</i>	Ragweed, Common ²	<i>Ambrosia artemisiifolia</i>
Morningglory, Entireleaf	<i>Ipomoea hederacea integruscula</i>	Ragweed, Giant ²	<i>Ambrosia trifida</i>
Morningglory, Ivyleaf	<i>Ipomoea hederacea</i>	Sicklepod	<i>Cassia obtusifolia</i>
Morningglory, Palmleaf	<i>Ipomoea wrightii</i>	Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>
Morningglory, Pitted ¹	<i>Ipomoea lacunosa</i>	Sunflower, Common	<i>Helianthus annuus</i>
Morningglory, Purple	<i>Ipomoea turbinata</i>	Velvetleaf ¹	<i>Abutilon theophrasti</i>
¹ For control of velvetleaf, use 28% nitrogen (UAN) or AMS with NIS or COC.			
² Willowood Sulfen Cloran will not provide control of ALS-resistant biotypes of these weed species.			

Precautions:

- Properly closed seed furrows are required when applying at planting time or within 3 days after planting.
- Maintain spray tank agitation until the application is completed.

Restrictions:

- Do not make application of this product through any type of irrigation system.
- Do not apply more than one soil application per acre per year.
- Do not make application of more than 8 oz. of **Willowood Sulfen Cloran** per acre per year as a cumulative total of soil application of **Willowood Sulfen Cloran** and post-emergence application of other cloransulam-containing herbicides (1 oz. per acre of **Willowood Sulfen Cloran** contains 0.005 lb. a.i. cloransulam-methyl. Do not apply more than 0.055 lb. a.i. per acre of cloransulam-methyl per year).
- Do not feed treated soybean forage or soybean hay to livestock.
- Pre-Harvest Interval (PHI): Do not harvest soybeans for 65 days after application of **Willowood Sulfen Cloran**.
- Do not make application of **Willowood Sulfen Cloran** 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.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Keep away from fire and sparks. Store in a cool, dry, well-ventilated area.

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

CONTAINER HANDLING:

Non-refillable containers (50 pounds or less): Non-refillable 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. 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by procedures approved by State and local authorities.

Non-refillable containers (Greater than 50 pounds): Non-refillable 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. Fill the container ¼ 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, or by procedures approved by State and local authorities.

Returnable/Refillable 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.

Outer Foil Pouches of Water Soluble Packets (WSP): Non-refillable container. Do not reuse or refill this container. Offer for recycling if available or, dispose of the empty outer foil pouch in the trash as long as WSP is unbroken. If the outer pouch contacts the formulated product in any way, the pouch must be triple rinsed with clean water. Add the rinsate to the spray tank and dispose of the outer pouch as described previously.

CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER!

IMPORTANT: READ BEFORE USE

CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the unopened product container at once. By using the product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Willowood, LLC. To the extent consistent with applicable law, such risks shall be assumed by the user or buyer.

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