



U.S. ENVIRONMENTAL PROTECTION AGENCY  
 Office of Pesticide Programs  
 Registration Division (7505P)  
 1200 Pennsylvania Ave., N.W.  
 Washington, D.C. 20460

**EPA Reg. Number:**

93182-30

**Date of Issuance:**

2/15/22

**NOTICE OF PESTICIDE:**

Registration  
 Reregistration  
 (under FIFRA, as amended)

**Term of Issuance:**

Unconditional

**Name of Pesticide Product:**

Gharda Mesotrione 4SC Herbicide

**Name and Address of Registrant (include ZIP Code):**

Gharda Chemicals International Inc.  
 c/o IPM Resources LLC (Agent)  
 4032 Crockers Lake Blvd., Suite 818  
 Sarasota, FL 34238

**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 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 unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product when the Agency requires all registrants of similar products to submit such data.

**Signature of Approving Official:**

*Heather E McFarley*

Heather McFarley, Product Manager 24  
 Fungicide & Herbicide Branch, Registration Division (7505P)

**Date:**

2/15/22

2. Make the following label changes before you release the product for shipment:
  - Revise the EPA Registration Number to read, “EPA Reg. No. 93182-30.”
3. Submit one copy of the revised final printed label for the record before you release the product for shipment.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 12/06/2021

If you have any questions, please contact Francisco Llarena-Arias via email at [llarena-arias.francisco@epa.gov](mailto:llarena-arias.francisco@epa.gov)

Enclosure:

- Stamped label

MESOTRIONE GROUP 27 HERBICIDE

# GHARDA Mesotrione 4SC Herbicide

For Control of Annual Broadleaf Weeds in Asparagus, Bluegrass and Ryegrass (annual and perennial) and Tall Fescue grown-for-seed, Bush Crops (incl. Caneberries), Citrus Fruit, Corn (Incl. Field Corn, Sweet Corn, Seed Corn, and Yellow Popcorn), Cranberry, Flax, Oats, Okra, Pearl Millet, Pome Fruit, Rhubarb, Sorghum (grain and sweet), Soybean, Stone Fruit, Sugarcane, Tree Nuts, and Turfgrass.

Active Ingredient:

Mesotrione: (CAS No. 104206-82-8).....	40%
Other.....	60%
Total:	100%

Gharda Mesotrione 4SC Herbicide is formulated as a suspension concentrate (SC) and contains 4 lb. (480 grams/liter) of active ingredient Mesotrione per gallon.

## KEEP OUT OF REACH OF CHILDREN.

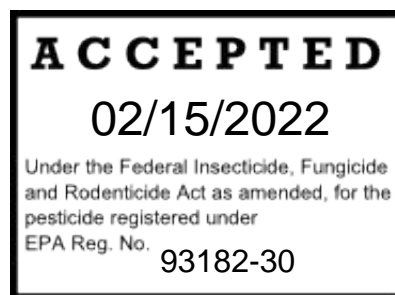
## CAUTION

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No.:93182 -tba

EPA Est.: tba

Manufactured for:  
Gharda Chemicals International Inc  
760 Newtown-Yardley Road  
Suite 110  
Newtown, PA 18940  
1 215 968-9474



## Net Contents

  tba   gallons (Liters   tba   )

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To Be Added Prior to Printing

<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. 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 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>
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• <b>DO NOT</b> induce vomiting unless told to by the poison control center or doctor.</li> <li>• <b>DO NOT</b> give anything by mouth to an unconscious person.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor or going for treatment.	
<b>HOT LINE NUMBER</b>	
For 24-Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance, Call <b>1-866-359-5660</b>	

## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

#### CAUTION.

Harmful if absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

#### Personal Protective Equipment (PPE)

##### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves

#### User Safety Requirements

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

#### Engineering Controls

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

## **User Safety Recommendations**

### **Users should:**

- 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 or rinsate.

## **Surface Water Advisory**

This product may contaminate water through drift of spray in wind. Gharda Mesotrione 4SC Herbicide has a high potential for runoff for several weeks after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains Gharda Mesotrione 4SC Herbicide. A level well maintained vegetative buffer strip between areas to which Gharda Mesotrione 4SC Herbicide is applied and surface water features including ponds, streams, and springs will reduce the potential for contamination of water from runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce Gharda Mesotrione 4SC Herbicide's contribution to surface water contamination.

## **Physical and Chemical Hazards**

**DO NOT** use or store near heat or open flame. **DO NOT** mix or allow contact with oxidizing agents or reducing agents.

## **DIRECTIONS FOR USE**

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

**DO NOT** apply Gharda Mesotrione 4SC Herbicide 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, including plants, soil, or water, is:**

- **Coveralls**
- **Shoes plus socks**
- **Chemical-resistant gloves**

### **NON-AGRICULTURAL USE REQUIREMENTS**

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard, 40 CFR Part 170. The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, and greenhouses.

- **DO NOT** enter treated areas until sprays have dried.

### **PRODUCT INFORMATION**

Gharda Mesotrione 4SC Herbicide is a systemic pre-emergence and post-emergence herbicide for the selective contact and residual control of broadleaf weeds in field corn, seed corn, yellow popcorn, sweet corn, and other listed crops. When used pre-emergence, weeds take up the product through the soil during emergence. Dry conditions following application may reduce the pre-emergence activity of Gharda Mesotrione 4SC Herbicide. If an activating rain (0.25 inches) is not received within 7-10 days after a pre-emergence application, where appropriate, rotary hoeing is suggested to activate the herbicide. When used post-emergence, susceptible weeds take up the herbicide through the treated foliage and cease growth soon after application. Complete death of the weeds may take up to 2 weeks. The product is absorbed through the soil and/or by the foliage of emerged weed

Gharda Mesotrione 4SC Herbicide is not effective for the control of most grass weeds. Pre-emergence grass herbicides or post-emergence grass herbicides can be tank mixed with Gharda Mesotrione 4SC Herbicide to provide broad spectrum weed control in corn (see appropriate section of label for this information). Gharda Mesotrione 4SC Herbicide can be applied post-emergence following a pre-emergence grass herbicide application. Gharda Mesotrione 4SC Herbicide can also be used in combination with a burndown herbicide, prior to planting, to provide added burndown and residual weed control in field corn, seed corn, yellow popcorn, and sweet corn.

## **WEED RESISTANCE MANAGEMENT**

Gharda Mesotrione 4SC herbicide is a Group 27 herbicide. Naturally occurring biotypes of certain broadleaf weed species with resistance to triazines, glyphosate, PPO, HPPD and ALS inhibiting herbicides are known to exist. Performance of Gharda Mesotrione 4SC Herbicide is not affected by the presence of biotypes resistant to triazines, glyphosate, PPO or ALS inhibiting herbicides.

To prevent the risk of weeds developing resistance to Gharda Mesotrione 4SC Herbicide in corn, always use full labeled rates. If applying Gharda Mesotrione 4SC Herbicide post-emergence after a Mesotrione- containing pre-emergence herbicide, always add atrazine as a tank mix partner. No more than 0.24 lb of Mesotrione active ingredient must be applied per acre of corn per year (equivalent of 7.7 fl oz (0.24 lb ai/A) of Gharda Mesotrione 4SC Herbicide). If additional herbicide must be applied, it is recommended that a different mode of action be used, i.e., other than an HPPD inhibitor (Group 27 Herbicide). Gharda Mesotrione 4SC Herbicide must be applied at full label rates to help prevent selection for, or population shifts toward, marginally resistant weed species and/or species biotypes.

### **Principles of Herbicide Resistant Weed Management Scout and know your field**

- Know weed species present in the field to be treated through scouting and field history. An understanding of weed biology is useful in designing a resistance management strategy. Ensure the weed management program will control all weeds present.
- Fields should be scouted prior to application to determine species present and growth stage. Always apply this herbicide at the full labeled rate and correct timing for the weeds present in the field.

### **Utilize non-herbicidal practices to add diversity**

- Use diversified management tactics including cover crops, mechanical weed control, harvest weed seed control, and crop rotation as appropriate.
- Use good agronomic practices that enhance crop competitiveness.
- Plant into weed-free fields utilizing tillage or an effective burndown herbicide for control of emerged weeds.
- Sanitize farm equipment to avoid spreading seed or vegetative propagules prior to leaving fields.

### **Difficult to control weeds**

- Fields with difficult to control weeds should be planted in rotation with crops that allow the use of herbicides with an alternative mode of action or different management practices.
- Difficult to control weeds may require sequential applications, including a broad spectrum pre-emergence herbicide followed by one or more post-emergence herbicide applications. Utilize herbicides containing different modes of action effective on the target weeds in sequential applications.

### **DO NOT overuse the technology**

- **DO NOT** use more than two applications of this or any other herbicide with the same mode of action in a single growing season unless mixed with an herbicide



with a different mode of action which provides overlapping spectrum for the difficult to control weeds.

### **Scout and inspect fields following application**

- Prevent an influx of weeds into the field by controlling weeds in field borders.
- Scout fields after application to verify that the treatment was effective.
- Suspected- herbicide resistant weeds may be identified by these indicators
  - Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
  - A spreading patch of non-controlled plants of a particular weed species; and
- Surviving plants mixed with controlled individuals of the same species.
- Report non-performance of Gharda Mesotrione 4SC Herbicide to your Gharda Chemicals International Inc retailer or Gharda Chemicals International Inc representative. If resistance is suspected ensure weed escapes are controlled using an herbicide with an effective mode of action and/or use non-chemical means to prevent further seed production.

### **Prevent weed escapes before, during, and after harvest**

- **DO NOT** allow weed escapes to produce seed or vegetative structures including tubers or stolon's which contribute to spread and survival. Consider harvest weed seed management and control weeds post-harvest to prevent seed production.

### **Resistant weeds**

- Contact your local Gharda Chemicals International Inc representative, retailer, crop advisor or extension agent to determine if weeds resistant to this mode of action are present in your area. If resistant biotypes have been reported, use the full labeled rate of Gharda Mesotrione 4SC Herbicide, apply at the labeled timing, and tank-mix with a different mode of action product so there are multiple effective modes of application for each suspected resistant weed.

### **USE RESTRICTIONS:**

- **DO NOT** apply Gharda Mesotrione 4SC Herbicide to white popcorn or ornamental (Indian) corn.
- **DO NOT** cultivate corn within 7 days before or after a Gharda Mesotrione 4SC Herbicide application as weed control from the Gharda Mesotrione 4SC Herbicide application may be reduced.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide through any type of irrigation system unless specified otherwise under the specific crop section on the label.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide with suspension fertilizers as the carrier.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide post-emergence in a tank mix with emulsifiable concentrate grass herbicides, unless specifically addressed under one of the tank mixes sections of this label, or injury may occur.
- **DO NOT** use aerial application to apply Gharda Mesotrione 4SC Herbicide unless specified otherwise under the specific crop section on the label.

## USE PRECAUTIONS:

- Severe corn injury resulting in yield loss may occur if Gharda Mesotrione 4SC Herbicide is applied foliar post-emergence to corn in a tank mix with any organophosphate or carbamate insecticide.
- Severe corn injury resulting in yield loss may occur if any organophosphate or carbamate insecticide is applied foliar post-emergence within 7 days before or 7 days after Gharda Mesotrione 4SC Herbicide application.
- When weeds are stressed due to drought, heat, lack of fertility, flooding, or prolonged cool temperatures, control can be reduced or delayed since the weeds are not actively growing. Weed escapes or regrowth may occur when application is made under prolonged stress conditions. Optimum weed control will be obtained if an application of Gharda Mesotrione 4SC Herbicide is made following label directions when weeds are actively growing.
- Gharda Mesotrione 4SC Herbicide may be applied with pyrethroid type insecticides (e.g., lambda-cyhalothrin).

## SPRAY DRIFT MANAGEMENT

As with all crop protection products, it is important to avoid off-target movement onto adjacent land or crops, as even small amounts may injure sensitive plants. To reduce spray drift, the following spray drift management requirements must be followed.

### MANDATORY SPRAY DRIFT REQUIREMENTS

#### Aerial Applications

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

#### Ground Boom Applications

- Apply with the nozzle height recommended by the manufacturer, but no more than 3 feet above the ground or crop canopy unless making a turf, pasture, or rangeland application, in which case applicators may apply with a nozzle height no more than 4 feet above the ground.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a Coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a Medium or coarser droplet size (ASABE S572.1).
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during Temperature inversions.

#### Boom-less Ground Applications

- Applicators are required to use a coarse droplet size (ASABE S572.1) for all applications.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions

## **SPRAY DRIFT ADVISORIES**

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

## **IMPORTANCE OF DROPLET SIZE**

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

### **Controlling Droplet Size – Ground Boom**

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure 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 – Ground Boom**

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.

## **TEMPERATURE AND HUMIDITY**

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

## **TEMPERATURE INVERSIONS**

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

## **WIND**

Drift potential generally increases with wind speed. **AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.**

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

## **WINDBLOWN SOIL PARTICLES**

Gharda Mesotrione 4SC Herbicide has the potential to move off-site due to wind erosion. Soils that are subject to wind erosion usually have a high silt and/or fine to very fine sand fractions and low organic matter content. Other factors which can affect the movement of windblown soil include the intensity and direction of prevailing winds, vegetative cover, site slope, rainfall, and drainage patterns. Avoid applying Gharda Mesotrione 4SC Herbicide if prevailing local conditions may be expected to result in off-site movement.

## **ADDITIONAL SPRAY DRIFT REQUIREMENTS FOR AERIAL APPLICATIONS.**

The distance of the outer-most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.

Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees. Where states have more stringent regulations, they must be observed.

Spray must be released at the lowest height consistent with effective weed control and flight safety.

For best results, ensure that each specific aerial application vehicle used is quantifiably pattern tested for aerial application of Gharda Mesotrione 4SC Herbicide initially and every year thereafter.

For aerial application use only nozzles producing coarse-ultra coarse droplets.

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

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. Increase swath adjustment distance with increasing drift potential (higher wind, smaller drops, etc.).

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. Avoid application below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Ensure that every applicator is familiar with local wind patterns and how they affect drift.

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.

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, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

## **RESTRICTIONS**

- **DO NOT** use nozzles producing fine-medium size droplets.
- **DO NOT** make applications 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.
- **DO NOT** apply during a temperature inversion, because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small, suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a connected cloud (under low wind conditions) indicates an inversion, while smoke that moves upwards and rapidly dissipates indicates good vertical air mixing.

## APPLICATION INFORMATION

### PRE-EMERGENCE GROUND APPLICATION

Apply Gharda Mesotrione 4SC Herbicide pre-emergence with a carrier volume of 10-60 gal/A.

Spray nozzles must be uniformly spaced, the same size and type, and must provide accurate and uniform application. Use spray nozzles that provide medium to coarse droplet size to provide good coverage and avoid drift. Apply in a spray volume of 10-60 gal/A using water or liquid fertilizer (excluding suspension fertilizers) as the carrier. Use a pump that can maintain a pressure of at least 35-40 psi at the nozzles and provide proper agitation within the tank to keep the product dispersed. Lower pressures may be used with extended range or drift reduction nozzles.

Always ensure that agitation is maintained until spraying is completed, even if stopped for brief periods of time. If the agitation is stopped for more than 5 minutes, resuspend the spray solution by running on full agitation prior to spraying.

### POST-EMERGENCE GROUND APPLICATION

Spray nozzles must be uniformly spaced, the same size and type, and must provide accurate and uniform application. Use spray nozzles that provide medium to coarse droplet size to provide good coverage and avoid drift. Good weed coverage is essential for optimum weed control. Boom height for broadcast over-the-top applications must be based on the height of the crop – at least 15 inches above the crop canopy.

Apply in a spray volume of 10-30 gal/A using water as a carrier. Use a pump that can maintain a pressure of at least 35-40 psi at the nozzles and provide proper agitation within the tank to keep the product dispersed. Lower pressures may be used with extended range or drift reduction nozzles. When weed foliage is dense, use a minimum of 20 gals.

Flat fan nozzles of 80° or 110° are advised for optimum post-emergence coverage. **DO NOT** use flood jet nozzles or controlled droplet application equipment for post-emergence applications.

Nozzles may be angled forward 45° to enhance penetration of the crop and provide better coverage. Ensure that all in-line strainer and nozzle screens in the sprayer are 50-mesh or coarser.

Always ensure that agitation is maintained until spraying is completed, even if stopped for brief periods of time. If the agitation is stopped for more than 5 minutes, resuspend the spray solution by running on full agitation prior to spraying.

## AERIAL APPLICATIONS

### INSTRUCTIONS FOR CORN AND SUGARCANE

#### RESTRICTIONS

- **GHARDA MESOTRIONE 4SC HERBICIDE CAN BE APPLIED AERIALY ONLY TO CORN AND SUGARCANE** (See “**CROP USE DIRECTIONS**” for additional aerial application information).
- Applications must be made in a minimum of 2 gallons of water per acre.
- For aerial application use only nozzles producing coarse-ultra coarse droplets. **DO NOT** use nozzles producing fine-medium size droplets.
- Gharda Mesotrione 4SC Herbicide may only be applied aerially only to corn and sugarcane.

- Gharda Mesotrione 4SC Herbicide may be applied aerially for pre-emergence or post-emergence weed control in corn only in the following states: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Nebraska, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin and Wyoming.
- Gharda Mesotrione 4SC Herbicide may only be applied aerially for pre-emergence or post-emergence weed control in sugarcane only in the following states: Florida, Louisiana, and Texas.

## SPRAY ADDITIVES

### POST-EMERGENCE ADJUVANTS

When an adjuvant is to be used with Gharda Mesotrione 4SC Herbicide, the use of an adjuvant that meets the standards of the Chemical Producers and Distributors Association (CPDA) adjuvant certification program is advised.

The following adjuvant advised are intended primarily for Gharda Mesotrione 4SC Herbicide use in corn. Refer to the use directions section of each crop section for specific adjuvant Directions.

### POST-EMERGENCE APPLICATIONS TO FIELD CORN AND SEED CORN

For post-emergence applications made after the crop has emerged, add crop oil concentrate (COC) to the spray solution at the rate of 1.0 gal/100 gal of water (1.0% v/v). The use of a nonionic surfactant (NIS) at 1 qt/100 gallons of water (0.25% v/v) instead of COC is allowed, but the weed control achieved with COC is consistently better than NIS. **The use of methylated seed oil (MSO) adjuvants or MSO blend adjuvants for post-emergence applications of Gharda Mesotrione 4SC Herbicide may cause severe crop injury to occur. DO NOT use MSO adjuvants for post-emergence use unless directed for a specific tank mix under the GHARDA MESOTRIONE 4SC HERBICIDE TANK MIXTURES FOR CORN section of this label, or unless permitted by a supplemental Gharda Mesotrione 4SC Herbicide label.** In addition to COC, always add spray grade UAN (e.g., 28-0-0) to the spray solution at a rate of 2.5% (v/v) or AMS at 8.5 lb/100 gal of spray solution, except if precluded elsewhere on this label or by a supplemental Gharda Mesotrione 4SC Herbicide label.

### POST-EMERGENCE APPLICATIONS TO SWEET CORN AND YELLOW POPCORN DO NOT add UAN or AMS when making post-emergence applications of Gharda Mesotrione 4SC Herbicide to yellow popcorn or sweet corn, or severe crop injury may occur.

For post-emergence applications to yellow popcorn and sweet corn, the use of a nonionic surfactant (NIS) instead of a crop oil concentrate (COC) is advised, to minimize the risk of crop injury. A COC may be used, and will increase the level of weed control achieved, especially under dry growing conditions, but the risk of crop injury is increased significantly under lush growing conditions. For optimum control, the addition of atrazine is advised wherever rotational or local atrazine restrictions allow.

## PRE-EMERGENCE ADJUVANTS

For Gharda Mesotrione 4SC Herbicide pre plant or pre-emergence applications, and where weeds are present, the use of any adjuvant for agricultural use is permitted. In these situations, MSO type adjuvants are typically better than COC type adjuvants, which are typically better than NIS type adjuvants for enhancing weed control. UAN or AMS can be added and typically provides better weed control than not adding one of these. 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.

## SPRAY EQUIPMENT

### Cleaning Equipment After Gharda Mesotrione 4SC Herbicide Application

Special attention must be given to cleaning equipment before spraying a crop other than corn. Mix only as much spray solution as needed.

1. Flush tank, hoses, boom, and nozzles with clean water.
2. Prepare a cleaning solution of 1 gal of household ammonia per 25 gal of water. Many commercial spray tank cleaners may be used.
3. Use a pressure washer to clean the inside of the spray tank with this solution. Take care to wash all parts of the tank, including the inside top surface. If a pressure washer is not available, completely fill the sprayer with the cleaning solution to ensure contact of the cleaning solution with all internal surfaces of the tank and plumbing. Start agitation in the sprayer and thoroughly recirculate the cleaning solution for at least 15 minutes. All visible deposits must be removed from the spraying system.
4. Flush hoses, spray lines, and nozzles for at least 1 minute with the cleaning solution.
5. Dispose of rinsate from steps 1-3 in an appropriate manner.
6. Repeat steps 2-5.
7. Remove nozzles, screens, and strainers and clean separately in the ammonia solution after completing the above procedures.
8. Rinse the complete spraying system with clean water.

## MIXING PROCEDURES

Refer to the **Crop Use Directions** sections of this label for tank mixes.

Always refer to labels of other pesticide products for mixing directions and precautions which may differ from those outlined here. Use in accordance with the most restrictive of label limitations and precautions. No label dosage rates may be exceeded. Gharda Mesotrione 4SC Herbicide cannot be mixed with any product containing a label prohibition against such mixing. **DO NOT** tank mix Gharda Mesotrione 4SC Herbicide with any other insecticide, fungicide, fertilizer solution, or adjuvant not specified on the label without testing compatibility, as poor mixing may result. It is advised that the compatibility of any tank mix combination be tested on a small scale including a jar test before actual tank mixing. 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.

Follow the mixing instructions for adding Gharda Mesotrione 4SC Herbicide to the spray tank:

1. Only use sprayers in good running condition with good agitation. Ensure the sprayer is cleaned according to instructions on the label of the product used prior to Gharda Mesotrione 4SC Herbicide. For post-emergence applications, use only clean water for the spray solution. Ensure that all in-line strainer and nozzle screens in the sprayer are 50-mesh or coarser. **DO NOT** use screens finer than 50-mesh.
2. Liquid fertilizer (excluding suspension fertilizers) may be used as the carrier for pre-emergence applications.
3. Begin to fill sprayer tank or premix tank with clean water and engage agitator. Agitation must be continued throughout the entire mixing and spraying procedure.
4. When the sprayer or premix tank is half full of water, add AMS and agitate until completely dispersed.
5. Next add Gharda Mesotrione 4SC Herbicide slowly and agitate until completely dissolved. Wait at least 1 minute after the last of the Gharda Mesotrione 4SC Herbicide has been added to the tank to allow for complete dispersion. A longer agitation period may be required to disperse Gharda Mesotrione 4SC Herbicide when using cold water from sources including deep drilled wells.
6. If tank mixing, add the tank mix product next.
7. Finally, add adjuvant and UAN, if needed, and then continue to fill tank to desired level with water.

## **WEEDS CONTROLLED**

Gharda Mesotrione 4SC Herbicide applied as directed in this label will control or partially control the weeds listed in Tables 1 and 2.

Where reference is made to weeds partially controlled, partial control can either mean erratic control (good to poor) or consistent control at a level below that generally considered acceptable for commercial weed control.

For best post-emergence results, apply Gharda Mesotrione 4SC Herbicide to actively growing weeds. Dry weather following pre-emergence application of Gharda Mesotrione 4SC Herbicide may reduce residual weed control effectiveness. If irrigation is available, apply ½ to 1 inch of water after pre-emergence application. If irrigation is not available, a uniform shallow cultivation is advised as soon as weeds emerge.

Gharda Mesotrione 4SC Herbicide applied alone or in mixture with atrazine will not provide consistent or effective control of weeds identified as resistant to post-emergence HPPD inhibiting herbicides.

Refer to the crop sections on this label for specific rates and use directions.



**Table 1. Weeds Controlled with Post-emergence Applications of Gharda Mesotrione 4SC Herbicide**

Weed Common Name	Weed Scientific Name	Gharda Mesotrione 4SC Herbicide 3.0 fl oz/A (0.094 lb ai/A)	Gharda Mesotrione 4SC Herbicide 2.5-3.0 fl oz/A (0.078 to 0.094 lb ai/A) + Aatrazine <sup>1</sup>
		Apply to Weeds <5 Inches Tall <sup>2</sup>	
Amaranth, palmer	<i>Amaranthus palmeri</i>	PC <sup>3</sup>	C <sup>3</sup>
Amaranth, powell	<i>Amaranthus powellii</i>	C	C
Amaranth, spiny	<i>Amaranthus spinosus</i>	C	C
Atriplex	<i>Chenopodium orach</i>	C	C
Broadleaf signalgrass	<i>Urochloa platyphylla</i>	C <sup>3</sup>	C <sup>3</sup>
Buckwheat, wild	<i>Polygonum convolvulus</i>	PC	PC
Buffalobur	<i>Solanum rostratum</i>	C	C
Burcucumber	<i>Sicyos angulatus</i>	PC	C <sup>3</sup>
Carpetweed	<i>Mollugo verticillata</i>	C	C
Carrot, wild	<i>Daucus carota</i>	PC	C
Chickweed, common	<i>Stellaria media</i>	C	C
Cocklebur, common	<i>Xanthium strumarium</i>	C	C
Crabgrass, large	<i>Digitaria sanguinalis</i>	C <sup>3</sup>	C <sup>3</sup>
Dandelion	<i>Taraxacum officinale</i>	NC	PC
Dock, curly	<i>Rumex crispus</i>	PC	PC
Galinsoga	<i>Galinsoga parviflora</i>	C	C
Hemp	<i>Cannabis sativa</i>	C	C
Horsenettle	<i>Solanum carolinense</i>	PC	C
Jimsonweed	<i>Datura stramonium</i>	C	C
Horseweed (marestail)	<i>Conyza canadensis</i>	PC	C
Knotweed, prostrate	<i>Polygonum aviculare</i>	PC	PC
Kochia	<i>Kochia scoparia</i>	PC <sup>3</sup>	C <sup>3</sup>
Lambsquarters, common	<i>Chenopodium album</i>	C	C
Mallow, Venice	<i>Hibiscus trionum</i>	NC	C
Morningglory, entireleaf	<i>Ipomoea hederacea</i>	PC	C
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	PC	C
Morningglory, pitted	<i>Ipomoea lacunosa</i>	PC	C
Mustard, wild	<i>Brassica kaber</i>	C	C
Nightshade, black	<i>Solanum nigrum</i>	C	C
Nightshade, Eastern black	<i>Solanum ptycanthum</i>	C	C
Nightshade, hairy	<i>Solanum sarrachoides</i>	C	C
Nutsedge, yellow	<i>Cyperus esculentus</i>	PC	PC
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C	C

Weed Common Name	Weed Scientific Name	Gharda Mesotrione 4SC Herbicide 3.0 fl oz/A (0.094 lb ai/A)	Gharda Mesotrione 4SC Herbicide 2.5-3.0 fl oz/A (0.078 to 0.094 lb ai/A) + Atrazine <sup>1</sup>
		Apply to Weeds <5 Inches Tall <sup>2</sup>	
Pigweed, smooth	<i>Amaranthus hybridus</i>	C	C
Pigweed, tumble	<i>Amaranthus albus</i>	C	C
Pokeweed, common	<i>Phytolacca americana</i>	PC	PC
Potatoes, volunteer	<i>Solanum</i> spp.	C	C
Pusley, Florida	<i>Richardia scabra</i>	C <sup>3</sup>	C <sup>3</sup>
Ragweed, common	<i>Ambrosia artemisiifolia</i>	PC	C
Ragweed, giant	<i>Ambrosia trifida</i>	C <sup>3</sup>	C
Sesbania, hemp	<i>Sesbania exaltata</i>	C	C
Sida, prickly (teaweed)	<i>Sida spinosa</i>	NC	C <sup>3</sup>
Smartweed, ladythumb	<i>Polygonum persicaria</i>	C <sup>3</sup>	C
Smartweed, pale	<i>Polygonum lapathifolium</i>	C <sup>3</sup>	C
Smartweed, Pennsylvania	<i>Polygonum pensylvanicum</i>	C <sup>3</sup>	C
Sunflower, common	<i>Helianthus annuus</i>	C	C
Thistle, Canada	<i>Cirsium arvense</i>	NC	PC
Velvetleaf	<i>Abutilon theophrasti</i>	C	C
Waterhemp, common	<i>Amaranthus rudis</i>	C <sup>3</sup>	C
Waterhemp, tall	<i>Amaranthus tuberculatus</i>	C <sup>3</sup>	C

<sup>1</sup>Gharda Mesotrione 4SC Herbicide tank mixture with atrazine is approved only for use on corn and sugarcane.

<sup>2</sup>Under certain situations weeds can be controlled at larger than listed sizes, however, to protect crop yield, manage weed resistance and provide consistent control, treat weeds before they exceed 5 inches in height.

<sup>3</sup>Apply before weed exceeds 3 inches in height.

C = Control PC = Partial Control NC = Not Controlled

**Table 2. Weeds Controlled with Pre-emergence Applications of Gharda Mesotrione 4SC Herbicide**

Common Name	Scientific Name	Gharda Mesotrione 4SC Herbicide Applied Alone	Gharda Mesotrione 4SC Herbicide +Atrazine <sup>1</sup>
Amaranth, palmer	<i>Amaranthus palmeri</i>	C	C
Amarath, powell	<i>Amaranthus powellii</i>	C	C
Amaranth, spiny	<i>Amaranthus spinosus</i>	C	C
Broadleaf signalgrass	<i>Urochloa platyphylla</i>	PC	PC
Buffalobur	<i>Solanum rostratum</i>	C	C

Burclover, California	<i>Medicago polymorpha</i>	C	C
Carpetweed	<i>Mollugo verticillata</i>	C	C
Carrot, wild	<i>Daucus carota</i>	C	C
Chickweed, common	<i>Stellaria media</i>	C	C
Chickweed, mouseear	<i>Cerastium vulgatum</i>	C	C
Cocklebur, common	<i>Xanthium strumarium</i>	PC	C
Crabgrass, large	<i>Digitaria sanguinalis</i>	PC	PC
Dandelion, common (seedling)	<i>Taraxacum officinale</i>	C	C
Deadnettle, purple	<i>Lamium purpureum</i>	C	C
Dock, curly	<i>Rumex crispus</i>	C	C
Eveningprimrose, cutleaf	<i>Oenothera laciniata</i>	C	C
Fiddleneck, coast	<i>Amsinckia intermedia</i>	C	C
Filaree, redstem	<i>Erodium cicutarium</i>	PC	C
Filaree, whitestem	<i>Erodium moschatum</i>	PC	C
Fleabane, hairy	<i>Conyza bonariensis</i>	C	C
Galinsoga	<i>Galinsoga parviflora</i>	C	C
Geranium, Carolina	<i>Geranium carolinianum</i>	C	C
Groundcherry, smooth	<i>Physalis subglabrata</i>	C	C
Groundsel, common	<i>Senecio vulgaris</i>	C	C
Henbit	<i>Lamium amplexicaule</i>	C	C
Horsenettle	<i>Solanum carolinense</i>	PC	PC
Horseweed/marestail	<i>Conyza canadensis</i>	C	C
Jimsonweed	<i>Datura stramonium</i>	C	C
Kochia	<i>Kochia scoparia</i>	PC	C
Lambsquarters, common	<i>Chenopodium album</i>	C	C
Lettuce, prickly	<i>Lactuca serriola</i>	C	C
Mallow, common	<i>Malva neglecta</i>	C	C
Mayweed, chamomile	<i>Anthemis cotula</i>	C	C
Morningglory, entireleaf	<i>Ipomoea hederacea</i>	PC	C

Common Name	Scientific Name	Gharda Mesotrione 4SC Herbicide Applied Alone	Gharda Mesotrione 4SC Herbicide + Atrazine <sup>1</sup>
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	PC	C
Morningglory, pitted	<i>Ipomoea lacunosa</i>	PC	C
Nettle, burning	<i>Urtica urens</i>	C	C
Nightshade, eastern black	<i>Solanum ptycanthum</i>	C	C
Nightshade, hairy	<i>Solanum sarrachoides</i>	C	C
Pansy	<i>Viola tricolor</i>	C	C
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C	C
Pigweed, tumble	<i>Amaranthus albus</i>	C	C

Pineappleweed	<i>Matricaria matricariodes</i>	C	C
Puncturevine, common	<i>Tribulus terrestris</i>	C	C
Purslane, common	<i>Portulaca oleracea</i>	C	C
Pusley, common	<i>Richardia scabra</i>	PC	PC
Ragweed, common	<i>Ambrosia artemisiifolia</i>	C	C
Ragweed, giant	<i>Ambrosia trifida</i>	PC	C
Redmaids	<i>Calandria caulescens</i>	C	C
Rocket, London	<i>Sisymbrium irio</i>	C	C
Shepherd's-purse	<i>Capsella bursa-pastoris</i>	C	C
Smartweed, ladysthumb	<i>Polygonum persicaria</i>	C	C
Smartweed, pale	<i>Polygonum lapathifolium</i>	C	C
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	C	C
Sowthistle, annual	<i>Sonchus oleraceus</i>	C	C
Spanishneedles	<i>Bidens bipinnata</i>	C	C
Sunflower, common	<i>Helianthus annuus</i>	PC	C
Swinecress	<i>Coronopus didymus</i>	C	C
Tasselflower, red	<i>Emilia sonchifolia</i>	C	C
Velvetleaf	<i>Abutilon theophrasti</i>	C	C
Waterhemp, common	<i>Amaranthus rudis</i>	C	C
Vetch, common	<i>Vicia sativa</i>	C	C
Vetch, purple	<i>Vicia benghalensis</i>	PC	PC
Waterhemp, tall	<i>Amaranthus tuberculatus</i>	C	C
Willowherb, panicle	<i>Epilobium brachycarpum</i>	C	C

<sup>1</sup>Gharda Mesotrione 4SC Herbicide tank mixture with atrazine is approved only for use on corn grain sorghum and sugarcane. Refer to the crop sections on this label for specific use directions.

C = Control      PC = Partial Control

## ROTATIONAL CROPS

When Gharda Mesotrione 4SC Herbicide is applied as directed on this label, follow the crop rotation intervals in Table 3. If Gharda Mesotrione 4SC Herbicide is tank mixed with other products, follow the most restrictive product's crop rotation interval.

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.

**Table 3. Time Interval Between Gharda Mesotrione 4SC Herbicide Application and Replanting or Planting of Rotational Crop**

Crop	Replant/Rotational Interval
Asparagus Corn (all types) Cranberry Flax Kentucky bluegrass grown for seed Millet, pearl Oats Rhubarb Ryegrass (perennial and annual) grown for seed Sorghum (grain and sweet) Sugarcane Tall fescue grown for seed	Anytime
Small grain cereals including wheat, barley and rye	4 Months
Alfalfa Blueberry Canola Cotton Currant Lingonberry Okra Peanuts Peas <sup>1,2</sup> Potato Rice Snap beans <sup>1,2</sup> Soybeans Sunflowers Tobacco	10 Months
Cucurbits Dry beans Red clover	18 Months
Sugar beets All other rotational crops	

<sup>1</sup>Plant these rotational crops only if the following criteria below have been met. If all criteria are not met, plant peas and snap beans a minimum of 18 months following Gharda Mesotrione 4SC Herbicide application.

- A minimum of 20" of rainfall plus irrigation has been received between application and planting of the rotational crop.
- Soil pH is 6.0 or greater.
- Application of Gharda Mesotrione 4SC Herbicide at 3.0 fl oz/A (0.094 lb ai/A) or less applied no later than June 30<sup>th</sup> the year preceding rotational crop planting.
- No other HPPD herbicides (for example products containing mesotrione, isoxaflutole, tembotrione, ortopramezone) were applied the year prior to planting peas and snap beans.

<sup>2</sup> **RESTRICTIONS: DO NOT** plant peas or snap beans on sand, sandy loam or loamy sand soils in Minnesota or Wisconsin.

## CROP USE DIRECTIONS

### ASPARAGUS

Gharda Mesotrione 4SC Herbicide can be applied broadcast or banded at a rate of 3.0-7.7 fl oz/A (0.094-0.24 lb ai/A) to asparagus as a spring application prior to spear emergence, as a post-harvest application (after final harvest), or both.

Use the 3.0 fl oz/A (0.094 lb ai/A) rate for post-emergence control or partial control of the emerged weeds listed in **Table 1**. Use the 6.0-7.7 fl oz/A (0.188-0.24 lb ai/A) rate for pre-emergence control or partial control of the weeds listed in **Table 2**. For banded applications, the application must be made to account for band width, i.e. to deliver 3.0-7.7 fl oz per treated acre (0.094 lb-0.24 lb ai/A). For the best pre-emergence weed control with spring applications, Gharda Mesotrione 4SC Herbicide must be applied after fern mowing, disking, or other tillage operation but prior to asparagus spear emergence.

When making post-harvest applications, the rate applied pre-emergence in the spring must be taken into account so as not to exceed the 7.7 fl oz/A/year (0.24 lb ai/A/year) rate limit. Post-harvest applications must be made in a way that minimizes contact with any standing asparagus spears or ferns and maximizes contact with the weeds and/or soil, e.g. by using a directed or semi-directed type application, or crop injury may occur. With post-harvest applications, the use of an adjuvant will increase the risk of crop injury.

If weeds are emerged at the time of the Gharda Mesotrione 4SC Herbicide application, the addition of a crop oil concentrate (COC) type adjuvant at the rate of 1% v/v **or** a nonionic surfactant (NIS) at the rate of 0.25% v/v is advised. In addition to COC or NIS, a spray grade UAN (e.g., 28-0-0) at the rate of 2.5% v/v **or** ammonium sulfate (AMS) at the rate of 8.5 lb/100 gallons of spray solution may be added for improved burndown of emerged weeds. If weeds have not yet emerged, no adjuvant is advised.

### RESTRICTIONS:

- **DO NOT** apply more than 7.7 fl oz/A (0.24 lb ai/A) of Gharda Mesotrione 4SC Herbicide per year.
- **DO NOT** apply more than 7.7 fl oz/A (0.24 lb ai/A) of Gharda Mesotrione 4SC Herbicide per application.
- **DO NOT** make more than 2 Gharda Mesotrione 4SC Herbicide applications per year when using reduced application rates.
- Minimum retreatment interval is 14 days.
- **DO NOT** harvest asparagus within 7 days of application.

### BLUEGRASS, RYEGRASS (ANNUAL AND PERENNIAL) AND TALL FESCUE GROWN FOR SEED

Gharda Mesotrione 4SC Herbicide can be applied to bluegrass, annual ryegrass, perennial ryegrass, or Tall fescue which is grown for seed. Gharda Mesotrione 4SC Herbicide can be applied as a pre-emergence application to bare soil (new seeding) or as a post-emergence application to an emerged grass crop.

**Pre-emergence Application:** Apply Gharda Mesotrione 4SC Herbicide as a broadcast, surface spray at a rate of 6.0 fl oz/A (0.188 lb ai/A) to a newly seeded crop. The Gharda Mesotrione 4SC Herbicide application must be made prior to crop and weed

emergence. Rainfall or irrigation as the newly seeded grass crop emerges from the soil may increase the risk of injury from Gharda Mesotrione 4SC Herbicide. Grass crop injury symptoms include temporary bleaching of newly emerged leaves, or in extreme conditions, stunting. For a list of pre-emergence weeds controlled or partially controlled see **Table 2**. In addition to the weeds listed in **Table 2**, Gharda Mesotrione 4SC Herbicide applied pre-emergence will control Mannagrass (*Glyceria spp.*).

**Post-emergence Application:** Apply Gharda Mesotrione 4SC Herbicide as a broadcast post-emergence spray at a rate of 3.0-6.0 fl oz/A (0.094-0.188 lb ai/A) to emerged bluegrass, perennial ryegrass or tall fescue grown for seed. Use the 3.0 fl oz/A (0.094 lb ai/A) rate for post-emergence control or partial control of the weeds listed in **Table 1**. In addition to the weeds listed in **Table 2**, Gharda Mesotrione 4SC Herbicide applied early post-emergence will control Mannagrass (*Glyceria spp.*), (up to 3 tillers).

Use the 6.0 fl oz/A (0.188 lb ai/A) rate for post-emergence weed control plus extended residual weed control (see **Table 2**). The addition of a crop oil concentrate type adjuvant at 1% v/v or a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v is advised.

Post-emergence applications of Gharda Mesotrione 4SC Herbicide may result in temporary bleaching of the grass crop.

In addition to COC or NIS, a spray grade UAN (e.g., 28-0-0) at the rate of 2.5% v/v or ammonium sulfate (AMS) at the rate of 8.5 lb/100 gallons of spray solution may also be added for improved control of emerged weeds. The addition of UAN or AMS will improve consistency of post-emergence weed control but will also increase the risk of grass crop injury, especially at Gharda Mesotrione 4SC Herbicide rates greater than 3.0 fl oz/A (0.094 lb ai/A). If grass crop injury is a concern, **DO NOT** add UAN or AMS to the spray solution.

Tank mixing other pesticides with Gharda Mesotrione 4SC Herbicide post-emergence may increase the risk of crop injury. Avoid adding pesticides with emulsifiable concentrate (EC) type formulations to Gharda Mesotrione 4SC Herbicide for applications made post-emergence to the crop.

#### **RESTRICTIONS:**

- **DO NOT** make more than 9.0 fl oz/A (0.282 lb ai/A) of Gharda Mesotrione 4SC Herbicide per year.
- **DO NOT** apply more than 6.0 fl oz/A (0.188 lb ai/A) in a single application.
- **DO NOT** make more than 2 applications of Gharda Mesotrione 4SC Herbicide per year.
- Minimum treatment interval is 14 days.
- **DO NOT** harvest the grass crop for seed or straw within 60 days following the application of Gharda Mesotrione 4SC Herbicide.
- **DO NOT** graze or feed forage from treated areas within 14 days following harvest of seed or straw at least 74 days after application of Gharda Mesotrione 4SC Herbicide.
- Applications of Gharda Mesotrione 4SC Herbicide to grasses grown for seed species not listed on this label may result in severe injury.

#### **BUSH AND CANEBERRIES (CROP GROUP 13-07A and 13-07B)**

**Note:** Not all cultivars and types of berries that are included within the Environmental Protection Agencies definition of bush and caneberreries (Crop Subgroups 13-07A and 13-07B) have been tested and shown to have adequate crop safety to Gharda

Mesotrione 4SC Herbicide. Those that have been tested, and are believed to be reasonably fit, are listed below along with use directions for that crop. If Gharda Mesotrione 4SC Herbicide is used on bush or caneberries not listed below, severe crop injury may occur.

Gharda Mesotrione 4SC Herbicide may be applied as a pre-bloom post-directed spray in high bush blueberry, lingonberry, red currant, black currant, black raspberry, red raspberry, and blackberry. For a list of weeds controlled see **Tables 1 and 2**. Gharda Mesotrione 4SC Herbicide may be applied in bush or caneberries at a rate up to 6.0 fl oz/A (0.188 lb ai/A). If a split application weed control program is desired, 3.0 fl oz/A (0.094 lb ai/A) followed by 3.0 fl oz/A (0.094 lb ai/A) may be used. The use of a crop oil concentrate (COC) type adjuvant at the rate of 1% v/v is permitted to be used but avoid using COC adjuvants that are injurious to bush or caneberry leaves.

In low bush blueberries, Gharda Mesotrione 4SC Herbicide may only be applied in the non-bearing year. This application may be a broadcast application. Up to 6 fl oz/A (0.188 lb ai/A) of Gharda Mesotrione 4SC Herbicide may be applied in a single application, or 3 fl oz/A (0.094 lb ai/A) followed by 3 fl oz/A (0.094 lb ai/A) if used in a split application program. The use of a crop oil concentrate (COC) type adjuvant at 1% v/v is advised. Applications of Gharda Mesotrione 4SC Herbicide during dry weather conditions and/or temperatures above 85° can cause injury to Lowbush blueberries. Applications of Gharda Mesotrione 4SC Herbicide can cause yellowing or necrosis of leaves and under severe conditions, leaf drop may occur especially on “Sourtop” variety blueberries.

#### **RESTRICTIONS:**

- **DO NOT** apply more than a total of 6 fl oz/A (0.188 lb ai/A) of Gharda Mesotrione 4SC Herbicide per year.
- **DO NOT** apply more than 6 fl oz/A (0.188 lb ai/A) of Gharda Mesotrione 4SC Herbicide per application.
- **DO NOT** make more than 2 applications of Gharda Mesotrione 4SC Herbicide per year when using reduced rates.
- Minimum retreatment interval is 14 days.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide to bush or caneberries after the onset of bloom stage or illegal residues may occur.

#### **CITRUS FRUIT, POME FRUIT, STONE FRUIT AND TREE NUTS (CROP GROUP 10- 10, 11-10, 12-12 AND 14-12)**

Gharda Mesotrione 4SC Herbicide may be used for post-emergence and residual control of weeds listed in **Tables 1 and 2** in the following crops.

**Citrus fruit (crop group 10-19):** Australian desert lime, Australian finger lime, Australian round lime, Brown River finger lime, calamondin, citron, citrus hybrids, grapefruit, Japanese summer grapefruit, kumquat, lemon, lime, Mediterranean mandarin, sour orange, sweet orange, pummelo, Russell River lime, Satsuma mandarin, sweet lime, Tachibana orange, Tahiti lime, tangelo, tangerine (Mandarin), tangor, trifoliolate orange, unqi fruit, cultivars, varieties and/or hybrids of these.

**Pome fruit (crop group 11-10):** apple, azarole, crabapple, loquat, mayhaw, medlar, pear, Asian pear, quince, Chinese quince, Japanese quince, tejocote, cultivars, varieties and/or hybrids of these.



**Stone fruit (crop group 12-12):** apricot, Japanese apricot, capulin, black cherry, Nanking cherry, sweet cherry, tart cherry, Chinese jujube, nectarine, peach, plum, American plum, beach plum, Canada plum, cherry plum, Chickasaw plum, Damson plum, Japanese plum, Klamath plum, prune plum, plumcot, sloe, cultivars, varieties and/or hybrids of these.

**Tree nuts (crop group 14-12):** African nut-tree, almond, beech nut, Brazil nut, Brazilian pine, bunya, bur oak, butternut, Cajou nut, candlenut, cashew, chestnut, chinquapin, coconut, Coquito nut, Dika nut, ginkgo, Guiana chestnut, hazelnut (filbert), heartnut, hickory nut, Japanese horse-chestnut, macadamia nut, Mongongo nut, monkey-pot, monkey puzzle nut, Okari nut, Pachira nut, peach palm nut, pecan, pequi, pili nut, pine nut, pistachio, Sapucaia nut, tropical almond, black walnut, English walnut, yellowhorn, cultivars, varieties and/or hybrids of these.

#### **PRECAUTIONS:**

- To avoid crop injury, apply the spray to the grove or orchard floor and to the weeds, avoiding contact with crop foliage, stems or fruit. Contact of Gharda Mesotrione 4SC Herbicide with the crop may result in bleaching injury that is typically temporary. Use trunk guards to protect plants until adequate bark has developed.
- Specified rates are based on broadcast treatment. For band applications around trees in fruit or nut plantings, reduce the broadcast rate of Gharda Mesotrione 4SC Herbicide and carrier per acre in proportion to the area actually sprayed. (See **“Banded Applications”** Section.)
- Application of Gharda Mesotrione 4SC Herbicide in nectarine, plum or tree nuts grown in coarse soils may cause bleaching, especially when applied during time of heavy water use and root growth such as during bud break or rapid shoot expansion.

#### **RESTRICTIONS:**

- **DO NOT** exceed a total of 12 fl oz/A (0.376 lb ai/A) of Gharda Mesotrione 4SC Herbicide per year or in a 12-month period.
- **DO NOT** exceed 6 fl oz per acre (0.188 lb ai/A) of Gharda Mesotrione 4SC Herbicide for the first application.
- **DO NOT** exceed 3 applications per year when using reduced application rates.
- Allow at least 5 months between applications of Gharda Mesotrione 4SC Herbicide at 6 fl oz/A (0.188 lb ai/A) and at least 6 weeks between applications of 6 fl oz/A (0.188 lb ai/A) and subsequent applications of 3 fl oz/A (0.094 lb ai/A). (Applications must follow one of the four programs listed in **Table 4.**)
- **DO NOT** harvest pome fruit, stone fruit or tree nuts within 30 days after application.
- **DO NOT** harvest citrus fruit within 1 day after application.
- **DO NOT** apply when nuts or fruits are on the ground at harvest.
- Gharda Mesotrione 4SC Herbicide can only be applied in pome fruit, stone fruit and nut trees that have been established for one full growing season (min. of 12 months) and are in good health and vigor. Gharda Mesotrione 4SC Herbicide can be applied in citrus trees or citrus tree plantings that are less than 12 months old and are exhibiting normal growth and vigor.
- **DO NOT** apply in orchards that are stressed due to poor weather or other abiotic factors.
- **DO NOT** use on soils with greater than 20% gravel.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide through any type of irrigation system.

- **DO NOT** apply Gharda Mesotrione 4SC Herbicide by air.

### **Spray Additives**

For application to emerged weeds, the use of crop oil concentrate (COC) type adjuvant at 1% v/v or non-ionic surfactant (NIS) at 0.25% v/v is recommended. Addition of ammonium sulfate or other nitrogen-based adjuvants will increase efficacy when used in combination with COC or NIS. For more information see Spray Additives section on this label.

### **Banded Applications**

When applying a row or banded treatment of Gharda Mesotrione 4SC Herbicide, the following formula may be used to calculate the amount per acre:

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

### **Tank Mix Instructions**

Gharda Mesotrione 4SC Herbicide may be mixed and applied in combination with most used herbicides registered for use in the approved crops in order to expand the post-emergence (glyphosate glufosinate, paraquat, or oxyfluorfen) or residual (for example bromacil, bromacil + diuron, diuron, indaziflam, norflurazon, oryzalin, oxyfluorfen, pendimethalin, rimsulfuron or simazine) weed control spectrum. These tank mixtures can be used to help control or manage the development of resistant weeds. The application of mixtures or sequences of effective herbicides, with different sites of action, can provide the diversity needed for management of herbicide resistance.

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

If compatibility of the tank-mix combination is not known, test the compatibility of any tank-mix combination on a small scale including a jar test before actual tank mixing.

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

### **Weed Control (Table 1 and 2)**

Gharda Mesotrione 4SC Herbicide provides both post-emergence and pre-emergence control of susceptible weeds. Best control is obtained if post-emergence applications are made before weeds reach 5 inches in height (**Table 1**) or before germination of seed for pre-emergence control (**Table 2**). Rainfall or irrigation soon after application will enhance pre-emergence activity.

### **Use Directions**

Apply as a directed or shielded spray. Avoid contact with trunk surfaces, fruit or crop foliage. **DO NOT** apply when nuts or fruits are on the ground at harvest. Ensure that the

soil is settled, firm and relatively free of debris at time of application. Also ensure that the soil is free of depressions around trees where rain or irrigation water can concentrate. Apply the first application of Gharda Mesotrione 4SC Herbicide in late fall/early winter or spring and subsequent applications utilizing one of the programs noted in the **Table 4**.

**Table 4. Gharda Mesotrione 4SC Herbicide Application Programs, Rates and Intervals**

<b>Program</b>	<b>1st Application</b>	<b>2nd Application</b>	<b>3rd Application</b>	<b>Interval (wk)</b>
1	6	6	-	12
2	6	3	-	6
3	6	3	3	6
4	3	3	3	6

For optimum post-emergence weed control, apply Gharda Mesotrione 4SC Herbicide to actively growing weeds in tank mixture with burndown herbicides (for example glyphosate, glufosinate, paraquat, or oxyfluorfen) before weeds exceed 5 inches in height.

For effective residual weed control, Gharda Mesotrione 4SC Herbicide must be moved into the weed seed germination zone. For pre-emergence weed control, apply Gharda Mesotrione 4SC Herbicide before rainfall or irrigation. For optimum residual control Gharda Mesotrione 4SC Herbicide can be tank mixed with herbicides herbicides (for example bromacil, bromacil + diuron, diuron, indaziflam, norflurazon, oxyfluorfen, pendimethalin, rimsulfuron or simazine) where approved for use.

Subsequent application(s) of Gharda Mesotrione 4SC Herbicide can be made alone or in tank mixture, with the herbicides noted above, if weed emergence occurs.

Refer to individual product labels for precautionary statements, restrictions, rates, approved uses and a list of weeds controlled.

Apply Gharda Mesotrione 4SC Herbicide in a spray volume of 10-40 gal/A.

Refer to individual product labels for precautionary statements, restrictions, rates, approved uses and a list of weeds controlled. It is the pesticide user’s responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

**CORN**

Gharda Mesotrione 4SC Herbicide may be applied by ground for pre-emergence or post-emergence weed control in field corn, seed corn, yellow popcorn, and sweet corn.

Gharda Mesotrione 4SC Herbicide may also be applied aerially for pre-emergence or post-emergence weed control only in the following states: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina,

South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin and Wyoming.

Refer to seed company directions for use on field corn inbred lines. Special adjuvant restrictions must be followed for post-emergence applications of Gharda Mesotrione 4SC Herbicide in yellow popcorn or sweet corn (see the **SPRAY ADDITIVES** section of this label). **DO NOT** apply Gharda Mesotrione 4SC Herbicide to white popcorn or ornamental (Indian) corn.

Post-emergence applications (after crop emergence) of Gharda Mesotrione 4SC Herbicide may cause crop bleaching in some yellow popcorn and sweet corn hybrids. Crop bleaching is typically transitory and has no effect on final yield or quality. However, herbicide sensitivity in yellow popcorn and sweet corn varies widely, and all yellow popcorn and sweet corn hybrids have not been tested. Contact your popcorn or sweet corn company, Fieldman, or University Specialist about hybrid directions before making a post-emergence application of Gharda Mesotrione 4SC Herbicide to yellow popcorn or sweet corn. **DO NOT** include nitrogen-based adjuvants (UAN or AMS) when making post-emergence applications of Gharda Mesotrione 4SC Herbicide to yellow popcorn or sweet corn.

Temporary crop response (transient bleaching) from post-emergence applications to field corn may occur under extreme weather conditions or when the crop is suffering from stress. Field corn quickly outgrows these effects and develops normally.

#### **RESTRICTIONS:**

- **DO NOT** apply more than a total of 7.7 fl oz/A (0.24 lb ai/A) of Gharda Mesotrione 4SC Herbicide per year.
- **DO NOT** exceed 3.0 fl oz/A (0.094 lb ai/A) of Gharda Mesotrione 4SC Herbicide in a single post-emergence application.
- **DO NOT** make more than 2 applications of Gharda Mesotrione 4SC Herbicide per year when making reduced application rates.
- Minimum retreatment interval is 14 days.
- **DO NOT** feed or harvest forage, grain or stover within 45 days after application.
- Corn may be treated up to 30 inches tall or up to the 8-leaf stage of corn growth.
- **DO NOT** apply to white popcorn or ornamental Indian corn.

#### **GHARDA MESOTRIONE 4SC HERBICIDE USED ALONE – POST-EMERGENCE**

Apply Gharda Mesotrione 4SC Herbicide at 3.0 fl oz/A (0.094 lb ai/A) per application. Always add an appropriate adjuvant to the spray tank (see the **“SPRAY ADDITIVES”** section of this label).

For best results, apply Gharda Mesotrione 4SC Herbicide to actively growing weeds. For a list of weeds controlled see **Table 1**. Susceptible weeds which emerge soon after application of Gharda Mesotrione 4SC Herbicide may be controlled after they absorb the herbicide from the soil.

Gharda Mesotrione 4SC Herbicide will not control most grass weeds.

#### **RESTRICTIONS:**

Two post-emergence applications of Gharda Mesotrione 4SC Herbicide may be made with the following restrictions.

- **DO NOT** exceed a total of 7.7 fl oz/A (0.24 lb ai/A) of Gharda Mesotrione 4SC Herbicide per year.
- **DO NOT** exceed a total of 2 applications per year
- **DO NOT** exceed a total of 6.0 fl oz/A (0.188 lb ai/A) for the two post-emergence

applications.

- Only one post-emergence application may be made if Gharda Mesotrione 4SC Herbicide has been applied pre-emergence.
- Minimum retreatment interval is 14 days.
- Apply Gharda Mesotrione 4SC Herbicide at 3.0 fl oz/A (0.094 lb ai/A) per application. Application of Gharda Mesotrione 4SC Herbicide at rates less than 3.0 fl oz/A (0.94 lb ai/A) post-emergence may result in incomplete weed control and loss of residual control.
- If Gharda Mesotrione 4SC Herbicide is applied Postemergent to ground that received a Pre-emergence application of a Mesotrione-containing herbicide, atrazine must be tank mixed with Gharda Mesotrione 4SC Herbicide.
- If atrazine is mixed Gharda Mesotrione 4SC Herbicide, **DO NOT** apply to corn that is more than 12 inches in height.
- Corn may be treated up to 30 inches tall or up to the 8-leaf stage of corn growth.
- **DO NOT** harvest forage, grain, or stover within 45 days after application.

### **GHARDA MESOTRIONE 4SC HERBICIDE USED ALONE – PRE-EMERGENCE**

Apply Gharda Mesotrione 4SC Herbicide alone at 6.0-7.7 fl oz/A (0.188-0.24 lb ai/A) by ground sprayers in a spray volume of 10-30 gal of water (up to 80 gal if applied with liquid fertilizers) per acre for broadleaf weed control. For a list of weeds controlled, refer to **Table 2**. Gharda Mesotrione 4SC Herbicide may be tank mixed with pre-emergence grass herbicides for grass control. Refer to the tank mix section for a list of partners.

### **GHARDA MESOTRIONE 4SC HERBICIDE TANK MIXTURES FOR CORN**

Gharda Mesotrione 4SC Herbicide may be tank mixed with other registered herbicides for improved spectrum of weed control in burndown, pre-emergence, or post-emergence applications. Additionally, these tank mixtures can be used to include a different mode of action herbicide to help control or manage the development of resistant weed biotypes.

#### **Burndown Tank Mixtures in Corn**

Gharda Mesotrione 4SC Herbicide may be applied in tank mixture with other registered herbicides for burndown plus residual weed control.

For improved broadleaf weed control with limited residual control prior to planting corn and before corn emergence, apply Gharda Mesotrione 4SC Herbicide at 3.0 fl oz/A (0.94 lb ai/A) in tank mixes with paraquat, glyphosate, dicamba and/or 2,4-D. For greater residual control, use 6.0-7.7 fl oz/A (0.188-0.24 lb ai/A) of Gharda Mesotrione 4SC Herbicide (see **Table 2**) with the above products. Use the adjuvant system specified for the burndown herbicide.

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

If compatibility of the tank-mix combination is not known, test the compatibility of any tank-mix combination on a small scale including a jar test before actual tank mixing.

#### **Pre-emergence Tank Mixtures in Corn**

Gharda Mesotrione 4SC Herbicide may be applied at a rate of 5.3-7.7 fl oz/A (0.166-0.24 lb ai/A) in tank mixture with other registered herbicides (**Table 4**) for pre-

emergence residual weed control. Refer to **Table 2** for a list of weeds controlled by Gharda Mesotrione 4SC Herbicide and Gharda Mesotrione 4SC Herbicide plus atrazine.

**Table 5. Gharda Mesotrione 4SC Herbicide Tank Mixtures for Pre-emergence Application in Corn<sup>1</sup>**

Acetochlor	Atrazine + Glyphosate + Metolachlor	Metolachlor
Acetochlor + Atrazine	Atrazine + metolachlor	Pendamethalin
Atrazine		
Atrazine + Dimethenamid-P		

<sup>1</sup>Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled.

**Post-emergence Tank Mixtures in Corn**

The tank mixtures with Gharda Mesotrione 4SC Herbicide identified in Table 5 may be applied post-emergence to corn (i.e., after corn has emerged). Unless specified otherwise on this label or a Gharda Chemicals International Inc supplemental label, **DO NOT** apply Gharda Mesotrione 4SC Herbicide at less than 3.0 fl oz/A (0.094 lb ai/A). Application of Gharda Mesotrione 4SC Herbicide at rates less than 3.0 fl oz (0.094 lb ai/A) post-emergence may result in a loss of residual control.

Always add an appropriate adjuvant to the spray tank (see the **SPRAY ADDITIVES** section of this label). Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled. Not all the tank mix pesticides listed are registered for field corn, yellow popcorn, or sweet corn.

**Table 6. Gharda Mesotrione 4SC Herbicide Tank Mixtures for Post-emergence Application in Corn**

Tank Mix Partners <sup>1</sup>	Directions
Atrazine	<ul style="list-style-type: none"> <li>Refer to <b>Table 1</b> on this label for application rates and weeds controlled.</li> </ul>
Atrazine + Glyphosate + Metolachlor	<ul style="list-style-type: none"> <li>For use only in glyphosate resistant corn.</li> <li>Application of this mixture to corn hybrid that is not glyphosate resistant will result in crop death.</li> <li><b>Restrictions: DO NOT</b> add Urea Ammonium Nitrate (UAN) or methylated seed oil (MSO) type adjuvants to this tank mixture or crop injury may occur.</li> </ul>
Atrazine + Metolachlor	<ul style="list-style-type: none"> <li>When using these tank mixtures, it is advised to leave the nitrogen-based adjuvant (UAN or AMS) out of the mixture or apply as a post-directed spray to minimize contact with crop foliage.</li> <li>To further reduce the risk of crop injury, the user may also leave out the crop oil concentrate (COC) or replace it with a nonionic surfactant (NIS).</li> </ul> <p>In all cases, the control of emerged weeds may be reduced somewhat due to less than optimum</p>

	adjuvant effect or weed coverage.
Atrazine + Nicosulfuron + Rimsulfuron	<ul style="list-style-type: none"> <li>• Use this mixture for additional broadleaf weed control. Refer to product label for list of weeds controlled.</li> </ul>
Bentazone	<ul style="list-style-type: none"> <li>• Use this mixture for additional broadleaf weed control. Refer to product label for list of weeds controlled.</li> </ul>
Dicamba + Primisulfuron-methyl	<ul style="list-style-type: none"> <li>• Use this mixture for additional broadleaf weed control. Refer to product label for list of weeds controlled.</li> </ul>
Glyphosate	<ul style="list-style-type: none"> <li>• For use only in glyphosate resistant corn (e.g., Agrisure GT, Roundup Ready).</li> <li>• Application of this mixture to corn hybrid that is not glyphosate resistant will result in crop death.</li> <li>• Add spray-grade Ammonium Sulfate (AMS) at a rate that delivers 8.5 to 17.0 lbs. of AMS/100 gals. of water.</li> <li>• If the glyphosate product label calls for an adjuvant in addition to AMS, add a nonionic surfactant (NIS) at 0.25 to 0.5% v/v (1 to 2 qts./100 gals.).</li> <li>• <b>Restriction: DO NOT</b> add Urea Ammonium Nitrate (UAN), crop oil concentrate (COC) or Methylated Seed Oil (MSO) type adjuvants to this tank-mixture or crop injury may occur.</li> </ul>
Glufosinate	<ul style="list-style-type: none"> <li>• Use this tank mixture only on corn designated as LibertyLink® or warranted as being resistant to glufosinate.</li> <li>• Application of this mixture to corn hybrid that is not glufosinate resistant will result in severe crop injury or death.</li> <li>• <b>Restriction: DO NOT</b> use Crop Oil Concentrate (COC) as an adjuvant for this mixture or severe crop injury may occur.</li> </ul>
Imazapyr + Imazethapyr	<ul style="list-style-type: none"> <li>• For use only on corn designated as Clearfield® corn or warranted by manufacturer as being resistant to Imazapyr + Imazethapyr herbicide.</li> <li>• Application of this mixture to corn hybrid that is not resistant to Imazapyr + Imazethapyr herbicide will result in severe crop injury or death.</li> <li>• <b>Restriction: DO NOT</b> use a Methylated Seed Oil (MSO) or an MSO blend with this mixture or severe crop injury may result.</li> </ul>
Nicosulfuron	<ul style="list-style-type: none"> <li>• Use this mixture for additional grass control. Refer to product label for list of weeds controlled.</li> </ul>
Nicosulfuron + Thifensulfuron- methyl	<ul style="list-style-type: none"> <li>• Use this mixture for additional grass control. Refer to product label for list of weeds controlled.</li> </ul>
Nicosulfuron + Rimsulfuron	<ul style="list-style-type: none"> <li>• Use this mixture for additional grass control. Refer to product label for list of weeds controlled</li> </ul>
Primisulfuron-methyl + Prosulfuron	<ul style="list-style-type: none"> <li>• Use this mixture for additional broadleaf weed control. Refer to product label for list of weeds controlled.</li> </ul>
Prosulfuron	<ul style="list-style-type: none"> <li>• Use this mixture for additional broadleaf weed control. Refer to product label for list of weeds controlled.</li> </ul>

Rimsulfuron + Thifensulfuron- methyl	<ul style="list-style-type: none"> <li>• Use this mixture for additional weed control. Refer to product label for list of weeds controlled.</li> </ul>
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<sup>1</sup>Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled.

If compatibility of the tank-mix combination is not known, test the compatibility of any tank-mix combination on a small scale including a jar test before actual tank-mixing.

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.

### **FIELD CORN, PRODUCTION SEED FIELD CORN AND FIELD CORN GROWN FOR SILAGE - AERIAL APPLICATION (MISSOURI AND NORTH DAKOTA)**

Gharda Mesotrione 4SC Herbicide can be applied by air post-emergence on Field corn, Production seed field corn and Field corn grown for silage in Missouri and North Dakota provided that the following **RESTRICTIONS** are met:

- A buffer zone must be established between the area to be sprayed and the sensitive plant species (e.g., broadleaf crops) as application of Gharda Mesotrione 4SC Herbicide within 50 feet of the sensitive plant species may result in injury to sensitive plant species.

#### **Aerial Spray Equipment**

Apply Gharda Mesotrione 4SC Herbicide in a minimum spray volume of 3 gallons of water per acre. When foliage is dense, use higher water volumes. Avoid application under conditions where uniform coverage cannot be obtained or where spray drift may occur. Use sufficient spray volume to ensure complete dispersion of Gharda Mesotrione 4SC Herbicide in the spray tank when mixing and during applications to target broadleaf weeds.

#### **Gharda Mesotrione 4SC Herbicide Alone**

Apply Gharda Mesotrione 4SC Herbicide post-emergence at a rate of 3.0 fl oz/A (0.094 lb ai/A). Always add a Crop Oil Concentrate (COC) to the spray solution at a rate of 1 gallon per 100 gallons of water (1.0% v/v). In addition to COC, always add dry spray grade Ammonium Sulfate (AMS) at 8.5 pounds per 100 gallons of spray solution or a liquid AMS product that delivers a dry spray-grade AMS rate equivalent to 8.5 pounds per 100 gallons of spray solution. For best results, apply Gharda Mesotrione 4SC Herbicide to actively growing weeds. For a list of weeds controlled, see **Table 1**. Susceptible weeds which emerge soon after an application of Gharda Mesotrione 4SC Herbicide may be controlled after they absorb the herbicide from the soil. Gharda Mesotrione 4SC Herbicide will not control most grass weeds.

**RESTRICTIONS: DO NOT** use Methylated Seed Oil (MSO) or MSO blended adjuvants.

#### **Mesotrione 4SC Herbicide in Tank-mixture with Glyphosate - Post-emergence**

Gharda Mesotrione 4SC Herbicide may be applied post-emergence at a rate of 3.0 fl oz/A (0.094 lb. a.i./A) in a tank-mixture with a solo glyphosate product that is registered for post-emergence use in glyphosate resistant Field corn. Application of the tank-mixture of Gharda Mesotrione 4SC Herbicide with glyphosate to a Corn hybrid that is not glyphosate resistant will result in crop death.

Always add dry spray-grade Ammonium Sulfate (AMS) at 8.5 pounds per 100 gallons of spray solution to the tank-mixture. When using liquid AMS products, use a rate that delivers a



dry spray-grade AMS rate equivalent to 8.5 pounds per 100 gallons of spray solution. **DO NOT** add Urea Ammonium Nitrate (UAN), Crop Oil Concentrate (COC) or Methylated Seed Oil (MSO) type adjuvants to the tank-mixture of Gharda Mesotrione 4SC Herbicide with glyphosate or crop injury may occur.

If the glyphosate product has a built-in adjuvant system (i.e., the product label does not direct addition of adjuvant), add only AMS to the tank-mixture. If the glyphosate product label calls for an adjuvant in addition to AMS, refer to the glyphosate product label for proper adjuvant selection.

Read and follow the Roundup Ready Gene or Glyphosate Resistant Gene requirements on the glyphosate product label.

## CRANBERRY

Gharda Mesotrione 4SC Herbicide may be applied at a rate up to 8.0 fl oz/A (0.25 lb ai/A) to bearing or non-bearing cranberry beds for control or suppression of bog St. John's wort (*Hypericum boreala*), rushes (*Juncus canadensis*, *J. effuses*, *J. bufonlus*, *J. tenuis*), sedges spp. (*Carex* spp.), yellow loosestrife (*Lysimachia terrestris*) and silverleaf (*Potentilla pacifica*) in addition to the weeds listed in Tables 1 and 2. Gharda Mesotrione 4SC Herbicide may be applied in cranberries at a rate up to 8.0 fl oz/A (0.25 lb ai/A). The use of a crop oil concentrate (COC) type adjuvant at 1% v/v or non-ionic surfactant (NIS) at 0.25% v/v is advised. Avoid using COC adjuvants that are injurious to cranberry leaves. In non-bearing cranberries, make the Gharda Mesotrione 4SC Herbicide application(s) after the bud break stage, but not less than 45 days before flooding in fall or winter. In bearing cranberries, make the Gharda Mesotrione 4SC Herbicide application(s) after the bud break

Gharda Mesotrione 4SC Herbicide may be applied through irrigation systems (chemigation) including center pivot or solid set.

## RESTRICTIONS:

- **DO NOT** apply more than 16.0 fl oz/A (0.5 lb ai/A) Gharda Mesotrione 4SC Herbicide per year.
- **DO NOT** apply more than 8.0 fl oz/A (0.25 lb ai/A) Gharda Mesotrione 4SC Herbicide per application.
- **DO NOT** make more than 2 applications of Gharda Mesotrione 4SC Herbicide per year.
- Minimum retreatment interval is 14 days.
- In non-bearing cranberries, make application(s) of Gharda Mesotrione 4SC Herbicide after the bud break stage, but no less than 45 days before flooding in Fall or Winter.
- In bearing Cranberries, make application(s) of Gharda Mesotrione 4SC Herbicide after the bud break stage, but no less than 45 days prior to flooding or harvest.

## CHEMIGATION APPLICATION

Gharda Mesotrione 4SC Herbicide may be applied through irrigation systems (chemigation) including center pivot or solid set.

### Chemigation – Sprinkler Irrigation Application for Cranberry Only

Check the irrigation system to ensure uniform application of water to all areas. Thorough coverage of foliage is required for good control. Good agitation in the pesticide supply tank must be maintained prior to and during the entire application period. Apply by injecting the specified rate of Gharda Mesotrione 4SC Herbicide into the irrigation system using a metering device that will introduce a constant flow and by distributing the product to the

target areas in 0.1-0.2 acre-inch of water. In general, use the least amount of water in this range required for proper distribution and coverage.

Once the application is completed, flush the entire irrigation and injection system with clean water before stopping the system. In addition to the above directions, if application is being made during a normal irrigation set of a stationary sprinkler, the specified rate of Gharda Mesotrione 4SC Herbicide for the area covered must be injected into the system only during the end of the irrigation set for sufficient time to provide adequate coverage and product distribution.

### **Chemigation Use Directions – Sprinkler Irrigation Application**

- Apply Gharda Mesotrione 4SC Herbicide only through sprinkler irrigation systems including center pivot or solid set. **DO NOT** apply Gharda Mesotrione 4SC Herbicide through any other type of irrigation system.
- Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.
- If you have any questions about calibration, you must contact State Extension Service Specialists, equipment manufacturers or other experts.
- **DO NOT** connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system. 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 out of the year.
- A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person shall shut the system down and make necessary adjustments must the need arise.
- The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back-flow.
- 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 pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, including a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and are capable of being fitted with a system interlock.
- Any alternatives to the above required safety devices must conform to the list of EPA approved alternative devices.
- **DO NOT** apply when wind speed favors drift beyond the area intended for treatment or nonuniform distribution of treated water.
- **DO NOT** apply directly to water or areas where surface water is present outside the bog system.

- **DO NOT** contaminate water when disposing of equipment wash water or rinsate.
- **DO NOT** apply within 10 feet of surface water outside the bog system.
- **DO NOT** spray to runoff.

### SPOT SPRAY APPLICATION (MASSACHUSETTS ONLY)

Spot treatment with Gharda Mesotrione 4SC Herbicide may provide improved weed control in some situations.

**Table 7, Amount of this Gharda Mesotrione 4SC Herbicide per gallon of water for spot treatments**

Gharda Mesotrione 4SC Herbicide Per Gallon	Maximum Solution per Acre per Application	Solution Description
0.8 tsps. (0.004 lb ai)	30 to 60 gals.	Approximates 4.0 fl. oz./A (0.125 lb ai/A) rate
1.6 tsps. (0.008 lb ai)	30 gals.	Approximates 8.0 fl. oz./Ac. (0.125 lb ai/A) rate
3 tbsp. (0.047 lb ai)	5.3 gals.	Very concentrated; For woody weeds including Poison ivy

#### RESTRICTIONS:

- **DO NOT** apply directly to water or areas where surface water is present outside the bog system.
- **DO NOT** contaminate water when disposing of equipment wash water or rinsate.
- **DO NOT** apply within 10 feet of surface water outside the bog system.
- **DO NOT** spray to runoff.

#### FLAX

Gharda Mesotrione 4SC Herbicide may be applied pre-emergence in flax, i.e., after planting but before crop emergence, at a rate up to 6.0 fl oz/A. (0.188 lb ai/A). For a list of weeds controlled see **Tables 1 and 2**. If weeds are emerged at the time of application, the use of a crop oil concentrate (COC) type adjuvant at the rate of 1% v/v is advised. In addition, a spray grade UAN (e.g., 28-0-0) at the rate of 2.5% (v/v) or AMS at the rate of 8.5 lb/100 gal of spray solution may be added to improve the burndown of existing weeds.

Applications of Gharda Mesotrione 4SC Herbicide to emerged flax can result in severe crop injury.

#### RESTRICTIONS:

- **DO NOT** apply more than 6 fl oz/A (0.188 lb ai/A) per year.
- **DO NOT** apply more than 6 fl oz/A (0.188 lb ai/A) in a single application.
- **DO NOT** make more than one application of Gharda Mesotrione 4SC Herbicide per year

#### OATS

Gharda Mesotrione 4SC Herbicide can be applied pre-emergence or post-emergence (but not both) for weed control in oats.

For pre-emergence control or partial control of the weeds listed in **Table 2**, apply Gharda Mesotrione 4SC Herbicide broadcast at a rate of 6.0 fl oz/A (0.188 lb ai/A) prior to oat emergence. For best pre-emergence weed control, the Gharda Mesotrione 4SC Herbicide application must be made prior to weed emergence.

For post-emergence (after oat emergence) control or partial control of the weeds listed in **Table 1**, apply Gharda Mesotrione 4SC Herbicide at a rate of 3.0 fl oz/A (0.094 lb ai/A). For best results, Gharda Mesotrione 4SC Herbicide must be applied to emerged weeds that are less than 5" tall. Post-emergence applications of Gharda Mesotrione 4SC Herbicide may result in temporary injury of the oat crop. Injury symptoms may include leaf bleaching, leaf burn and in extreme conditions, stunting.

If emerged weeds are present at the time of the Gharda Mesotrione 4SC Herbicide application, the addition of a crop oil concentrate (COC) type adjuvant at a rate of 1% v/v or a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v is advised. In addition to COC or NIS, a spray grade UAN (e.g., 28-0-0) at the rate of 2.5% v/v or ammonium sulfate (AMS) at the rate of 8.5 lb/100 gallons of spray solution may be added for improved weed control. If emerged weeds are not present at the time of the Gharda Mesotrione 4SC Herbicide application, no additives are advised. If oat injury is a concern, eliminating the use of UAN or AMS will reduce the risk for post-emergence crop injury. Additionally, the use of NIS instead of COC will also reduce the oat injury risk.

However, weed control is also reduced if UAN or AMS is eliminated and when switching from COC to NIS.

Tank mixing other pesticides with Gharda Mesotrione 4SC Herbicide post-emergence may increase the risk of injury. Avoid adding pesticides with emulsifiable concentrate (EC) type formulations to Gharda Mesotrione 4SC Herbicide for applications made post-emergence to the crop.

#### **RESTRICTIONS:**

- **DO NOT** apply Gharda Mesotrione 4SC Herbicide pre-emergence prior to oat emergence at more than 6.0 fl oz/A (0.188 lb ai/A) per year.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide pre-emergence prior to oat emergence at more than 6.0 fl oz/A (0.188 lb ai/A) per application.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide post-emergence at more than 3.0 fl oz/A (0.094 lb ai/A) per year.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide post-emergence at more than 3.0 fl oz/A (0.094 lb ai/A) per application.
- **DO NOT** make more than one application of Gharda Mesotrione 4SC Herbicide per year.
- **DO NOT** graze or feed forage from treated areas within 30 days following an application of Gharda Mesotrione 4SC Herbicide.
- **DO NOT** harvest Oats within 50 days following the application of Gharda Mesotrione 4SC Herbicide
- If the oat crop treated with Gharda Mesotrione 4SC Herbicide is lost or destroyed, oats may be replanted immediately. If Gharda Mesotrione 4SC Herbicide was applied to the lost oat crop, no additional Gharda Mesotrione 4SC Herbicide can be applied to the replanted oat crop.

#### **OKRA**

Gharda Mesotrione 4SC Herbicide can be applied as a row-middle or a hooded post-

direct treatment (but not both) for weed control in okra.

**Pre-emergence row-middle application:** Apply Gharda Mesotrione 4SC Herbicide at a rate of 6.0 fl oz/A (0.188 lb ai/A) as a banded application to the row middles prior to weed emergence. For this banded application, leave one foot of untreated area over the okra row or 6" to each side of the planted row. For banded applications, the application must be made to account for band width, i.e., to deliver 6.0 fl oz (0.188 lb ai) per treated acre. **DO NOT** apply Gharda Mesotrione 4SC Herbicide directly over the planted okra row or severe crop injury may occur. Injury risk is greatest on coarse textured soils (sand, sandy loam or loamy sand).

**Post-emergence hooded application:** Apply Gharda Mesotrione 4SC Herbicide at a rate of 3.0 fl oz/A (0.0.94 lb ai/A) as a post-emergence directed application using a hooded sprayer for control or partial control of the weeds listed in **Table 1**. Okra must be at least 3" tall at the time of this application. It is advised that a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v be added to the spray solution. For post-emergence hooded applications, the spray equipment must be set up to minimize the amount of Gharda Mesotrione 4SC Herbicide that contacts the okra foliage or crop injury will occur. For best post-emergence results, Gharda Mesotrione 4SC Herbicide must be applied to actively growing weeds.

#### **RESTRICTIONS:**

- **DO NOT** apply Gharda Mesotrione 4SC Herbicide as a row-middle application at more than 6.0 fl oz/A (0.188 lb ai/A) per year.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide as a row-middle application at more than 6.0 fl oz/A (0.188 lb ai/A) per application.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide as a post-directed application at more than 3.0 fl oz/A (0.0.94 lb ai/A) per year.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide as a post-directed application at more than 3.0 fl oz/A (0.0.94 lb ai/A) per application.
- **DO NOT** make more than one application of Gharda Mesotrione 4SC Herbicide per year.
- **DO NOT** harvest okra within 28 days following the application of Gharda Mesotrione 4SC.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide as a broadcast pre-emergence or broadcast post-emergence application to okra or severe injury will occur.
- If the okra crop treated with Gharda Mesotrione 4SC Herbicide is lost or destroyed, okra can be replanted only in the soil band that was not treated with Gharda Mesotrione 4SC Herbicide.

#### **PEARL MILLET**

Gharda Mesotrione 4SC Herbicide may be applied pre-emergence in pearl millet, i.e. after planting but before crop emergence, at a rate up to 6.0 fl oz/A (0.188 lb ai/A). For a list of weeds controlled see **Table 2**. If weeds are emerged at the time of application, the use of a crop oil concentrate (COC) type adjuvant at the rate of 1% v/v is advised. In addition, a spray grade UAN (e.g., 28-0-0) at the rate of 2.5% (v/v) or AMS at the rate of 8.5 lb/100 gal of spray solution may be added to improve the burndown of existing weeds.

Applications of Gharda Mesotrione 4SC Herbicide to emerged pearl millet can result in severe crop injury.

#### **RESTRICTIONS:**

- **DO NOT** apply more than 6 fl oz/A (0.188 lb ai/A) per year.

- **DO NOT** apply more than 6 fl oz/A (0.188 lb ai/A) per application.
- **DO NOT** make more than one application of Gharda Mesotrione 4SC Herbicide per year.
- Applications of Gharda Mesotrione 4SC Herbicide to emerged pearl millet can result in severe crop injury.

## RHUBARB

Gharda Mesotrione 4SC Herbicide can be applied prior to crop emergence for weed control in established rhubarb.

Apply Gharda Mesotrione 4SC Herbicide at a rate of 6.0 fl oz/A (0.188 lb ai/A) to dormant (prior to any spring green-up) rhubarb for control or partial control of the weeds listed in **Table 2**. If weeds are emerged at the time of application, it is advised that a crop oil concentrate (COC) type adjuvant at 1% v/v **or** a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v be added to the spray solution. Applications of Gharda Mesotrione 4SC Herbicide to rhubarb that is not dormant may result in a temporary bleaching symptomology. Rainfall or irrigation after the Gharda Mesotrione 4SC Herbicide application may increase the risk of injury to emerging rhubarb.

### RESTRICTIONS:

- **DO NOT** apply Gharda Mesotrione 4SC Herbicide at more than 6.0 fl oz/A (0.188 lb ai/A) per year.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide at more than 6.0 fl oz/A (0.188 lb ai/A) per application.
- **DO NOT** make more than one application of Gharda Mesotrione 4SC Herbicide per year.
- **DO NOT** harvest rhubarb within 21 days following the application of Gharda Mesotrione 4SC Herbicide.

## SORGHUM (GRAIN AND SWEET)

**Pre-emergence Application:** Gharda Mesotrione 4SC Herbicide can be applied pre-emergence or preplant non-incorporated up to 21 days before planting sorghum for control or partial control of the weeds listed in **Table 2**.

Apply Gharda Mesotrione 4SC Herbicide pre-emergence at a rate of 6.0-6.4 fl oz/A (0.188-0.2 lb ai/A) as a broadcast non-incorporated application prior to sorghum emergence. Applying Gharda Mesotrione 4SC Herbicide less than 7 days before sorghum planting will increase the risk of crop injury, especially if irrigation or rainfall is received following the application. Injury symptoms include temporary bleaching of newly emerging sorghum leaves. Applying Gharda Mesotrione 4SC Herbicide more than 7 days (but not more than 21) prior to planting will reduce the risk of crop injury.

If Gharda Mesotrione 4SC Herbicide is applied prior to planting, minimize disturbance of the herbicide treated soil barrier during the planting process to lessen the potential for weed emergence.

If emerged weeds are present at the time of the pre-emergence application, it is advised that a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v **or** a crop oil concentrate (COC) type adjuvant at a rate of 1% v/v be added to the spray solution. In addition to COC or NIS, a spray grade UAN at a rate of 2.5% v/v **or** ammonium sulfate (AMS) at a rate of 8.5 lb/100 gallons of spray solution can be added to the spray solution.

### **Pre-emergence Application RESTRICTIONS:**

- **DO NOT** apply more than 6.4 fl oz/A (0.2 lb ai/A) of Gharda Mesotrione 4SC Herbicide per year.
- **DO NOT** apply more than 6.4 fl oz/A (0.2 lb ai/A) of Gharda Mesotrione 4SC Herbicide per application.
- **DO NOT** make more than one application of Gharda Mesotrione 4SC Herbicide per year.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide to emerged sorghum or severe crop injury may occur.
- **DO NOT** use Gharda Mesotrione 4SC Herbicide in the production of forage sorghum, sudangrass, sorghum-sudangrass hybrids, or dual-purpose
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide to sorghum that is grown on coarse textured soils (e.g., sandy loam, loamy sand, sand).
- In the State of Texas, **DO NOT** apply Gharda Mesotrione 4SC Herbicide to sorghum grown south of Interstate 20 (I-20) or east of Highway 277.

**Post-Directed:** Gharda Mesotrione 4SC Herbicide can be applied post-directed to grain sorghum for control or partial control of the weeds listed in **Table 1**. For best results, apply Gharda Mesotrione 4SC Herbicide to actively growing weeds. Apply Gharda Mesotrione 4SC Herbicide at a rate of 3.0 fl oz/A (0.094 lb ai/A) as a post-directed application when the grain sorghum is a minimum of 8 inches tall. Make the application by directing the spray between the crop rows and towards the base of the grain sorghum plant. Direct application of Gharda Mesotrione 4SC Herbicide onto grain sorghum foliage can result in crop injury including temporary bleaching. If crop injury does occur, newly emerging leaves following application are typically unaffected.

It is advised that a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v **or** a crop oil concentrate (COC) type adjuvant at a rate of 1% v/v be added to the spray solution. In addition to COC or NIS, a spray grade Urea Ammonium Nitrate (UAN) at a rate of 2.5% v/v **or** ammonium sulfate (AMS) at a rate of 8.5 lb/100 gallons of spray solution can be added to the spray solution.

Gharda Mesotrione 4SC Herbicide may be tank mixed with other herbicides registered for grain sorghum for improved spectrum of weed control. Additionally, these tank mixtures can be used to include an herbicide with a different mode of action to help control or manage the development of resistant weed biotypes.

### **Post-Directed RESTRICTIONS:**

- **DO NOT** apply more than one post-directed application of Gharda Mesotrione 4SC Herbicide.
- **DO NOT** apply more than 3.0 fl oz/A (0.094 lb ai/A) of Gharda Mesotrione 4SC Herbicide post-directed and not more than 6.4 fl oz/A (0.2 lb ai/A) per crop year.
- **DO NOT** apply more than one post-directed application of Gharda Mesotrione 4SC Herbicide.
- **DO NOT** harvest grain sorghum for forage for 30 days following application.
- **DO NOT** harvest for grain or stover for 60 days following application.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide broadcast over-the-top to emerged sorghum or severe crop injury may occur.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide after the sorghum seed head has begun to emerge.
- **DO NOT** use Gharda Mesotrione 4SC Herbicide in the production of forage sorghum,

sudangrass, or sorghum-sudangrass hybrids.

## SOYBEAN

Gharda Mesotrione 4SC Herbicide can be applied pre-emergence to soybeans that are identified as Mesotrione resistant. Applications to soybeans that are not Mesotrione resistant will result in significant crop injury. For a list of Mesotrione resistant soybean varieties, contact your State Extension Representative.

**Pre-emergence Application:** For pre-emergence control of the weeds listed in **Table 2**, apply Gharda Mesotrione 4SC Herbicide prior to soybean emergence at a rate of 6.0 fl oz/A (0.188 lb ai/A). Apply the higher rate for longer residual control. Gharda Mesotrione 4SC Herbicide may be tank mixed with other registered soybean herbicides including metolachlor and metolachlor + fomesafen. Refer to the tank mix partner label and follow all precautions and restrictions.

If weeds are emerged at the time of application, add either a non-ionic surfactant (NIS) at 1 qt/100 gallons (0.25% v/v) or a crop oil concentrate (COC) at 1 gallon/100 gallons (1% v/v). In addition to NIS or COC, it is also advised to add either ammonium sulfate (AMS) at 8.5-17 lb/100 gallon (or equivalent).

### RESTRICTIONS:

- **DO NOT** apply more than 6.0 fl oz/A (0.188 lb ai/A) per year.
- **DO NOT** apply more than 6.0 fl oz/A (0.188 lb ai/A) per application
- **DO NOT** make more than one application of Gharda Mesotrione 4SC Herbicide per year.
- **DO NOT** apply Gharda Mesotrione 4SC Herbicide to emerged soybeans.
- **DO NOT** graze or feed soybean forage or hay to livestock.

## SUGARCANE

Gharda Mesotrione 4SC Herbicide can be applied by ground for pre-emergence, post-emergence over- the-top or post-emergence directed weed control in sugarcane.

Gharda Mesotrione 4SC Herbicide may also be applied aerially for pre-emergence or post-emergence weed control only in the following states: Florida, Louisiana, and Texas.

**Pre-emergence Applications:** Apply Gharda Mesotrione 4SC Herbicide for pre-emergence weed control at 6.0-7.7 fl oz/A (0.188-0.24 lb ai/A) after the planting of plant-cane or after harvest of ratoon-cane. For a list of weeds-controlled pre-emergence, refer to **Table 2**. If some weeds are already emerged at the time of application, add a crop oil concentrate (COC) type adjuvant at a rate of 1% v/v **or** a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v to the spray solution. In addition to COC or NIS, a spray grade UAN at a rate of 2.5% v/v **or** ammonium sulfate (AMS) at a rate of 8.5 lb/100 gallons of spray solution can be added to the spray solution.

For improved pre-emergence weed control, atrazine or ametryn can be tank mixed with Gharda Mesotrione 4SC Herbicide. Refer to the tank mix partner label for specific rates and use directions.

**Post-emergence Applications:** Apply Gharda Mesotrione 4SC Herbicide post-emergence at 3.0 fl oz/A (0.094 lb ai/A) for control of the weeds listed in **Table 1**. Post-



emergence applications may be made as a post-over-the-top or as a post-directed spray to the base of the sugarcane. If a pre-emergence application was made earlier in the season, only one post-emergence application can be made. If no pre-emergence application was made earlier in the season, both a post-over-the-top and a post-directed application can be made. For best results, Gharda Mesotrione 4SC Herbicide must be applied to actively growing weeds.

For post-emergence applications, it is advised that a crop oil concentrate (COC) type adjuvant at a rate of 1% v/v **or** a nonionic surfactant (NIS) type adjuvant be added to the spray solution. In addition to COC or NIS, the use of a spray grade UAN (e.g. 28-0-0) at 2.5% v/v **or** ammonium sulfate (AMS) at a rate of 8.5 lb/100 gallons of spray solution can be added for improved control of weeds.

For additional post-emergence weed control, Gharda Mesotrione 4SC Herbicide can be tank mixed with atrazine (e.g., Atrazine 4L or 90DF), asulam and/or trifloxysulfuron-sodium. Refer to the tank mix product labels for specific rates and use directions.

#### **RESTRICTIONS:**

- **DO NOT** apply more than 7.7 fl oz/A (0.24 lb ai/A) of Gharda Mesotrione 4SC Herbicide as a pre-emergence application.
- **DO NOT** apply more than 3.0 fl oz/A (0.094 lb ai/A) of Gharda Mesotrione 4SC Herbicide in a post-emergence application.
- **DO NOT** make more than 2 applications of Gharda Mesotrione 4SC Herbicide per year. If a pre-emergence application of Gharda Mesotrione 4SC Herbicide is made, only one post-emergence application is allowed.
- **DO NOT** make the second application within 14 days (RTI) of the first application.
- **DO NOT** apply more than 10.7 fl oz/A (0.334 lb ai/A) of Gharda Mesotrione 4SC Herbicide per year.
- **DO NOT** harvest sugarcane within 114 days following a post-over-the top application of Gharda Mesotrione 4SC Herbicide (**114 day PHI**).
- **DO NOT** harvest sugarcane within 100 days following a post-directed application of Gharda Mesotrione 4SC Herbicide (**100 day PHI**).

#### **TURFGRASS**

Gharda Mesotrione 4SC Herbicide is applied pre-emergence and post-emergence to provide selective contact and residual control of turfgrass weeds. When applied pre-emergence, weeds absorb Gharda Mesotrione 4SC Herbicide during emergence from the soil. Pre-emergence activity may be reduced under dry conditions. Activate Gharda Mesotrione 4SC Herbicide with 0.15 inch of irrigation if rain has not occurred within 10 days of application. When used post-emergence, Gharda Mesotrione 4SC Herbicide is absorbed by susceptible weeds through foliar contact and soil absorption. Foliage of treated weeds cease to grow after application of Gharda Mesotrione 4SC Herbicide, then turn white from loss of chlorophyll and die within three weeks. Make a repeat application after 2 to 3 weeks to improve post-emergence weed control. Add a nonionic surfactant (**NIS**) when making post-emergence applications.

Gharda Mesotrione 4SC Herbicide may cause temporary whitening of turfgrass foliage. Whitening typically occurs 5 to 7 days after application and lasts for several weeks. Repeat application to the same site causes less whitening of plant tissue.

Gharda Mesotrione 4SC Herbicide controls weeds prior to and during seeding of certain turfgrasses during Turf renovation (see "**NEW SEEDINGS**" section). If applied pre-emergence to established turf, tank-mix Gharda Mesotrione 4SC Herbicide with other pre-

emergence herbicides including prodiamine or pendimethalin for longer residual and broad-spectrum control.

#### **PRECAUTIONS:**

- Residential Lawn Applications: Unless renovating and/or reseeding home lawns, avoid broadcast application of Gharda Mesotrione 4SC Herbicide for pre-emergence and post-emergence weed control as undesirable whitening of some turfgrasses may occur.
- Bentgrass, Bermudagrass, Kikuyugrass, *Poa annua*, Seashore paspalum and Zoysiagrass are sensitive to applications of Gharda Mesotrione 4SC Herbicide. Avoid spraying these types of turf unless control and/or injury can be tolerated. Maintain a five-foot buffer between treated areas and Bentgrass or *Poa annua* greens.
- To reduce movement into sensitive species including Bentgrass, keep people and pets off treated areas until spray has dried and irrigate lightly to move product from turf foliage before resuming normal irrigation.
- Clean sprayer thoroughly after an application of Gharda Mesotrione 4SC Herbicide if the same equipment is used to apply products to Bentgrass/*Poa annua* turf areas.
- Avoid over-spray or drift of spray applications onto ornamentals or flower beds and gardens. Roses and Daylilies are sensitive to Gharda Mesotrione 4SC Herbicide.
- Avoid applications over-the-top of exposed roots of trees and ornamentals.

#### **RESTRICTIONS:**

- **DO NOT** apply more than 8.0 fl oz/A (0.25 lb ai/A) of Gharda Mesotrione 4SC Herbicide per application.
- **DO NOT** apply more than 16 fl oz/A (0.5 lb. ai/A) of Gharda Mesotrione 4SC Herbicide per year.
- **DO NOT** make more than 4 applications per year when using reduced application rates.
- Minimum retreatment interval is 14 days.
- **DO NOT** use on golf course putting greens.
- **DO NOT** plant any crop other than turfgrass species for 18 months after the last application of Gharda Mesotrione 4SC Herbicide or injury may occur.
- **DO NOT** apply by air.
- **DO NOT** apply through any type of irrigation system.
- **DO NOT** use grass clippings from treated turf as mulch around trees or in vegetable/flower gardens.
- **DO NOT** apply an organophosphate or carbamate insecticide within 7 days of application of Gharda Mesotrione 4SC Herbicide as injury to turf may occur.

#### **TANK-MIXTURE**

Gharda Mesotrione 4SC Herbicide has been tested in many tank-mixtures with products containing atrazine, bentazon, carfentrazone, dicamba, fluroxpyr, prodiamine, simazine and triclopyr for safety and efficacy on turfgrasses. Apply Gharda Mesotrione 4SC Herbicide at reduced rates of 4.0 fl oz/A (0.125 lb ai/A) of Gharda Mesotrione 4SC Herbicide if tank-mixed with atrazine, bentazone or simazine. Other tank-mixtures may be safe but has not been tested. Test on a small scale for compatibility, safety and efficacy before treating large areas if wanting to tank-mix Gharda Mesotrione 4SC Herbicide with other herbicides.

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 SITES

Gharda Mesotrione 4SC Herbicide may be used in turfgrasses species listed on this label in commercial and residential sites to control weeds. Use sites include non-crop areas for example golf course, sod farms, athletic fields, parks, residential and commercial properties, cemeteries, airports, and lawns.

**DO NOT** use on golf course putting greens and maintain a five-foot buffer between treated areas and putting greens.

## TURFGRASS SPECIES

Gharda Mesotrione 4SC Herbicide has been tested on the following species of turfgrass and found to be safe under trial conditions:

**Table 7. Rate Tolerant Turfgrass Species**

Turfgrass Species	Scientific Name	Rate (fl oz/A)
Buffalograss	<i>Buchloe dactyloides</i>	5 to 8
Centipedegrass	<i>Eremochloa ophiuroides</i>	5 to 8
Fine fescue* (Creeping red, Chewings and Hard)	<i>Festuca</i> spp.	5
Kentucky bluegrass	<i>Poa pratensis</i>	5 to 8
Perennial ryegrass*	<i>Lolium perenne</i>	5
St. Augustinegrass (grown for	<i>Stenotaphrum</i>	4
Tall Fescue	<i>Festuca arundinacea</i>	5 to 8

\*See additional instructions below.

4 fluid ounces of product = 0.125 lb ai/A)

5 fluid ounces of product = 0.156 lb ai/A)

8 fluid ounces of product = 0.25 lb ai/A)

**Table 8. Turfgrass Weed Control List**

Common Name	Scientific Name	Pre-emergence'	Post-emergence'
Barnyardgrass	<i>Echinochloa crus-galli</i>	Y	Y
Bentgrass, Creeping	<i>Agrostis stolonifera</i>	Y	Y
Bluegrass, Annual	<i>Poa annua</i>	Suppression	N
Buckhorn plantain	<i>Plantago lanceolate</i>	Y	Y
Buttercup	<i>Ranunculus sardous</i>	- <sup>3</sup>	Y
Carpetweed	<i>Mollugo verticillata</i>	Y	Y
Chickweed, Common	<i>StelHada media</i>	Y	Y
Chickweed, Mouseear	<i>Cerastium vulgatum</i>	Y	Y
Clover, Large hop	<i>TrifoHum aurem</i>	Y	Y
Clover, White	<i>Tritiolium repens</i>	Y	Y
Crabgrass, Large	<i>Digitaria sanguinalis</i>	Y	Y <sup>4</sup>
Crabgrass, Smooth	<i>Digitaria ischaemum</i>	Y	Y <sup>4</sup>
Crabgrass, Southern	<i>Digitaria ciliaris</i>	Y	Y <sup>4</sup>
Curly dock	<i>Rumex crispus</i>	-	Y
Dandelion, Catsear	<i>Hypochoeris radicata</i>	-	Y
Dandelion, Common	<i>Tarazacum officinale</i>	-	Y
Florida betony	<i>Stachys floridana</i>	-	Y
Florida pusley	<i>Richardia scabra</i>	-	Y

Foxtail, Yellow	<i>Setaria glauca</i>	Y	Y
Galinsoga	<i>Galinsoga ciliate</i>	Y	Y
Goosegrass	<i>Eleusine indica</i>	-	Y <sup>4</sup>
Ground ivy	<i>Glechoma hederacea</i>	-	Y
Healall	<i>Prunella vulgaris</i>	-	Y
Henbit	<i>Lamium amplexicaule</i>	-	Y
Lambsquarters, Common	<i>Chenopodium album</i>	Y	Y
Lawn burweed	<i>Soliva sessi/is</i>	-	Y
Lovegrass, Tufted	<i>Eragrostis pectinacea</i>	-	Y
Marestail	<i>Conyza canadensis</i>	-	Y
Nimblewill	<i>Muhlenbergia schreberi</i>	-	Y
Nutsedge, Yellow	<i>Cyperus esculentus</i>	-	Y
Oxalis	<i>Oxalis stricta</i>	-	Y
Pigweed, Redroot	<i>Amaranthus retroflexus</i>	Y	Y
Pigweed, Smooth	<i>Amaranthus hybridus</i>	Y	Y
Purslane, Common	<i>Portulaca oleracea</i>	Y	Y
Shepherd's purse	<i>CapseHa bursa-pastoris</i>	Y	Y
Smartweed, Pale	<i>Polygonum lapathifolium</i>	Y	Y
Smartweed, Pennsylvania	<i>Polygonum pensylvanicum</i>	Y	Y
Speedwell, Persian	<i>Veronica persica</i>	Y	
Speedwell, Purslane	<i>Veronica peregrina</i>	Y	
Sowthistle	<i>Sonchus oleraceus</i>	-	Y
Swinecress	<i>Coronopus didymus</i>	-	Y
Thistle, Canada	<i>Cirsium arvense</i>	-	Y
Verbena	<i>Verbena hastata</i>	-	Y
Wild carrot	<i>Daucus carota</i>	Y	Y
Wild Violet	<i>Viola pranticola</i>	-	Y
Windmillgrass	<i>Chloris verticillata</i>	-	Y

<sup>1</sup> For broad spectrum pre-emergence activity, apply with a grass pre-emergence herbicide including prodiamine except when used for weed control in new seedings.  
<sup>2</sup>Weed control with post-emergence applications require a second application after 2 to 3 weeks. Apply to young, actively growing weeds with nonionic type of surfactant.  
<sup>3</sup> Not Tested.  
<sup>4</sup>For best post-emergence control, apply at less than 4 tiller Crabgrass and Goosegrass.

## APPLICATION INSTRUCTIONS

### PRE-EMERGENCE APPLICATION

Apply Gharda Mesotrione 4SC Herbicide at 4.0 to 8.0 fl oz/A (0.125 to 0.25 lb ai/A) in at least 30 gallons of water prior to weed seed germination.

Combine Gharda Mesotrione 4SC Herbicide with a pre-emergence herbicide for example prodiamine for extended control of key annual monocot weeds including Crabgrass and Foxtail. In established turf, Gharda Mesotrione 4SC Herbicide is more effective as a post-emergence application unless combined with another soil active herbicide.

## RESTRICTIONS:

- **DO NOT** exceed 5.0 fl oz/A (0.156 lb ai/A) per application to Perennial ryegrass or Fine fescues or mixed stands that contain greater than 50% Perennial ryegrass and/or Fine fescue.
- **DO NOT** exceed 4.0 fl oz/A (0.125 lb ai/A) to St. Augustinegrass sod. Make application close to anticipated weed seed germination.

## NEW SEEDINGS / NEW LAWN ESTABLISHMENT

Apply Gharda Mesotrione 4SC Herbicide at 5 to 8 fl oz/A (0.156 to 0.025 lb ai/A) in at least 30 gallons of water prior to seeding or post seeding of non-sensitive turfgrass species listed on this label, except Fine fescue. Gharda Mesotrione 4SC Herbicide may reduce density of Fine fescue seedings. Gharda Mesotrione 4SC Herbicide can be used on grass seed blends that contain less than 20% by weight of Hard or Fine fescue. Gharda Mesotrione 4SC Herbicide will control many monocot and dicot weeds that compete with and slow the establishment of the turfgrass stands. For best results, apply at grass seeding or close to seeding. Avoid spraying on newly germinated turfgrass plants. Before making a post-emergence application, wait until the newly germinated turf has been mowed two times or four weeks after emergence (whichever is longer).

## POST-EMERGENCE APPLICATION

Apply Gharda Mesotrione 4SC Herbicide at 4 to 8 fl oz/A (0.125 to 0.25 lb ai/A) in at least 30 gallons of water. Apply with a nonionic type of surfactant. A repeat application at two to three weeks may be required for adequate weed control. Weed control is most effective on young, actively growing weeds. Efficacy will be reduced under moisture stress or from applications to mature weeds.

## CONTROL OF BENTGRASS AND NIMBLEWILL

Apply Gharda Mesotrione 4SC Herbicide at 5 fl oz/A (0.156 lb ai/A) in at least 30 gallons of water at two to three-week intervals for up to three applications. Apply with a nonionic type of surfactant.

Bentgrass control may be more effective in the late Summer/early Fall just before onset of renewed Bentgrass growth than Spring/early Summer applications.

On St. Augustinegrass (sod uses only) and Centipedegrass, if Gharda Mesotrione 4SC Herbicide is tank-mixed with atrazine or simazine, **DO NOT** exceed 4 fl oz/A (0.125 lb ai/A) of Gharda Mesotrione 4SC Herbicide and 0.5-pound atrazine or simazine per acre. Apply the tank-mixture to established turf only. 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.

## DORMANT BERMUDAGRASS APPLICATIONS ONLY

Apply Gharda Mesotrione 4SC Herbicide at 5 fl oz/A (0.156 lb ai/A) to control Winter weeds listed in the "**WEEDS CONTROLLED**" table on dormant Bermudagrass. Repeat application in two to three weeks. Applications made to semi-dormant turf will cause whitening of the Bermudagrass.

## SPOT APPLICATION OF GHARDA MESOTRIONE 4SC HERBICIDE

Table 9. Spot Application Rate for Turfgrass

Spray Mix	Rate of Gharda Mesotrione 4SC Herbicide	Nonionic Surfactant (NIS)
2 gals.	1 tsp.	3 tps.

Apply the spray mix at 1 gallon per 1,000 square feet.

### RESTRICTIONS:

- **DO NOT** apply more than 16 fl oz/A of Gharda Mesotrione 4SC Herbicide (0.5 lb ai/A) per year.

## **STORAGE AND DISPOSAL**

**DO NOT** contaminate water, food, or feed by storage or disposal.

### **Pesticide Storage**

Keep container tightly closed when not in use. **DO NOT** store near seed, fertilizers, or foodstuffs. Can be stored at temperatures as low as -20°F. Keep away from heat and flame.

### **Pesticide Disposal**

Open dumping is prohibited. Waste resulting from the use of Gharda Mesotrione 4SC Herbicide may be disposed of on site or at an approved waste disposal facility.

### **Container Handling [Less Than or Equal to 5 Gallons]**

**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 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 mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

### **Container Handling [Greater Than 5 Gallons]**

**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 incineration, or by other procedures approved by state and local authorities.

### **Container Handling [Greater Than 5 Gallons]**

**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 person refilling. To clean container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

**FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident  
Call CHEMTREC 1-800-424-9300**

## **Conditions of Sale and Warranty**

### **Inherent Risks of Use**

It is impossible to eliminate all risks associated with use of Gharda Mesotrione 4SC Herbicide. Lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, including unfavorable temperatures, soil conditions, etc.), abnormal conditions (including excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Gharda Chemicals International Inc. or the seller. To the extent permitted by applicable law, all such risks shall be assumed by buyer.

### **Notice of Warranty and Disclaimer**

Seller warrants that at the time of delivery the product in this container conforms to its chemical description contained hereon and is reasonably fit for its intended purpose under normal conditions of use. This is the only warranty made on Gharda Mesotrione 4SC Herbicide. To the extent permitted by applicable law, Seller expressly disclaims any implied warranties of merchantability or fitness for any particular purpose and, except as set forth above, any other express or implied warranties. Any damages arising from breach of warranty or negligence shall be limited to direct damages not exceeding the purchase price paid for Gharda Mesotrione 4SC Herbicide by Buyer and shall not include incidental or consequential damages including, but not limited to, loss of profits or values. It is impossible to eliminate all risks inherently associated with the use of Gharda Mesotrione 4SC Herbicide. Ineffectiveness or other un-intended 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 the Seller. To the extent permitted by applicable law Seller be liable for the consequential, special or indirect damages resulting from the use or handling of Gharda Mesotrione 4SC Herbicide. The Buyer shall assume all such risks. Buyer acknowledges the use of its own independent skill and expertise in the selection and use of the product and does not rely on any oral or written statements or representations.

Manufactured for:  
GHARDA CHEMICALS INTERNATIONAL INC  
760 Newtown-Yardley Road  
Suite 110  
Newtown, PA 18940

EPA Accepted:

Code: **(Optional)**



MESOTRIONE	GROUP	<b>27</b>	HERBICIDE
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# GHARDA Mesotrione 4SC Herbicide

For Control of Annual Broadleaf Weeds in Asparagus, Bluegrass and Ryegrass (annual and perennial) and Tall Fescue grown-for-seed, Bush Crops (incl. Caneberries), Citrus Fruit, Corn (Incl. Field Corn, Sweet Corn, Seed Corn, and Yellow Popcorn), Cranberry, Flax, Oats, Okra, Pearl Millet, Pome Fruit, Rhubarb, Sorghum (grain and sweet), Soybean, Stone Fruit, Sugarcane, Tree Nuts, and Turfgrass.

**Active Ingredient:**

Mesotrione: (CAS No. 104206-82-8).....	40%
Other.....	60%
<b>Total:</b>	<b>100%</b>

Gharda Mesotrione 4SC Herbicide is formulated as a suspension concentrate (SC) and contains 4 lb (480 grams/liter) of active ingredient Mesotrione per gallon.

## KEEP OUT OF REACH OF CHILDREN. CAUTION

See additional precautionary statements and directions for use inside booklet and on the reverse side of this container

EPA Reg. No.:93182 – tba  
EPA Est.: tba

### PRECAUTIONARY STATEMENTS

#### Hazards to Humans and Domestic Animals

**CAUTION.** Harmful if absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

FIRST AID	
<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. 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 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>
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>Call a poison control center or doctor immediately for treatment advice.</li> <li>Have person sip a glass of water if able to swallow.</li> <li><b>DO NOT</b> induce vomiting unless told to by the poison control center or doctor.</li> <li><b>DO NOT</b> give anything by mouth to an unconscious person.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<b>HOT LINE NUMBER</b> For 24-Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance, Call <b>1-866-359-5660</b>	

**Personal Protective Equipment (PPE)**

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves

**User Safety Requirements**

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.

**Manufactured for:**

Gharda Chemicals International Inc  
760 Newtown-Yardley Road  
Suite 110  
Newtown, PA 18940  
1 215 968-9474

**Net Contents**

TBA \_\_\_\_\_ gallons  
TBA \_\_\_\_\_ Liters

## Back Container Label

### Engineering Controls

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

#### User Safety Recommendations

##### Users should:

- 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 or rinsate.

### Surface Water Advisory

This product may contaminate water through drift of spray in wind. Gharda Mesotrione 4SC Herbicide has a high potential for runoff for several weeks after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains Gharda Mesotrione 4SC Herbicide. A level well maintained vegetative buffer strip between areas to which Gharda Mesotrione 4SC Herbicide is applied and surface water features including ponds, streams, and springs will reduce the potential for contamination of water from runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce Gharda Mesotrione 4SC Herbicide's contribution to surface water contamination.

### Physical and Chemical Hazards

**DO NOT** use or store near heat or open flame. **DO NOT** mix or allow coming in contact with oxidizing agents or reducing agents.

### DIRECTIONS FOR USE

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

**DO NOT** apply Gharda Mesotrione 4SC Herbicide 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, including plants, soil, or water, is:**

- **Coveralls**
- **Shoes plus socks**
- **Chemical-resistant gloves**

## NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard, 40 CFR Part 170. The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, and greenhouses.

- **DO NOT** enter treated areas until sprays have dried.

## PRODUCT INFORMATION [OPTIONAL HEADING AND TEXT]

Gharda Mesotrione 4SC Herbicide is a systemic pre-emergence and post-emergence herbicide for the selective contact and residual control of broadleaf weeds in field corn, seed corn, yellow popcorn, sweet corn, and other listed crops. When used pre-emergence, weeds take up the product through the soil during emergence. Dry conditions following application may reduce the pre-emergence activity of Gharda Mesotrione 4SC Herbicide. If an activating rain (0.25 inches) is not received within 7-10 days after a pre-emergence application, where appropriate, rotary hoeing is suggested to activate the herbicide. When used post-emergence, susceptible weeds take up the herbicide through the treated foliage and cease growth soon after application. Complete death of the weeds may take up to 2 weeks. The product is absorbed through the soil and/or by the foliage of emerged weeds.

Gharda Mesotrione 4SC Herbicide is not effective for the control of most grass weeds. Pre-emergence grass herbicides or post-emergence grass herbicides can be tank mixed with Gharda Mesotrione 4SC Herbicide to provide broad spectrum weed control in corn (see appropriate section of label for this information). Gharda Mesotrione 4SC Herbicide can be applied post-emergence following a pre-emergence grass herbicide application. Gharda Mesotrione 4SC Herbicide can also be used in combination with a burndown herbicide, prior to planting, to provide added burndown and residual weed control in field corn, seed corn, yellow popcorn, and sweet corn