



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

January 26, 2023

Bill Washburn
Registration Manager
Helena Agri-Enterprises, LLC
d/b/a Helena Chemical Company
225 Schilling Blvd., Suite 300
Collierville, TN 38017

Subject: Registration Review Label Amendments Incorporating Mitigation Measures from the Interim Decisions for Atrazine and S-Metolachlor, the Technical Registrants' Commitments for the Endangered Species Act (ESA) Biological Evaluation for Atrazine, and the National Marine Fisheries Services' (NMFS) Biological Opinion on the Effects of S-Metolachlor on Pacific Salmonids
Product Name: HM-1823 Herbicide
EPA Registration Number: 5905-640
Application Dates: 4/6/2021, 8/4/2021, and 7/5/2022
Decision Numbers: 572918, 589241, 589389, and 589390

Dear Bill Washburn:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the Atrazine and S-Metolachlor Interim Decisions. The Agency has concluded that your submission is acceptable.

This letter also addresses the label mitigation resulting from the NMFS' Biological Opinion on the effects of S-Metolachlor on Pacific salmonids. The Agency has concluded that your submission is also acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

This letter also addresses the label mitigation resulting from the atrazine technical registrants' commitments for the ESA Biological Evaluation. The Agency has concluded that your submission is also acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

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.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 12 months from the date of this letter. After 12 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

If you have any questions about this letter, please contact Ben Tweed at tweed.benjamin@epa.gov.

Sincerely,



Linda Arrington, Branch Chief
Risk Management and Implementation Branch 4
Pesticide Re-Evaluation Division
Office of Pesticide Programs

Enclosure

RESTRICTED USE PESTICIDE
DUE TO GROUND AND SURFACE WATER CONCERNS.
 FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION, AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION. THIS PRODUCT IS A RESTRICTED-USE HERBICIDE DUE TO GROUND AND SURFACE WATER CONCERNS. USERS MUST READ AND FOLLOW ALL PRECAUTIONARY STATEMENTS AND INSTRUCTIONS FOR USE IN ORDER TO MINIMIZE POTENTIAL FOR ATRAZINE TO REACH GROUND AND SURFACE WATER.

For Ground Application Only

Sale, use, and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.

S-METOLACHLOR	GROUP	15	HERBICIDE
ATRAZINE	GROUP	5	HERBICIDE
TOLPYRALATE	GROUP	27	HERBICIDE

HM-1823 HERBICIDE
(Alternate Brand Name: Empyros Triad)

A Herbicide for Control of Annual Grass and Broadleaf Weeds in Field Corn, Seed Corn, Sweet Corn, and Yellow Popcorn

Active Ingredients*:	% w/w
S-metolachlor, (S)-2-Chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl)acetamide	19.40%
Atrazine, 6-chloro-N ² -ethyl-N ⁴ -isopropyl-1,3,5-triazine-2,4-diamine	19.40%
Tolpyralate, (RS)-1-(1-Ethyl-4-(4-mesyl-3-(2-methoxyethoxy)-o-toluoyl)pyrazol-5-yloxy)ethyl methyl carbonate.....	0.48%
Other Ingredients:.....	60.72%
TOTAL:.....	100.00%

*Active ingredients per gallon: S-metolachlor 1.75 pounds, atrazine 1.75 pounds and tolpyralate 0.043 pounds.
 Contains safener for corn.

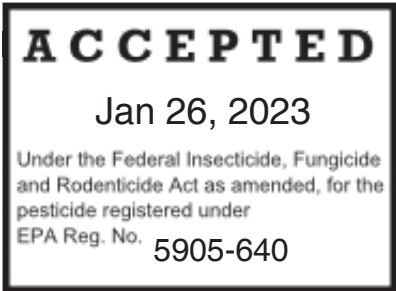
KEEP OUT OF REACH OF CHILDREN
CAUTION
 See additional precautionary statements and directions for use inside booklet.

EPA REG. NO. 5905-640

AD 012921

EPA EST. No. _____

NET CONTENTS: _____



Manufactured for
 Helena Agri-Enterprises, LLC
 225 Schilling Boulevard, Suite 300
 Collierville, TN 38017

FIRST AID	
If in eyes	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a Poison Control Center or doctor for treatment advice.
If on skin or clothing	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a Poison Control Center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
HOT LINE NUMBER	
You may also contact (800) 424-9300, for 24-hour medical emergency assistance (human or animal) and chemical emergency assistance (spill, leak, fire, or accident).	

PRECAUTIONARY STATEMENTS
Hazards to Humans and Domestic Animals

CAUTION

Harmful if absorbed through skin. Causes moderate eye irritation. 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. Remove and wash contaminated clothing before reuse. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Personal Protective Equipment (PPE)

Mixers, Loaders, Applicators, Flaggers and other handlers must wear:

- Protective eyewear
- Long-sleeved shirt and long pants
- Chemical-resistant glove made of barrier laminate, nitrile rubber ≥14 mils, neoprene rubber ≥14 mils, or Viton® ≥14 mils
- Wear a minimum of a NIOSH-approved particulate filtering facepiece respirator with any R or P filter; OR a NIOSH-approved elastomeric particulate respirator with any R or P filter; OR a NIOSH-approved powered air purifying respirator with HE filters.
- Shoes plus socks
- Chemical-resistant apron, when mixing/loading, cleaning up spills, or cleaning equipment, or otherwise exposed to the concentrate

See Engineering Controls for additional 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. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product’s concentrate. Do not reuse them.

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.

Engineering Control Statements

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 170.607(d-e)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Environmental Hazards

This pesticide is toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean water mark. Do not apply when weather conditions favor drift or runoff from treated areas. Runoff and drift from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wash water.

Ground Water Advisory

Atrazine can travel (seep or leach) through soil and can enter ground water which may be used as drinking water. Atrazine has been found in ground water. Users are advised not to apply atrazine to sand and loamy sand soils where the water table (ground water) is close to the surface and where these soils are very permeable, i.e., well drained. Your local agricultural agencies can provide further information on the type of soil in your area and the location of ground water.

S-metolachlor is known to leach through soil into groundwater under certain conditions as a result of label use. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

Tolpyralate has properties and characteristics associated with chemicals detected in groundwater. It may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory

This product may impact surface water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several weeks or months after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of S-metolachlor from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

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

Mixing/Loading/Application Instructions

Care must be taken when using this product to prevent back-siphoning into wells, spills, or improper disposal of excess pesticide, spray mixtures, or rinsates. Check valves or antisiphoning devices must be used on mixing equipment.

This product must not be mixed or loaded or used within 50 ft. of all wells, including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 ft. of any well are prohibited, unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, and rain water that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain, at a minimum, 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above specified minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site.

This product must not be mixed or loaded within 50 ft. of intermittent streams and rivers, natural or impounded lakes and reservoirs. This product must not be applied within 66 ft. of points where field surface water runoff enters perennial or intermittent streams and rivers or within 200 ft. of natural or impounded lakes and reservoirs. If this product is applied to highly erodible land, the 66 ft. buffer or setback from runoff entry points must be planted to crop, or seeded with grass or other suitable crop.

Additional State imposed requirements regarding well-head setbacks and operational area containment must be observed.

Tile-Outletted Terraced Fields Containing Standpipes

One of the following restrictions must be used in applying atrazine to tile-outletted terraced fields containing standpipes:

- Do not apply within 66 ft. of standpipes in tile-outletted terraced fields.
- Apply this product to the entire tile-outletted terraced field and immediately incorporate it to a depth of 2-3 inches in the entire field.
- Apply this product to the entire tile-outletted terraced field under a no-till practice only when a high crop residue management practice is practiced. High crop residue management is described as a crop management practice where little or no crop residue is removed from the field during and after crop harvest.

Physical and Chemical Hazards

Do not mix or allow to come in contact with oxidizing agents. Hazardous chemical reaction may occur.

DIRECTIONS FOR USE

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

ANY USE OF THIS PRODUCT IN AN AREA WHERE USE IS PROHIBITED IS A VIOLATION OF FEDERAL LAW. Before using this product, you must consult the Atrazine Watershed Information Center (AWIC) to determine whether the use of this product is prohibited in your watershed. AWIC can be accessed through www.atrazine-watershed.info or 1-866-365-3014. If use of this product is prohibited in your watershed, you may return this product to your point of purchase or contact Helena Agri-Enterprises, LLC for a refund.

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

Endangered Species Protection Requirements:

It is a Federal offense to use any pesticide in a manner that results in an unauthorized “take” (e.g., kill or otherwise harm) of an endangered species and certain threatened species, under the Endangered Species Act section 9. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the area in which you are applying the product. You must obtain a Bulletin no earlier than six months before using this product. To obtain Bulletins, consult <http://www.epa.gov/espp/>, call 1-844-447-3813, or email ESPP@epa.gov. You must use the Bulletin valid for the month in which you will apply the product.

Reporting Ecological Incidents:

To report ecological incidents, including mortality, injury, or harm to plants and animals, call 901-761-0050.

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

For early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil and water, wear:

- Protective eyewear
- Shoes plus socks
- Coveralls
- Chemical-resistant gloves made of barrier laminate, nitrile rubber ≥14 mils, neoprene rubber ≥14 mils, or Viton® ≥14 mils

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

Note: Sale, use, and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.

PRODUCT INFORMATION

HM-1823 Herbicide may be used preemergence and early postemergence in the culture of field corn and seed corn. HM-1823 Herbicide may also be used in the culture of sweet corn, and yellow popcorn, but the application must be made prior to crop emergence (preemergence), or severe crop injury may occur.

HM-1823 Herbicide is recommended for preemergence use for control of most annual grasses and broadleaf weeds in the crops described above. HM-1823 Herbicide may also be applied early postemergence for the control of broadleaf weeds in field corn (preemergence only in sweet corn, and yellow popcorn).

HM-1823 Herbicide is a combination of the herbicides: S-metolachlor, tolpyralate, and atrazine. HM-1821-A Herbicide also contains the safener benoxacor (0.09 lb/gal). HM-1823 Herbicide controls weeds by interfering with normal germination and seedling development. It is recommended for management of the weed species listed in Tables 1 and 2.

Use Precautions

1. To prevent off-site movement due to runoff or wind erosion:
 - a. Avoid treating powdery dry or light sand soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.
 - b. Do not apply to impervious substrates, such as paved or highly compacted surfaces.
 - c. Do not use tail water from the first flood or furrow irrigation of treated fields to treat nontarget crops, unless at least ½ inch of rainfall has occurred between application and the first irrigation.
2. Thoroughly clean sprayer or other application device before using. Dispose of cleaning solution in a responsible manner. Do not use a sprayer or applicator contaminated with other materials, or crop damage or sprayer clogging of the application device may occur.

Use Restrictions

1. Not for use in the states of Hawaii or Alaska, or in the U.S. territories (Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, and the North Mariana Islands).
2. Do not apply this product through any type of irrigation system.
3. Do not use aerial application to apply HM-1823 Herbicide.
4. Do not use HM-1823 Herbicide on any crop other than field corn (for grain, seed, or silage), sweet corn (preemergence applications only) and yellow popcorn (preemergence applications only).
5. Allow at least 14 days between applications of HM-1823 Herbicide.
6. Do not use HM-1823 Herbicide in the culture of white popcorn or ornamental (Indian) corn or injury may occur.
7. Do not apply using mechanically pressurized handguns to sweet corn.

8. Do not apply under conditions which favor runoff or wind erosion of soil containing this product to non-target areas.
9. Do not contaminate irrigation water used for non-labeled crops or water used for domestic purposes.
10. Do not apply to dry bulk fertilizers.
11. Observe all precautions and limitations on the label of each product used in tank mixtures.

12. Atrazine Herbicide Rate Limitations

Certain states may have established rate limitations within specific geographical areas for the use of atrazine.

These more restrictive/protective requirements must be followed. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations.

- Maximum atrazine application rates for field corn, field seed corn, field silage corn, sweet corn, and yellow popcorn must be as follows:
- If no atrazine was applied prior to corn emergence, apply a maximum of 2.0 lbs. a.i./A broadcast. If a post-emergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 lbs. a.i./A per calendar year. When tank mixing or sequentially applying atrazine or products containing atrazine to corn, the total pounds of atrazine applied (lbs. a.i./A) must not exceed 2.5 lbs. active ingredient per year;
- Apply a maximum of 2.0 lbs. a.i./A as a single preemergence application on soils that are not highly erodible or on highly erodible soils if at least 30% of the soil is covered with plant residues; or
- Apply a maximum of 1.6 lbs. a.i./A as a single preemergence application on highly erodible soils if <30% of the surface is covered with plant residues, or 2.0 lbs. a.i./A if only applied postemergence.

Applied according to directions and under normal growing conditions, HM-1823 Herbicide will not harm the treated crop. During germination and early stages of growth, extended periods of unusually cold and wet or hot and dry weather, insect or plant disease attack, carry-over pesticide residues, the use of certain soil applied systemic insecticides, improperly placed fertilizers or soil insecticides may weaken crop seedlings. HM-1823 Herbicide used under these conditions could result in crop injury.

Resistance Management

HM-1823 Herbicide is a combination of atrazine, S-metolachlor and tolpyralate (Group 5, 15 and 27 Herbicides).

Naturally occurring biotypes of certain broadleaf weed species with resistance to triazines, ALS, PPO, Glycine (glyphosate) and HPPD herbicides are known to exist. If biotypes of weeds resistant to triazines, ALS, PPO and glycine inhibitors are present in the field, this herbicide should control them if they are listed in Tables 1 and 2.

WEED RESISTANCE MANAGEMENT

For resistance management, HM-1823 Herbicide is a combination of s-metolachlor, atrazine and tolpyralate (Group 15, 5 and 27 herbicides). Any weed population may contain or develop plants naturally resistant to HM-1823 Herbicide and other Group 15, 5 and 27 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Appropriate resistance management strategies should be followed.

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

- Rotate the use of HM-1823 Herbicide or other Group 15, 5 and 27 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g., higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Fields should be scouted prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields and planting clean seed.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your local extension specialist or certified crop advisors for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact Helena Agri-Enterprises, LLC representatives at 901-761-0050 or at www.helenaagri.com.

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.

If resistance is suspected, treat weed escapes with an herbicide having a different mechanism of action and/or use non-chemical means to remove escapes, as practical, with the goal of preventing further seed production.

Plant into weed-free fields and keep fields as weed-free as possible.

To the extent possible do not allow weed escapes to produce seeds, roots or tubers. Manage weed seeds at harvest and post-harvest to prevent a buildup of the weed seedbank.

Prevent field-to-field and within-field movement of weed seed or vegetative propagules. Thoroughly clean plant residues from equipment before leaving fields.

Prevent an influx of weeds into the field by managing field borders.

Apply this herbicide at the correct timing and rate needed to control the most difficult weed in the field.

Use a broad-spectrum soil-applied herbicide with a mechanism of action that differs from this product as a foundation in a weed-control program. Do not use more than two applications of this or any other herbicide with the same mechanism of action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.

Integrated Pest (Weed) Management

HM-1823 Herbicide may be integrated into an overall pest management strategy. Practices known to reduce weed development (tillage, crop competition) and herbicide use (weed scouting, proper application timing, banding, and rotations) should be followed wherever possible. Consult local agricultural authorities or weed control specialists for additional Integrated Pest (Weed) Management strategies established for your area.

APPLICATION PROCEDURES

Ground Application

Spray nozzles should be uniformly spaced, the same size and type, and should provide accurate and uniform application. Use spray nozzles that provide coarse or coarser droplet size (ASABE S572) to avoid drift yet provide good coverage. Ensure that all in-line strainer and nozzle screens in the sprayer are 50-mesh or coarser. 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 as long as adequate coverage is maintained. 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.

Preemergence Application

Apply in a spray volume of 10-80 gals./A.

Postemergence Application

Good weed coverage is essential for optimum weed control. Boom height for broadcast over-the-top applications should be based on the height of the crop – at least 15 inches above the crop canopy, but only high enough to give uniform coverage and no more than 3 feet above the crop canopy. Apply in a spray volume of 10-30 gals./A. When weed foliage is dense, use a minimum spray volume of 20 gals./A. Flat fan nozzles of 80° or 110° are recommended for equipment for postemergence applications. Nozzles may be angled forward 45° for optimum postemergence coverage. Do not use floodjet nozzles or controlled droplet application for postemergence applications of HM-1823 Herbicide.

MANDATORY SPRAY DRIFT MANAGEMENT

Ground Boom Applications:

- User must only apply with the release height recommended by the manufacturer, but no more than 3 feet above the ground or crop canopy.
- Applicators are required to select nozzles and pressure that deliver coarse or coarser droplets (ASABE S641).
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- User must maintain a 15 foot (4.6 m) in-field downwind buffer (in the direction in which the wind is blowing) from the following areas:
 - edge of streams and rivers, as well as high-tide line for all estuarine/marine environments
 - threatened and endangered species critical habitat and/or species locations listed in Bulletins Live Two (<https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins>).
- Do not apply during temperature inversions.

Boomless Ground Applications:

- Applicators are required to select nozzles and pressure that deliver coarse or coarser droplets (ASABE S641).
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- User must maintain a 15 foot (4.6 meter) in-field downwind buffer (in the direction in which the wind is blowing) from the edge of streams and rivers, as well as high-tide line for all estuarine/marine environments.
- 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.

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.

Boomless Ground Applications:

- Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

Handheld Technology Applications:

- Take precautions to minimize spray drift.

ADDITIVES

When an adjuvant is to be used with this product, the use of an adjuvant that meets the standards of the Chemical Producers and Distributors Association (CPDA) adjuvant certification program is recommended.

Applications After Corn Has Emerged

When applying HM-1823 Herbicide postemergence to corn, add either a non-ionic surfactant (NIS) or crop oil concentrate (COC). When using a NIS, add at 0.25% v/v (1 qt./100 gals.). When using a COC, add at a rate of 1% v/v (1 gal./100 gals.) or the equivalent of 1 gal./100 gals. The use of COC will provide more consistent weed control than an NIS but may also result in temporary crop injury.

In addition to NIS or COC, a nitrogen-based adjuvant may also be added to increase consistency of weed control. The use of nitrogen-based adjuvants (AMS or UAN) will increase the risk of crop injury and can result in temporary crop injury.

Do not use methylated seed oil (MSO) with HM-1823 Herbicide when applied alone to emerged field corn, or when HM-1823 Herbicide is applied as a postemergence tank mixture with other products.

Applications Prior to Corn Emergence

Any of the adjuvants may be used at a preemergence or preplant timing, i.e., where the corn crop has not yet emerged to increase burndown activity on existing weeds.

Use of Spray Adjuvants With Tank Mixtures

When HM-1823 Herbicide is used as a preemergence herbicide and before weeds have emerged, spray adjuvants have little or no influence on performance. However, in burndown situations where the weeds have emerged and the corn has not, an adjuvant may be used with HM-1823 Herbicide applied

alone or when applied in tank mixture with a burndown herbicide as allowed on the individual product labels. Use only those adjuvants approved for agricultural crop use.

For postemergence (after corn emergence) tank mixtures with HM-1823 Herbicide, use the additives described in the **Applications After Corn Has Emerged** section above for recommendations. If the HM-1823 Herbicide tank mixture partner label has more restrictive additive requirements than what is recommended on this label, follow the more restrictive directions.

MIXING PROCEDURES

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 should be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing. Do not tank mix HM-1823 Herbicide with any other insecticide, fungicide, fertilizer solution, or adjuvant not recommended on the label without testing compatibility as poor mixing may result. It is recommended that the compatibility of any tank-mix combination be tested on a small scale such as a jar test before actual tank mixing.

Carrier for Preemergence Applications: Either clean water or liquid fertilizers, excluding suspension fertilizers, may be used as carriers for preemergence applications. If fluid fertilizers are used, a compatibility test must be done. Even if HM-1823 Herbicide is physically compatible with a fluid fertilizer, constant agitation is necessary to maintain a uniform mixture during application.

Carrier for Postemergence Applications: Use only clean water as the carrier when applying HM-1823 Herbicide after field corn emergence. Do not apply HM-1823 Herbicide to emerged sweet corn, and yellow popcorn.

Use the Following Mixing Instructions for Adding HM-1823 Herbicide to the Spray Tank

1. Only use sprayers in good operating condition with adequate agitation. Ensure the sprayer is cleaned according to instructions on label of the product used prior to use of HM-1823 Herbicide. If water is used as the carrier, use clean water.
2. 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.
3. When the sprayer or premix tank is half full of water, begin to add the mixture components (if they pass the compatibility test).
4. If ammonium sulfate (AMS) is used, continue agitation until completely dispersed.
5. If a wettable powder or dry flowable formulation is used, add it slowly to the tank. Mixing and compatibility may be improved when a wettable powder or dry flowable is diluted with water before adding to the tank. Agitate during the procedure.
6. If a flowable formulation is used, add slowly to the tank.
7. Add HM-1823 Herbicide.
8. Add any other tank-mix products next, with emulsifiable concentrates added last.
9. Add an adjuvant last, if needed.
10. Complete filling the sprayer tank and continue agitation. Apply as soon as possible after spray mixture is prepared. Do not leave mixture in spray tank overnight without agitation or unattended.

If HM-1823 Herbicide is added to the spray tank via induction, compatibility may be compromised. If an induction tank (or similar equipment) is used, add each product separately and allow each to disperse

into the spray tank before adding the next product. For best tank-mix compatibility, rinse the induction tank with water before adding each component.

It is recommended that HM-1823 Herbicide not be added to the spray tank via in-line injection.

Compatibility Test

A compatibility test is recommended before tank mixing to ensure compatibility of HM-1823 Herbicide with other pesticides. The following test assumes a spray volume of 25 gals/A. For other spray volumes, make appropriate changes in the ingredients.

Nitrogen solutions or complete liquid fertilizers, excluding suspension fertilizers, may replace all or part of the water in the spray. Because liquid fertilizers vary even within the same analysis, **always check compatibility with pesticide(s) before use**. Incompatibility of tank mixtures is more common with mixtures of fertilizer and pesticides.

Compatibility Test Procedure

1. Add 1.0 pt. of carrier (fertilizer or water) to each of two 1 qt. jars with tight lids. Note: Use the same source of water that will be used for the tank mix and conduct the test at the temperature the tank mix will be applied.
2. To one of the jars, add ¼ tsp. or 1.2 milliliters of a compatibility agent approved for this use (¼ tsp. is equivalent to 2.0 pts./100 gals. spray). Shake or stir gently to mix.
3. To both jars, add the appropriate amount of pesticide(s) in their relative proportions based on label rates. If more than one pesticide is used, add them separately with dry pesticides first, flowables next, and emulsifiable concentrates last. After each addition, shake or stir gently to thoroughly mix.
4. After adding all ingredients, put lids on and tighten and invert each jar 10 times to mix. Let the mixtures stand 15-30 minutes and then look for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of incompatibility. Determine if the compatibility agent is needed in the spray mixture by comparing the two jars. If either mixture separates but can be remixed readily, the mixture can be sprayed as long as good agitation is used. If the mixtures are incompatible, test the following methods of improving compatibility: (a) slurry the dry pesticide(s) in water before addition, or (b) add ½ the compatibility agent to the fertilizer or water and the other ½ to the emulsifiable concentrate or flowable pesticide before addition to the mixture. If incompatibility is still observed, do not use the mixture.
5. After compatibility testing is complete, dispose of any pesticide wastes in accordance with the Storage and Disposal section in this label.

Cleaning Equipment After Application

Special attention must be given to cleaning equipment before spraying a crop other than field 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 gallon of household ammonia per 25 gals 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. Remove boom end caps and flush dead space areas, with water, then replace caps.
6. Dispose of rinsate from steps 1-5 in an appropriate manner.
7. Repeat steps 2-6.
8. Remove nozzles, screens, and strainers and clean separately in the ammonia solution after completing the above procedures.
9. Rinse the complete spraying system with clean water.

WEEDS CONTROLLED

HM-1823 Herbicide applied as directed in this label will control or partially control the weeds listed in Tables 1 and 2. Optimal weed control will be obtained if HM-1823 Herbicide is applied according to all label use directions.

If a significant rainfall does not occur within 7 days after application, weed control may be decreased. If irrigation is available, apply ½ to 1 inch of water. If irrigation is not available, a uniform shallow cultivation is recommended as soon as weeds emerge.

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

Dry weather following preemergence application of HM-1823 Herbicide may reduce weed control effectiveness. Cultivate if weeds develop in conventional tillage corn.

Table 1: Weeds Controlled or Partially Controlled by Preemergence Applications of HM-1823 Herbicide

Common Name	Scientific Name	C = Control PC = Partial Control
Amaranth, Palmer	<i>Amaranthus palmeri</i>	C
Amaranth, Powell	<i>Amaranthus powellii</i>	C
Barnyardgrass	<i>Echinochloa crus-galli</i>	C
Bedstraw, catchweed	<i>Galium aparine</i>	PC
Beggarweed, Florida	<i>Desmodium tortuosum</i>	C
Buckwheat, wild	<i>Polygonum convolvulus</i>	C
Buffalobur	<i>Solanum rostratum</i>	C
Carpetweed	<i>Mollugo verticillata</i>	C
Chickweed, common	<i>Stellaria media</i>	C
Cocklebur, common	<i>Xanthium strumarium</i>	PC
Crabgrass	<i>Digitaria spp.</i>	C
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	C
Cupgrass, prairie	<i>Eriochloa contracta</i>	C
Cupgrass, Southwestern	<i>Eriochloa gracilis</i>	C
Cupgrass, woolly	<i>Eriochloa villosa</i>	C
Deadnettle, purple	<i>Lamium purpureum</i>	C
Devil's-claw	<i>Proboscidea louisianica</i>	C

Common Name	Scientific Name	C = Control PC = Partial Control
Foxtail, giant	<i>Setaria faberi</i>	C
Foxtail, green	<i>Setaria viridis</i>	C
Foxtail, robust (purple, white)	<i>Setaria spp.</i>	C
Foxtail, yellow	<i>Setaria pumil</i>	C
Galinsoga	<i>Galinsoga parviflor</i>	C
Goosegrass	<i>Eleusine indica</i>	C
Henbit	<i>Lamium amplexicaule</i>	C
Horseweed (marestail)	<i>Conyza canadensis</i>	C
Jimsonweed	<i>Datura stramonium</i>	C
Johnsongrass, seedling	<i>Sorghum halepense</i>	PC
Kochia	<i>Kochia scoparia</i>	C
Lambsquarters, common	<i>Chenopodium album</i>	C
Mallow, Venice	<i>Hibiscus trionum</i>	C
Millet, foxtail	<i>Setaria italica</i>	C
Millet, wild proso	<i>Panicum miliaceum</i>	PC
Morningglory, ivyleaf/entireleaf	<i>Ipomoea hederacea</i>	PC
Mustard, wild	<i>Brassica kaber</i>	C
Nightshade, black	<i>Solanum nigrum</i>	C
Nightshade, eastern black	<i>Solanum ptycanthum</i>	C
Nightshade, hairy	<i>Solanum sarrachoides</i>	C
Nutsedge, yellow	<i>Cyperus esculentus</i>	C
Panicum, browntop	<i>Panicum fasciculatum</i>	C
Panicum, fall	<i>Panicum dichotoiflorum</i>	C
Panicum, Texas	<i>Panicum texanum</i>	PC
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C
Puncturevine	<i>Tribulus terrestris</i>	PC
Purslane, common	<i>Portulaca oleracea</i>	C
Pusley, Florida	<i>Richardia scabra</i>	C
Radish, wild	<i>Raphanus raphanistrum</i>	C
Ragweed, common	<i>Ambrosia artemisiifolia</i>	C
Ragweed, giant	<i>Ambrosia trifida</i>	PC
Rice, red	<i>Oryza sativa</i>	C
Sandbur, field	<i>Cenchrus incertus</i>	PC
Sesbania, hemp	<i>Sesbania exaltata</i>	C
Shattercane	<i>Sorghum bicolor</i>	PC
Shepherd's-purse	<i>Capsella bursa-pastoris</i>	C
Sicklepod	<i>Senna obtusifolia</i>	PC
Sida, prickly	<i>Sida spinosa</i>	C
Signalgrass, broadleaf	<i>Brachiaria platyphylla</i>	PC
Signalgrass, narrowleaf	<i>Brachiaria piligera</i>	C
Smartweed, ladysthumb	<i>Polygonum persicaria</i>	C
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	C
Sprangletop, red	<i>Leptochloa filiformis</i>	C

Common Name	Scientific Name	C = Control PC = Partial Control
Starbur, bristly	<i>Acanthospermum hispidum</i>	C
Sunflower, common	<i>Helianthus annuus</i>	PC
Velvetleaf	<i>Abutilon theophrasti</i>	C
Waterhemp, common	<i>Amaranthus rudis</i>	C
Waterhemp, tall	<i>Amaranthus tuberculatus</i>	C
Witchgrass	<i>Panicum capillare</i>	C

Table 2: Weeds Controlled or Partially Controlled by Early Postemergence Applications of HM-1823 Herbicide.

HM-1823 Herbicide applied early postemergence will provide control or partial control of small emerged weeds (less than 3 inches) but will not provide consistent or effective control of weeds identified as resistant to postemergence HPPD inhibitors.

Common Name	Scientific Name	C = Control PC = Partial Control
Amaranth, Palmer	<i>Amaranthus palmeri</i>	C
Amaranth, Powell	<i>Amaranthus powellii</i>	C
Barnyardgrass	<i>Echinochloa crus-galli</i>	C
Beggarweed, Florida	<i>Desmodium tortuosum</i>	C
Buckwheat, wild	<i>Polygonum convolvulus</i>	C
Carpetweed	<i>Mollugo Verticillata</i>	C
Chickweed, common	<i>Stellaria media</i>	C
Cocklebur, common	<i>Xanthium strumarium</i>	PC
Crabgrass, large	<i>Digitaria spp.</i>	C
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	C
Cupgrass, prairie	<i>Eriochloa contracta</i>	C
Cupgrass, Southwestern	<i>Eriochloa acuminata</i>	C
Cupgrass, woolly	<i>Eriochloa villosa</i>	C
Dandelion	<i>Taraxacum officinale</i>	PC
Deadnettle, purple	<i>Lamium purpureum</i>	C
Devil's-claw	<i>Proboscidea louisianica</i>	C
Foxtail, giant	<i>Setaria faberi</i>	C
Foxtail, green	<i>Setaria viridis</i>	C
Foxtail, yellow	<i>Setaria pumila</i>	C
Galinsoga	<i>Galinsoga parviflor</i>	C
Goosegrass	<i>Eleusine indica</i>	C
Hemp	<i>Cannabis sativa.</i>	C
Henbit	<i>Lamium amplexicaule</i>	C
Horsenettle	<i>Solanum carolinense</i>	C
Horseweed (maretail)	<i>Conyza canadensis</i>	C
Jimsonweed	<i>Datura stramonium</i>	C

Common Name	Scientific Name	C = Control PC = Partial Control
Kochia	<i>Kochia scoparia</i>	C
Lambsquarters, common	<i>Chenopodium album</i>	C
Mallow, Venice	<i>Hibiscus trionum</i>	C
Marestail	<i>Hippuris vulgaris</i>	PC
Millet, foxtail	<i>Setaria italica</i>	C
Millet, wild proso	<i>Panicum miliaceum</i>	PC
Morningglory, tall	<i>Ipomoea purpurea</i>	PC
Morningglory, ivyleaf/entireleaf	<i>Ipomoea hederacea</i>	PC
Mustard, blue	<i>Chorispora tenella</i>	C
Mustard, wild	<i>Brassica kaber</i>	C
Nightshade, black	<i>Solanum nigrum</i>	C
Nightshade, eastern black	<i>Solanum ptycanthum</i>	C
Nightshade, hairy	<i>Solanum sarrachoides</i>	C
Nutsedge, yellow	<i>Cyperus esculentus</i>	C
Panicum, fall	<i>Panicum dichotomiflorum</i>	C
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C
Pokeweed	<i>Phytolacca americana</i>	C
Potatoes, volunteer	<i>Solanum spp.</i>	C
Purslane, common	<i>Portulaca oleracea</i>	C
Pusley, Florida	<i>Richardia scabra</i>	C
Radish, wild	<i>Raphanus raphanistrum</i>	C
Ragweed, common	<i>Ambrosia artemisiifolia</i>	C
Ragweed, giant	<i>Ambrosia trifida</i>	C
Sesbania, hemp	<i>Sesbania exaltata</i>	C
Shattercane/vol. sorghum	<i>Sorghum bicolor</i>	PC
Shepherd's-purse	<i>Capsella bursa-pastoris</i>	C
Sida, prickly	<i>Sida spinosa</i>	C
Signalgrass, broadleaf	<i>Brachiaria platyphylla</i>	PC
Signalgrass, narrowleaf	<i>Brachiaria piligera</i>	C
Smartweed, ladysthumb	<i>Polygonum persicaria</i>	C
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	C
Sowthistle, annual	<i>Sonchus oleraceus</i>	C
Sunflower, volunteer	<i>Helianthus annus</i>	C
Sunflower, wild (common)	<i>Helianthus annus</i>	PC
Velvetleaf	<i>Abutilon theophrasti</i>	C
Thistle, Canada	<i>Cirsium arvense</i>	C
Waterhemp, common	<i>Amaranthus rudis</i>	C
Waterhemp, tall	<i>Amaranthus tuberculatus</i>	C

CROP ROTATIONAL INTERVALS

Crop	Rotational Interval
Grain sorghum ²	9 months
Soybeans	10 months
All other rotational crops	18 months
All corn types	Anytime

¹ Time between HM-1823 Herbicide application and replanting of the rotational crop.

² Grain sorghum must be seed treated with a safener to tolerate S-metolachlor.

When rotating crops following an application of HM-1823 Herbicide:

- If HM-1823 Herbicide is applied after June 1, rotating to crops other than corn (all types) the next spring may result in crop injury.
- Do not rotate to crops other than corn (all types), soybeans, or sorghum the spring following application of HM-1823 Herbicide.
- Injury may occur to soybeans planted the year following application on soils having a calcareous surface layer - for example, those found within the Clarion-Nicollet-Webster soil series of northern Iowa and southern Minnesota.
- In eastern parts of the Dakotas, Kansas, western Minnesota, and Nebraska do not rotate to soybeans for 18 months following application if the combined atrazine rate applied was more than 2.0 lbs. a.i./A, or equivalent band application rate, or soybean injury may occur.
- In the High Plains and Intermountain areas of the West where rainfall is sparse and erratic or where irrigation is required, use only when corn (all types) is to follow field corn, or a crop of untreated corn (all types) is to precede other rotational crops.

CORN USE DIRECTIONS

Apply HM-1823 Herbicide preemergence for control of most annual grass and broadleaf weeds in field corn, seed corn, sweet corn, and yellow popcorn.

HM-1823 Herbicide may also be applied early postemergence for the control of most annual grass and broadleaf weeds in field corn and seed corn. Do not apply HM-1823 Herbicide to emerged sweet corn or yellow popcorn or severe crop injury will occur.

HM-1823 Herbicide Application Timings

Burndown for Reduced Tillage Situations: In reduced or no-till corn and before the crop has emerged, HM-1823 Herbicide can be applied alone or in tank mixture with paraquat, glyphosate, or other registered herbicides for burndown of emerged weeds. Refer to Tables 1 and 2 for a list of weeds controlled or partially controlled by HM-1823 Herbicide.

Early Preplant: HM-1823 Herbicide may be applied up to 14 days prior to planting.

Preemergence Surface: HM-1823 Herbicide may be applied to the soil surface as a broadcast or banded application.

Postemergence: HM-1823 Herbicide may be applied after field corn emergence. See the ADDITIVES section of this label for adjuvant recommendations. Do not apply early postemergence to field corn in liquid fertilizer or severe crop injury may occur. Apply this treatment to small broadleaf weeds and before the field corn exceeds 12 inches in height. Occasional field corn leaf burn may result, but this will

not affect later growth or corn yield. Do not apply HM-1823 Herbicide to emerged sweet corn or yellow popcorn or severe crop injury may occur.

Split Application: HM-1823 Herbicide may be applied as a split application in field corn and seed corn. For a split application program, apply 1.5-2.0 qts./A of HM-1823 Herbicide (0.66 – 0.88 lb atrazine per acre, 0.66 – 0.88 lb s-metolachlor per acre, 0.016 – 0.022 lb tolpyralate per acre) (prior to crop emergence, followed by a second HM-1823 Herbicide application at a rate of 1.25-1.75 qts./A (0.55 – 0.77 lb atrazine per acre, 0.55 – 0.77 lb s-metolachlor per acre, 0.013 – 0.019 lb tolpyralate per acre) as a post application after corn emergence. The total amount of HM-1823 Herbicide applied in the split application program cannot exceed 3.0 qts./A (1.3 lb atrazine per acre, 1.3 lb s-metolachlor per acre, 0.032 lb tolpyralate per acre) in soils with <3% organic matter and cannot exceed 3.25 qts./A (1.4 lb atrazine per acre, 1.4 lb s-metolachlor per acre, 0.035 lb tolpyralate per acre) in soils with >3% organic matter. Refer to the **Postemergence** section above for instructions on postemergence applications.

HM-1823 Herbicide Use Rates

Table 3. HM-1823 Herbicide Use Rates in Corn

% Organic Matter	HM-1823 Herbicide Use Rate
<3%	2.0 – 3.0 qts./A (0.88 – 1.3 lb atrazine per acre, 0.88 – 1.3 lb s-metolachlor per acre, 0.022 – 0.032 lb tolpyralate per acre)
>3%	2.5 – 3.25 qts./A (1.1 – 1.4 lb atrazine per acre, 1.1 – 1.4 lb s-metolachlor per acre, 0.027 – 0.035 lb tolpyralate per acre)

HM-1823 Herbicide is not recommended on soils with greater than 10% organic matter or poor weed control may result.

Tank-Mix Combinations

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.

The tank-mix partners listed in this section may be used in conventional, reduced, or no-till systems and can be applied by the same methods and at the same timings as HM-1823 Herbicide, unless otherwise specified in the tank-mix product label. Follow all tank-mix product labels for use rates and restrictions. Perform a compatibility test prior to spraying the tank-mix application. Do not apply HM-1823 Herbicide tank mixtures to emerged sweet corn or yellow popcorn. For specific adjuvant recommendations, refer to the ADDITIVES section on this label.

Preemergence Tank Mixtures (Applied Before the Crop Has Emerged)

The tank-mix partners listed in Table 4 may be used in conventional, reduced, or no-till systems and be applied by the same methods and at the same timings as HM-1823 Herbicide unless otherwise specified in the tank-mix product label.

Follow all tank-mix product labels for use rates and restrictions. Perform a compatibility test prior to spraying the tank mixture. Tank mixtures with 2,4-D are allowed, but should only be done with extreme

care with regard to ensuring compatibility before mixing a load. 2,4-D products and even batches vary greatly with regard to compatibility and should be checked each time a water or carrier source, water or carrier temperature, product source, or tank mixture recipe is changed.

Table 4: Tank Mixtures for Preemergence Applications With HM-1823 Herbicide

Tank-Mix Partner ¹	Objective
Atrazine products	Improved broadleaf and grass weed control
Paraquat products	Burndown existing weeds
Metribuzin products	Improved broadleaf control
Simazine products	Improved broadleaf and grass weed control
Glyphosate brands	Burndown existing weeds
Pyrethroid insecticides	To control insects, such as cutworm

¹ Refer to tank-mix product label for use rates.

Early Postemergence Tank Mixtures (Applied After the Crop Has Emerged)

The tank-mix partners listed in Table 5 may be used in conventional, reduced, or no-till systems and can be applied by the same methods and at the same timings as HM-1823 Herbicide unless otherwise specified in the tank-mix product label.

Follow all tank-mix product labels for use rates and restrictions. Perform a compatibility test prior to spraying the tank-mix application. Do not apply HM-1823 Herbicide tank mixtures to emerged sweet corn or yellow popcorn.

Table 5: Tank Mixtures for Postemergence Weed Control with HM-1823 Herbicide

Tank-Mix Partner ¹	Objective
Atrazine products	Broadleaf and annual grass weed control
Nicosulfuron products	Emerged grass control
Basis® (thifensulfuron and rimsulfuron, EPA Reg. No. 352-571 and EPA Reg. No. 352-854)	Emerged grass control
Glufosinate products	See instructions under “HM-1823 Herbicide Programs in Glufosinate-Resistant Corn” section of this label
NorthStar® (dicamba, sodium salt and primisulfuron-methyl, EPA Reg. No. 100-923)	Improved broadleaf and grass weed control
Prosulfuron products	Improved broadleaf and grass weed control
Resolve® Q (thifensulfuron and rimsulfuron, EPA Reg. No. 352-777)	Emerged grass control
Glyphosate products	See instructions under “HM-1823 Herbicide Programs in Glyphosate-Resistant corn” section of this label
Spirit® (primisulfuron-methyl and prosulfuron, EPA Reg. No. 100-911)	Improved broadleaf and grass weed control
Status® (diflufenzopyr-sodium and dicamba, sodium salt, EPA Reg. No. 7969-242)	Emerged broadleaf weed control
Steadfast® Q (nicosulfuron and rimsulfuron, EPA Reg. No. 352-774)	Improved grass control
Pyrethroid insecticides	To control insects, such as cutworm

¹ Refer to tank-mix product label for use rates.

HM-1823 Herbicide Programs With Glyphosate for Glyphosate-Resistant Corn

HM-1823 Herbicide may be applied preemergence at a rate down to 2.0 qts./A (0.88 lb atrazine per acre, 0.88 lb s-metolachlor per acre, 0.022 lb tolpyralate per acre) as part of a two-pass weed control system when followed by a postemergence application of a glyphosate-based product in glyphosate-resistant corn. When used in this way, HM-1823 Herbicide will provide reduced competition of the weeds listed in Table 1 for a period of 30 or more days, thus improving the timing flexibility and effectiveness of the glyphosate-based product application. Follow all directions for use and restrictions on the glyphosate product label.

HM-1823 Herbicide may also be applied early postemergence at a rate down to 2.0 qts./A (0.88 lb atrazine per acre, 0.88 lb s-metolachlor per acre, 0.022 lb tolpyralate per acre) in tank mixture with a solo glyphosate product that is registered for use over-the-top in glyphosate-resistant field corn. To minimize weed competition with the crop, target the application of this mixture to weeds in the 1 to 2 inch range. Do not apply this mixture to corn that is greater than 12 inches tall. If the glyphosate product has a built-in adjuvant system (i.e. the product label does not ask for additional adjuvant), only spray-grade ammonium sulfate (AMS) at 8.5 lbs./100 gal should be added to this mixture. If the glyphosate product label calls for an adjuvant in addition to AMS, add a non-ionic surfactant (NIS) at 0.25% v/v and AMS to this spray mixture. Do not add urea ammonium nitrate (UAN), crop oil concentrate (COC), or methylated seed oil (MSO) type adjuvants to these mixtures or crop injury may occur. Follow all directions for use and restrictions on the glyphosate product label.

HM-1823 Herbicide Programs for Glufosinate-Resistant Corn

HM-1823 Herbicide may be applied preemergence at a rate down to 2.0 qts./A (0.88 lb atrazine per acre, 0.88 lb s-metolachlor per acre, 0.022 lb tolpyralate per acre) as part of a two-pass weed control system when followed by a postemergence application of glufosinate in field corn designated as glufosinate-resistant. When used in this way, HM-1823 Herbicide will provide reduced competition of the weeds listed in Table 1 for a period of 30 or more days, thus improving the timing flexibility and effectiveness of the glufosinate application. Follow all directions for use and restrictions on the glufosinate product label.

HM-1823 Herbicide may be applied early postemergence at a rate down to 2.0 qts./A (0.88 lb atrazine per acre, 0.88 lb s-metolachlor per acre, 0.022 lb tolpyralate per acre) in tank mixture with glufosinate and applied over-the-top in field corn designated as glufosinate-resistant. To minimize weed competition with the crop, target the application of this mixture to weeds in the 1 to 2-inch range. Do not apply this mixture to corn that is greater than 12 inches tall. Ammonium sulfate (AMS) may be added as a spray adjuvant as directed on the glufosinate label. However, AMS should be the only adjuvant added to this tank mixture. Do not add urea ammonium nitrate (UAN), crop oil concentrate (COC), non-ionic surfactants (NIS), or methylated seed oil (MSO) type adjuvants to these mixtures, or crop injury may occur. Follow all directions for use and restrictions on the glufosinate product label.

Precautions for All Corn Uses

1. Applying HM-1823 Herbicide postemergence (emerged corn) to corn that has received an at-plant application of terbufos insecticide can result in severe corn injury. Temporary corn injury may also occur if HM-1823 Herbicide is applied to emerged corn where organophosphate insecticides other than terbufos were applied at planting.
2. Postemergence (emerged corn) application of any organophosphate or carbamate insecticide within 7 days before or 7 days after a HM-1823 Herbicide application may result in severe corn injury.

Restrictions for All Corn Uses

1. Postemergence applications to corn must be made before crop reaches 12 inches in height.
2. Do not apply more than 3.25 qts./A of HM-1823 Herbicide (1.4 lb atrazine per acre, 1.4 lb s-metolachlor per acre, 0.035 lb tolpyralate per acre) per application.
3. Do not apply more than a total of 5.7 qts./A of HM-1823 Herbicide (2.5 lb atrazine per acre, 2.5 lb s-metolachlor per acre, 0.061 lb tolpyralate per acre) per year.
4. Do not harvest forage, grain, or stover within 60 days after last application.
5. Do not graze or feed forage from treated areas for 60 days following application, or illegal residues may result. For sweet corn, do not graze or feed forage from treated areas for 45 days following application, or illegal residues may result.
6. Do not make postemergence (emerged corn) applications of HM-1823 Herbicide in a tank mix with any organophosphate or carbamate insecticide or severe corn injury may occur.
7. Atrazine Herbicide Rate Limitations
 - Maximum atrazine application rates for field corn, field seed corn, field silage corn, sweet corn, and yellow popcorn must be as follows:
 - If no atrazine was applied prior to corn emergence, apply a maximum of 2.0 lbs. a.i./A broadcast. If a post-emergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 lbs. a.i./A per calendar year. When tank mixing or sequentially applying atrazine or products containing atrazine to corn, the total pounds of atrazine applied (lbs. a.i./A) must not exceed 2.5 lbs. active ingredient per year;
 - Apply a maximum of 2.0 lbs. a.i./A as a single preemergence application on soils that are not highly erodible or on highly erodible soils if at least 30% of the soil is covered with plant residues; or
 - Apply a maximum of 1.6 lbs. a.i./A as a single preemergence application on highly erodible soils if <30% of the surface is covered with plant residues, or 2.0 lbs. a.i./A if only applied postemergence.

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 seeds, fertilizers, or foodstuffs. Keep away from heat and flame.

Ground water contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material.

Pesticide Disposal

Open dumping is prohibited. Waste resulting from the use of this product must be disposed of on site or at an approved waste disposal facility. Rinse spray equipment. Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of as described above, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Handling [less 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 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 and 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 allowed by state and local authorities.

Container Handling [Bulk/Mini-Bulk]

Refillable container. Refill this container with pesticide only. Do not reuse the 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 allowed by state and local authorities. If the container is damaged, leaking, or obsolete, contact Helena Agri-Enterprises, LLC at 1-901-761-0050.

For minor spills, leaks, etc., follow all precautions on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire, or other emergency, call 1-800-888-8372, day or night. If the container is damaged and leaking or material has been spilled follow these procedures:

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

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

CONDITIONS OF SALE - LIMITED WARRANTY AND LIMITATIONS OF LIABILITY AND REMEDIES

Read the Conditions of Sale - Warranty and Limitations of Liability and Remedies before using this product. If the terms are not acceptable, return the product, unopened, and the full purchase price will be refunded.

The directions on this label are believed to be reliable and must be followed carefully. Insufficient control of pests and/or injury to the crop to which the product is applied may result from the occurrence of extraordinary or unusual weather conditions or the failure to follow the label directions or good application practices, all of which are beyond the control of Helena Agri-Enterprises, LLC (the "Company") or seller. In addition, failure to follow label directions may cause injury to crops, animals, man or the environment. The Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to in the directions for use subject to the factors noted above which are beyond the control of the Company. To the extent consistent with applicable law, The Company makes no other warranties or representations of any kind, express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose, and no such warranty shall be implied by law.

The exclusive remedy against the Company for any cause of action relating to the handling or use of this product shall be limited to, at Helena Agri-Enterprises, LLC's election, one of the following:

1. Refund of the purchase price paid by buyer or user for product bought, or
2. Replacement of the product used

To the extent consistent with applicable law, the Company shall not be liable and any and all claims against the Company are waived for special, indirect, incidental, or consequential damages or expense of any nature, including, but not limited to, loss of profits or income. The Company and the seller offer this product and the buyer and user accept it, subject to the foregoing conditions of sale and limitation of warranty, liability and remedies.