



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

November 10, 2021

Jeffrey Birk  
Regulatory Manager  
BASF  
26 Davis Drive  
Research Triangle Park, NC 27709

Subject: Registration Review Label Amendments for Atrazine Incorporating Mitigation Measures from the Interim Decision and the Technical Registrants' Commitments for the Endangered Species Act (ESA) Biological Evaluation  
*Product Name:* MARKSMAN HERBICIDE  
*EPA Registration Number:* 7969-136  
*Application Date:* 11/18/2020  
*Decision Number:* 572972

Dear Mr. Birk:

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 Interim Decision and with the technical registrants' commitments for the ESA Biological Evaluation. The Agency has concluded that your submission is 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 18 months from the date of this letter. After 18 months, you may only

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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 Quinn Gavin at [gavin.quinn@epa.gov](mailto:gavin.quinn@epa.gov).

Sincerely,

A handwritten signature in blue ink, appearing to read "Linda Arrington", with a long horizontal flourish extending to the right.

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.



Dicamba	Group	4	Herbicide
Atrazine	Group	5	Herbicide

# Marksman<sup>®</sup>

herbicide

**For use in corn, fallow systems, and sorghum**

**Active Ingredient:**

potassium salt of dicamba\* (3,6-dichloro-o-anisic acid) . . . . . 13.42%  
atrazine\*\* (2-chloro-ethylamino-6-isopropylamino-s-triazine) . . . . . 22.23%

**Other Ingredients:** . . . . . 64.35%

**Total:** . . . . . 100.00%

\* Contains 11.45% 3,6-dichloro-o-anisic acid (dicamba) which equals 1.1 pounds per gallon (132 grams per liter) or 0.14 pound per pint

\*\* Contains 22.23% atrazine which equals 2.13 pounds per gallon (256 grams per liter) or 0.266 pound per pint

**EPA Reg. No. 7969-136**

**EPA Est. No.**

**KEEP OUT OF REACH OF CHILDREN**  
**CAUTION/PRECAUCION**

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

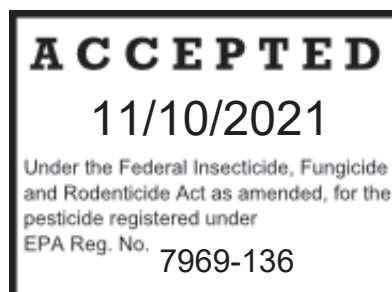
See inside for complete **First Aid, Precautionary Statements, Directions For Use, Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

**In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).**

**Net Contents:**

**Shake before using.**

BASF Corporation  
26 Davis Drive, Research Triangle Park, NC 27709



<b>FIRST AID</b>	
<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 to 20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes.</li> <li>• Remove contact lenses, if present, after first 5 minutes; then continue rinsing eyes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• <b>DO NOT</b> induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• <b>DO NOT</b> give anything to an unconscious person.</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>HOTLINE NUMBER</b>	
<p>Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).</p>	

## **Precautionary Statements**

### **Hazards to Humans and Domestic Animals**

**CAUTION.** Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin, or clothing. Avoid breathing spray mist.

### **Personal Protective Equipment (PPE)**

**Mixers, loaders, applicators, flaggers, and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, made of barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride, or Viton  $\geq$  14 mils (except for applicators using ground boom equipment, pilots, and flaggers)
- Shoes plus socks
- Chemical-resistant apron, when mixing/loading, cleaning up spills, or cleaning equipment, or otherwise exposed to the concentrate

See **Engineering Controls Statement** for additional requirements.

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

### **Engineering Controls Statement**

Mixers and loaders supporting aerial applications **at a rate greater than 3 lbs ai/A** must use a closed system that meets the requirements for dermal protection listed in the Worker Protection Standard (WPS) for Agricultural Pesticides [40 CFR 170.240(d)(4)] and must:

- Wear the personal protective equipment required for mixers and loaders.

- Wear protective eyewear if the system operates under pressure.
- Be provided and have immediately available for use in an emergency, such as a spill or equipment breakdown: chemical-resistant footwear

Pilots must use an enclosed cockpit in a manner that is consistent with the WPS for Agricultural Pesticides [40 CFR 170.240(d)(6)]. Pilots must wear the PPE required on this labeling for applicators; however, they need not wear chemical-resistant gloves when using an enclosed cockpit.

Flaggers supporting aerial applications must use an enclosed cab that meets the definition of the Worker Protection Standard for Agricultural Pesticides [40 CFR 170.240(d)(5)] for dermal protection.

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

### **USER SAFETY RECOMMENDATIONS**

#### **Users should:**

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

## Environmental Hazards

Atrazine can travel (seep or leach) through soil and can enter groundwater which may be used as drinking water. Atrazine has been found in groundwater. Users are advised not to apply atrazine to sand and loamy sand soils where the water table (groundwater) 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 groundwater.

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

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

Additional state imposed requirements regarding wellhead setbacks and operational area containment must be observed.

### **One of the following restrictions must be used when applying atrazine to tile-outletted fields containing standpipes:**

- **DO NOT** apply within 66 feet of standpipes in tile-outletted fields.
- Apply this product to the entire tile-outletted field and immediately incorporate it to a depth of 2 to 3 inches in the entire field.

- Apply this product to the entire tile-outletted field under a no-till practice only when managed for high crop residue. 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.

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 high water mark. **DO NOT** apply when weather conditions favor drift 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 washwater or rinsate.

## Ground and Surface Water Advisory

**Marksman® herbicide** contains the active ingredient atrazine. Atrazine can leach through soil and has been found to result in contamination of water supplies by way of groundwater. Therefore, growers are advised to avoid use of **Marksman** in well-drained loamy sand to sand soils, particularly in areas having high groundwater tables. Consult with your state or county extension agent for alternative herbicide programs such as **Clarity® herbicide** or **Distinct® herbicide** alone or in combination with a non-triazine herbicide.

Check valves or anti-siphoning devices must be used on all mixing equipment to prevent back-siphoning into wells or bulk storage tanks. Refer to **STORAGE AND DISPOSAL** regarding proper disposal of excess pesticide, spray mixtures, and rinsates.

**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.

## Endangered Species Concerns

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 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](mailto:ESPP@epa.gov). You must use the Bulletin valid for the month in which you will apply the product.

## AGRICULTURAL USE REQUIREMENTS

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

**DO NOT** enter or allow worker entry into treated areas during the restricted-entry interval (REI) of **24 hours**.

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

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

- Coveralls worn over short-sleeve shirt and short pants
- Chemical-resistant footwear plus socks
- Chemical-resistant gloves, made of barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride, or Viton  $\geq$  14 mils (except for applicators using ground boom equipment, pilots, and flaggers)
- Chemical-resistant headgear for overhead exposure
- Protective eyewear

## STORAGE AND DISPOSAL

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

### Pesticide Storage

Store in original container in a well-ventilated area separately from fertilizer, feed, and foodstuffs. Avoid cross-contamination with other pesticides.

### Pesticide Disposal

Open dumping is prohibited.

Pesticide wastes are toxic. Wastes resulting from this product may be disposed of on-site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of federal law. If these wastes cannot be disposed of according to label instructions, contact the state agency responsible for pesticide regulation or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to federal, state or local procedures under Subtitle C of the Resource Conservation and Recovery Act.

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## STORAGE AND DISPOSAL (continued)

### Container Handling

**Nonrefillable Container. DO NOT** reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

**Triple rinse containers small enough to shake (capacity  $\leq$  5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

**Triple rinse containers too large to shake (capacity  $>$  5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. 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.

**Pressure rinse as follows:** Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**Refillable Container.** Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

**Triple rinse as follows:** To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% 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.

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## STORAGE AND DISPOSAL *(continued)*

### Container Handling *(continued)*

When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

### In Case of Emergency

In case of large-scale spillage regarding this product, call:

- CHEMTREC 1-800-424-9300
- BASF Corporation 1-800-832-HELP (4357)

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- BASF Corporation 1-800-832-HELP (4357)

### Steps to be taken in case material is released or spilled:

- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing and wash affected skin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

## Directions For Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling. **DO NOT** apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

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](http://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 BASF Corporation for a refund.

Unless otherwise directed in supplemental labeling, all applicable directions, restrictions and precautions are to

be followed. This labeling must be in the user's possession during application.

## Product Information

**Marksman® herbicide** is a water-dispersible formulation for use in corn, fallow systems, or sorghum to control annual broadleaf weeds and to suppress perennial broadleaf weeds (refer to **Table 1**).

### Mode of Action

**Marksman** contains two active ingredients: dicamba and atrazine. Dicamba is readily absorbed by plants through root-and-shoot uptake, translocates throughout the plant's system, and accumulates in areas of active growth. Dicamba interferes with the plant's growth hormones (auxins) resulting in death of many broadleaf weeds. Atrazine is absorbed by roots and shoots and controls weeds by inhibiting photosynthesis.

### Weed Resistance Management

For resistance management, **Marksman** contains both a **Group 4** and a **Group 5** herbicide. Any weed population may contain plants naturally resistant to **Group 4** and/or **Group 5** herbicides. The resistant individuals may dominate the weed population if these herbicides are used repeatedly are used repeatedly in the same fields. Appropriate resistant-management strategies should be followed.

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

- Rotate the use of **Marksman** or other **Group 4** and **Group 5** 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.
- 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 your BASF retailer, representative. For more information about weeds that are known to be resistant to dicamba go to **www.Resistance-Information.BASF.US**.

### Cleaning Spray Equipment

Clean application equipment thoroughly by using a strong detergent or commercial sprayer cleaner according to the manufacturer's directions, and then triple rinsing the equipment before and after applying this product.

**Table 1. Weeds Controlled, including ALS-resistant and Triazine-resistant Biotypes**

<b>ANNUALS</b>	<b>PERENNIALS</b>
Amaranth, Palmer, Powell	Alfalfa
Buckwheat, Wild	Artichoke, Jerusalem
Burcucumber	Bindweed, Field, Hedge
Chickweed, Common	Clover, Hop
Clovers	Dandelion
Cocklebur, Common	Dock, Broadleaf, Curly
Copperleaf, Hophornbeam	Dogbane, Hemp
Cucumber, Wild	Horsenettle, Carolina
Jimsonweed	Lespedeza
Kochia	Milkweed, Common
Ladysthumb	Ragweed, Western
Lambsquarters, Common	Smartweed, Swamp
Mallow, Common, Venice	Sowthistle, Perennial
Marestail (Horseweed)	Thistle, Canada, Scotch
Morningglory, Ivyleaf, Tall	Trumpet creeper (Buckvine)
Mustard, Wild, Tansy, Yellowtop	Vetch
Nightshade, Black, Cutleaf	
Pigweed, Prostrate, Redroot (Carelessweed), Smooth, Spiny, Tumble	
Puncturevine	
Purslane, Common	
Ragweed, Common, Giant, Lance-Leaf	
Sicklepod	
Sida, Prickly (Teaweed)	
Smartweed, Green, Pennsylvania	
Spanish Needles	
Spurge, Prostrate	
Sunflower, Common (Wild), Volunteer	
Thistle, Russian	
Velvetleaf	
Waterhemp, Common, Tall	

### Application Instructions

**Marksman® herbicide** can be applied preemergence or postemergence to actively growing weeds as aerial, broadcast, band, or spot spray applications using water or sprayable fertilizer as a carrier. Sprayable fluid fertilizer as a carrier is not recommended for use after crop emergence. For crop-specific application timing and other details, refer to the **Crop-specific Information** section.

Avoid off-target movement. Use extreme care when applying **Marksman** to prevent injury to desirable plants and shrubs.



## Sensitive Crop Precautions

**Marksman® herbicide** may cause injury to desirable trees and plants, particularly beans, cotton, flowers, fruit trees, grapes, ornamentals, peas, potatoes, soybeans, sunflowers, tobacco, tomatoes, and other broadleaf plants when contacting their roots, stems, or foliage. These plants are most sensitive to **Marksman** during their development or growing stage.

## Application Methods and Equipment

**Aerial Spray Carrier Volume.** Water Volume: Use 2 to 10 gallons of water per acre. Use the higher spray volume when treating dense or tall vegetation. Application Equipment: Select nozzles designed to produce minimal amounts of fine spray particles. Make applications at the lowest safe height to reduce the exposure of spray droplets to evaporation and wind. The applicator must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.

**Ground Spray Carrier Volume.** Water Volume: Use 10 to 50 gallons of spray solution per broadcast acre for optimal performance. Use the higher spray volume when treating dense or tall vegetation. Application Equipment: Select nozzles designed to produce minimal amounts of fine spray particles. Spray with nozzles as close to the weeds as is practical for good weed coverage.

## Mandatory Spray Drift Management

### Aerial Applications

- **DO NOT** release spray at a height greater than 10 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety .
- Applicators are required to use a coarse or coarser spray droplet size (ASABE S572) .
- If the wind speed is 10 miles per hour or less, applicators must use 1/2 swath displacement upwind at the downwind edge of the field. When the wind speed is between 11 to 15 miles per hour, applicators must use 3/4 swath displacement upwind at the downwind edge of the field.
- **DO NOT** apply when wind speeds exceed 15 miles per hour at the application site. If the wind speed is greater than 10 mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed wing aircraft and 90% or less of the rotor diameter for helicopters.
- **DO NOT** apply during temperature inversions.
- User must maintain a 150 foot (46 m) 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.

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## Mandatory Spray Drift Management

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### Ground Boom Applications

- User must only apply with the release height recommended by the manufacturer, but no more than 4 ft above the ground or crop canopy.
- Applicators are required to use a coarse or coarser spray droplet size (ASABE S572).
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.
- User must maintain a 15 foot (4.6 m) 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.

## 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.

### Controlling Droplet Size - Aircraft

**Adjust Nozzles** - Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles must be oriented parallel with the airflow in flight.

### 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 must remain level with the crop and have minimal bounce.

### Release Height - Aircraft

Higher release heights increase the potential for spray drift. When applying aurally to crops, **DO NOT** release spray at a height greater than 10 feet above the crop canopy, unless a greater application height is necessary for pilot safety.

## 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 Inversion

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.

## Ground Application (Banding)

When applying **Marksman® herbicide** by banding, determine the amount of herbicide and water volume needed using the following formula:

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \text{Broadcast rate per acre} = \text{Banding herbicide rate per acre}$$

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \text{Broadcast volume per acre} = \text{Banding water volume per acre}$$

## Additives

To improve postemergence weed control, agriculturally approved surfactants, sprayable fertilizers (urea ammonium nitrate or ammonium sulfate), or crop oil concentrate may be added, particularly in dry growing conditions; refer to **Table 2**.

### Nitrogen Source

- **Urea ammonium nitrate (UAN):** Use 2 to 4 quarts of UAN (28%, 30%, or 32% nitrogen solution) per acre. **DO NOT** use brass or aluminum nozzles when spraying UAN.
- **Ammonium sulfate (AMS):** AMS at 2.5 pounds per acre may be substituted for UAN. Use high-quality AMS (spray grade) to avoid plugging of nozzles. Other sources of nitrogen are not as effective as those mentioned. BASF does not recommend applying AMS if applied in less than 10 gallons per acre because of potential problems with precipitation in reduced volumes. Use AMS

only if it has been demonstrated to be successful in local experience.

## Nonionic Surfactant (NIS)

The standard label recommendation is 1 pint of an 80% active nonionic spray surfactant per 100 gallons of water. For certain weeds, a higher spray surfactant rate is recommended.

## Crop Oil Concentrate (COC)

A crop oil concentrate must contain either a petroleum-oil or vegetable-oil base and must meet all of the following criteria:

- Nonphytotoxic
- Contain only EPA-exempt ingredients
- Provide good mixing quality in the jar test
- Successful in local experience

The exact composition of suitable products will vary; however, vegetable-oil and petroleum-oil concentrates should contain emulsifiers to provide good mixing quality. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils.

For additional information, see **Compatibility Test for Mix Components**.

Adjuvants containing crop oil concentrates may be used in preplant, preemergence, and all fallow system applications. **DO NOT** use crop oil concentrate for postemergence in-crop applications unless specifically allowed in the **Crop-specific Information** section.

**Table 2. Additive Rate per Acre**

Additive	Rate/Acre
NIS	1 to 2 pints per 100 gallons
AMS	2.5 pounds
UAN solution	2 to 4 quarts
COC	1 quart*

\* See manufacturer's label for specific rates.

## Compatibility Test for Mix Components

Before mixing components, always perform a compatibility jar test.

For 20 gallons per acre spray volume, use 3.3 cups (800 ml) of water. For other spray volumes, adjust rates accordingly. Only use water from the intended source at the source temperature.

Add components in the sequence indicated in **Mixing Order** using 2 teaspoons for each pound or 1 teaspoon for each pint of label rate per acre.

Always cap the jar and invert 10 cycles between component additions.

When the components have all been added to the jar, let the solution stand for 15 minutes. Evaluate the solution for uniformity and stability. The spray solution should not have free oil on the surface, or fine particles that precipitate to the bottom, or thick (clabbered) texture. If the spray solution is not compatible, repeat the compatibility test with the addition of a suitable compatibility agent. If the solution is

then compatible, use the compatibility agent as directed on its label. If the solution is still incompatible, **DO NOT** mix the ingredients in the same tank.

### Mixing Order

1. **Water.** Begin by agitating a thoroughly clean sprayer tank 3/4 full of clean water.
2. **Agitation.** Maintain constant agitation throughout mixing and application.
3. **Inductor.** If an inductor is used, rinse it thoroughly after each component has been added.
4. **Products in PVA bags.** Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
5. **Water-dispersible products** (such as **Marksman® herbicide**, dry flowables, wettable powders, suspension concentrates, or suspo-emulsions)
6. **Water-soluble products**
7. **Emulsifiable concentrates** (such as crop oil concentrate when applicable)
8. **Water-soluble additives** (such as AMS or UAN when applicable)
9. **Remaining quantity of water**

Maintain constant agitation during application.

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## Tank Mixing Information

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### Tank Mix Partners/Components

**Marksman** may be tank mixed or applied sequentially with other herbicide products according to the specific tank mixing instructions in their label and respective product labels. See **Crop-specific Information** section for more details. Read and follow the applicable restrictions and limitations and **Directions For Use** on all products involved in tank mixing. The most restrictive labeling applies to tank mixes.

**Marksman** may also be used in tank mixtures with foliar-applied insecticides, including synthetic pyrethroids or with carbamate insecticides. **DO NOT** apply **Marksman** in tank mixtures with **Lorsban® insecticide**.

Physical incompatibility, reduced weed control, or crop injury may result from mixing **Marksman** with other pesticides (fungicides, herbicides, insecticides, or miticides), additives, or fertilizers. Local agricultural authorities may be a source of tank mix information.

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## Use Restrictions

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- **Maximum seasonal use rate:** See **Table 3** for crop-specific maximum seasonal use rates for **Marksman**.
- **Marksman** contains atrazine (0.26 pound of active ingredient per pint). When tank mixing or making sequential applications with products that contain atrazine, **DO NOT** exceed the following total combined rates of atrazine.

Postemergence applications to corn and sorghum must be made before crop reaches 12 inches in height.

Maximum broadcast application rates for corn and sorghum must be as follows:

- If no atrazine was applied prior to corn/sorghum emergence, apply a maximum of 2.0 lbs of atrazine ai/A broadcast. If postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 lbs ai/A per calendar year.
- Apply a maximum of 2.0 lbs of atrazine ai/A as a single preemergence application on soils that are not highly erodible or on highly erodible soils (as defined by the Natural Resource Conservation Service) if at least 30% of the surface is covered with plant residues; **or**
- Apply a maximum of 1.6 lbs of atrazine ai/A as a single preemergence application on highly erodible soils (as defined by the Natural Resource Conservation Service) if < 30% of the surface is covered with plant residues; **or** 2.0 lbs of atrazine ai/A if only applied postemergence.

- **Preharvest interval (PHI): Refer to the Crop-specific Information section for preharvest intervals.**

- **Restricted-entry interval (REI): 24 hours**

- **Crop Rotation Restrictions**

- In cases of treated crop failure, the area may be replanted to either corn or sorghum during the same cropping season. If corn is replanted, **DO NOT** apply **Banvel® herbicide**, **Clarity® herbicide**, or **Marksman** until after emergence. If sorghum is the replanted crop, **Banvel**, **Clarity**, or **Marksman** can be used as a postemergence application.
- If applied after June 10, rotation with crops other than corn or sorghum the following spring may result in crop injury.
- 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 or sorghum is to follow corn or sorghum, or when a crop of untreated corn or sorghum is to precede other rotational crops.
- For soils containing a calcareous surface layer, such as those found in eastern parts of the Dakotas, Kansas, western Minnesota, and Nebraska, injury may occur to soybeans or small grains planted the year following application.
- Small grains may be planted 10 months following treatment. **DO NOT** plant sugar beets, tobacco, vegetables (including dry beans), or small-seeded legumes and grasses in the spring of the year following application, or injury may occur.

- **Rainfast period:** Rainfall or irrigation occurring within **4 hours** after postemergence applications may reduce the effectiveness of **Marksman® herbicide**.
- **Stress: DO NOT** apply to weeds under stress because of lack of moisture, hail damage, flooding, herbicide injury, mechanical injury, or widely fluctuating temperatures, or unsatisfactory control may result.
- **DO NOT** apply to crops that show injury (leaf phytotoxicity or plant stunting) produced by any other prior herbicide applications because this injury may be enhanced or prolonged.
- **DO NOT** apply through any type of **irrigation** system.
- **DO NOT** contaminate irrigation ditches or water used for domestic purposes.

- 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).

Users must only apply to fallow land in the following states according to the prescribed rotation pattern in the table below:

Fallow Rotation Pattern	Fallow Use Authorized in these States Only
Wheat-Corn-Fallow	CO, KS, ND, NE, SD, and WY
Wheat-Fallow-Wheat	CO, KS, ND, NE, SD, and WY
Wheat-Sorghum-Fallow	AR, CO, GA, IL, KS, LA, MS, MO, NE, NM, NC, OK, SD, and TX

**Table 3. Crop-specific Restrictions and Limitations**

Crop	Maximum Rate per Acre per Application (pints)	Maximum Rate per Acre per Season (pints)	Livestock Grazing or Feeding	Aircraft Application
Corn	3.5	5.25	Yes <sup>1</sup>	Yes
Fallow ground	7.1	8.6	No	Yes
Sorghum	2	3.5	Yes <sup>2</sup>	Yes

<sup>1</sup> Crop may be harvested or grazed for feed after it has reached the ensilage (milk) stage or later in maturity.  
<sup>2</sup> Crop may be grazed or fed to livestock at mature grain stage.

## Crop-specific Information

### Corn (Field, Seed, Silage) and Popcorn

Corn may be harvested or grazed for feed after it has reached the ensilage (milk) stage or later in maturity.

Direct contact of **Marksman** with corn seed must be avoided in preplant or preemergence applications. If corn seeds are less than 1.5 inches below the soil surface, delay application until corn has emerged.

A maximum of 2 applications of **Marksman** may be made per season.

**DO NOT** apply **Marksman** to seed corn or popcorn without first verifying with your local seed corn company (supplier) the selectivity of **Marksman** on your inbred line or variety of popcorn. This precaution will help avoid potential injury of sensitive varieties.

**Marksman** is not registered for use on sweet corn.

Avoid using crop oil concentrates after crop emergence or crop injury may result. Use crop oil concentrates only in dry conditions when corn is less than 5 inches tall and when applying **Marksman** alone or tank mixed with atrazine.

For field corn forage uses, a 60-day PHI is required.

Postemergence applications to corn must be made before crop reaches 12 inches in height.

Maximum broadcast application rates for corn must be as follows:

- If no atrazine was applied prior to corn emergence, apply a maximum of 2.0 lbs of atrazine ai/A broadcast. If postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 lbs ai/A per calendar year.
- Apply a maximum of 2.0 lbs of atrazine ai/A as a single preemergence application on soils that are not highly erodible or on highly erodible soils (as defined by the Natural Resource Conservation Service) if at least 30% of the surface is covered with plant residues; **or**
- Apply a maximum of 1.6 lbs of atrazine ai/A as a single preemergence application on highly erodible soils (as defined by the Natural Resource Conservation Service) if < 30% of the surface is covered with plant residues; **or** 2.0 lbs of atrazine ai/A if only applied postemergence.

### PREPLANT AND PREEMERGENCE APPLICATION IN NO-TILLAGE CORN

Apply 3.5 pints of **Marksman** per acre on medium-texture or fine-texture soils containing 2.5% or greater organic matter. Use 2 pints per acre on coarse soils (sand, loamy sand, and sandy loam) or medium-texture and fine-texture soils with less than 2.5% organic matter. Avoid use of **Marksman** in well-drained loamy sand to sand soils, particularly in areas having high groundwater tables.

**Marksman** may be applied for burndown of emerged weeds before, during, or after corn planting. When planting into a legume sod (e.g. alfalfa or clover), apply

**Marksman® herbicide** after 4 inches to 6 inches of regrowth has occurred.

### **PREEMERGENCE APPLICATION IN CONVENTIONAL OR REDUCED TILLAGE CORN**

**Marksman** may be applied after planting and prior to corn emergence.

Apply 3.5 pints per treated acre to medium-texture or fine-texture soils that contain 2.5% organic matter or more.

**DO NOT** apply to coarse-texture soils (sand, loamy sand, or sandy loam) or any soil with less than 2.5% organic matter until after corn emergence; see **EARLY POST-EMERGENCE APPLICATION IN ALL TILLAGE SYSTEMS** following.

Preemergence application of **Marksman** does not require mechanical incorporation to become active. A shallow mechanical incorporation is recommended if application is not followed by adequate rainfall or sprinkler irrigation. Avoid tillage equipment (e.g. drags, harrows) that concentrates treated soil over seed furrow, or seed damage could result.

### **EARLY POSTEMERGENCE APPLICATION IN ALL TILLAGE SYSTEMS**

Apply 3.5 pints of **Marksman** per treated acre to medium-texture or fine-texture soils. Reduce the rate to 2 pints per treated acre for corn grown on coarse-texture soils (sand, loamy sand, and sandy loam).

Apply between corn emergence and the 5-leaf stage or 8 inches tall, whichever occurs first.

### **POSTEMERGENCE APPLICATION IN ALL TILLAGE SYSTEMS**

Apply 2 pints of **Marksman** per acre on all soils when corn is 8 inches to 12 inches tall.

For best performance, apply **Marksman** when weeds are less than 3 inches tall. Apply **Marksman** with directed spray when corn leaves prevent proper spray coverage of target weeds.

### **Corn Tank Mixes and Sequential Uses**

When tank mixing or sequentially applying atrazine and/or simazine to corn, the total pounds of atrazine and/or simazine combined applied (lbs ai/A) must not exceed 2.5 lbs combined active ingredient per acre per year.

When using tank mix or sequential applications with **Marksman**, always follow the companion product label to determine specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow precautions and restrictions including state and local use restrictions that may apply to specific products.

Tank mixes with products that contain dicamba must not exceed a total combined rate of 0.50 pound of dicamba acid equivalent per acre (0.25 pound on coarse-texture soils or on any soil when corn is greater than 8 inches tall). Sequential applications of products that contain dicamba must be separated by a minimum of 2 weeks (unless the

combined rate is less than 0.5 pound of dicamba acid equivalent and corn is 8 inches tall or less) and must not exceed a combined total of 0.75 pound dicamba acid equivalent per acre for in-crop use.

## **Fallow Systems**

**Marksman** may be applied to fallow ground through the summer and fall after wheat harvest in wheat/fallow/wheat, or wheat/corn, or sorghum/fallow (Eco-fallow) rotations. For Eco-fallow systems, plant corn or sorghum in the spring after treatment with minimum soil disturbance. Use a surface planter or a planter leaving a shallow furrow. If weeds are present at planting, remove them with a sweep plow or other suitable implement before planting.

**When tank mixing or sequentially applying atrazine or products containing atrazine in fallow systems, the total pounds of atrazine applied (lbs ai/A) must not exceed the limits as noted in the following Chemical Fallow application restrictions:**

**For soils in North Dakota and South Dakota with a pH of 7.5 or greater:**

- **DO NOT** apply more than 1.5 pounds active ingredient per acre for any application.
- **DO NOT** apply more than one application per cycle.

**For soils in North Dakota and South Dakota with a pH of less than 7.5:**

- **DO NOT** apply more than 2.0 pounds active ingredient per acre for any application.
- **DO NOT** apply more than one application per cycle.

**For all other locations:**

- **DO NOT** apply more than 2.25 pounds active ingredient per acre for any application.
- **DO NOT** apply more than one application per cycle.

### **ROTATIONAL CROP PRECAUTIONS**

The application rates and timings in this label pertain only to a cropping system of wheat/fallow/wheat (postharvest fallow), or wheat/corn, or sorghum/fallow (Eco-fallow). If any other crop is to be substituted for wheat, corn, sorghum, or the fallow period, refer to the **Crop Rotation Restrictions** in the **Use Restrictions** section.

To avoid injury to crops planted after applying **Marksman**, specific restrictions for postharvest fallow or Eco-fallow application(s) are:

- Use only on silt loam or finer-textured soils.
- **DO NOT** treat erodible hillsides, caliche, and rocky outcroppings, or exposed calcareous subsoil.
- **DO NOT** treat soils of the Rosebud and Canyon series in western Nebraska and adjoining counties in Colorado and Wyoming.
- **DO NOT** treat soils with calcareous surface layers.
- Avoid overlapping spray swaths during treatment application.

## WHEAT/FALLOW/WHEAT

### For use in Colorado, Kansas, Nebraska, South Dakota, and Wyoming

For preemergence or postemergence control or suppression of the weeds listed in this label, apply 2 to 3.5 pints of **Marksman® herbicide** per treated acre as a broadcast treatment. For best performance, apply soon after wheat harvest, prior to, or soon after weed emergence. A split application of **Marksman** may be used, but only in the summer to fall after wheat harvest, and may not exceed the maximum rate of 3.5 pints per treated acre.

## WHEAT/CORN OR SORGHUM/FALLOW (ECO-FALLOW)

### For use in Colorado, Kansas, Nebraska, Oklahoma, and Texas

To control annual broadleaf or grass weeds following wheat and into the following corn or sorghum crop (when grown under minimum tillage), apply 2 to 7.1 pints of **Marksman** per acre. For best performance, apply **Marksman** within 10 days after harvesting wheat. Use higher rates listed for added grass control and longer residual weed control. A split application of **Marksman** may be used but only in summer to fall after wheat harvest and may not exceed the maximum labeled rate of 8.6 pints per acre (2.25 pounds of atrazine per acre).

#### Crop-specific Use Restrictions

- **DO NOT** graze or feed forage from treated areas to livestock.
- **DO NOT** plant any crop other than those listed in this label within 18 months following treatment.

Users must only apply to fallow land in the following states according to the prescribed rotation pattern in the table below:

Fallow Rotation Pattern	Fallow Use Authorized in these States Only
Wheat-Corn-Fallow	CO, KS, ND, NE, SD, and WY
Wheat-Fallow-Wheat	CO, KS, ND, NE, SD, and WY
Wheat-Sorghum-Fallow	AR, CO, GA, IL, KS, LA, MS, MO, NE, NM, NC, OK, SD, and TX

## Fallow Systems Tank Mixes and Sequential Uses

When using tank mix or sequential applications with **Marksman**, always follow the companion product label to determine specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow precautions and restrictions including state and local use restrictions that may apply to specific products.

When tank mixing sequential applications with products containing atrazine, **DO NOT** apply more than 2.25 lbs ai/A per cycle.

## Sorghum

**Marksman** may be applied preplant or postemergence in sorghum to control many annual broadleaf weeds and to reduce competition from established perennial broadleaf weeds as well as control their seedlings.

**DO NOT** apply to furrow-planted sorghum until level (plowed in).

**DO NOT** apply **Marksman** to sorghum grown for seed production.

**DO NOT** graze or feed forage from treated areas for 21 days or more following application.

**DO NOT** graze livestock in treated areas for 21 days or more following application.

**DO NOT** add crop oil if application is made after sorghum emergence. **DO NOT** add surfactant unless possible crop injury is acceptable.

For preemergence sorghum forage uses, a 60-day PHI is required.

For postemergence sorghum forage uses, a 45-day PHI is required.

Postemergence applications to sorghum must be made before crop reaches 12 inches in height.

Maximum broadcast application rates for sorghum must be as follows:

- If no atrazine was applied prior to sorghum emergence, apply a maximum of 2.0 lbs of atrazine ai/A broadcast. If postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 lbs ai/A per calendar year.
- Apply a maximum of 2.0 lbs of atrazine ai/A as a single preemergence application on soils that are not highly erodible or on highly erodible soils (as defined by the Natural Resource Conservation Service) if at least 30% of the surface is covered with plant residues; **or**
- Apply a maximum of 1.6 lbs of atrazine ai/A as a single preemergence application on highly erodible soils (as defined by the Natural Resource Conservation Service) if < 30% of the surface is covered with plant residues; **or** 2.0 lbs of atrazine ai/A if only applied postemergence.

**DO NOT** apply atrazine and propazine products to the same sorghum acre.

#### Preplant Application

Up to 2 pints of **Marksman** may be used and must be applied at least 15 days before sorghum planting.

#### Postemergence Application

Apply **Marksman** in sorghum between the 2 to 5 leaf stage (about 2 inches to 8 inches tall) of the sorghum. For best performance, apply when sorghum is in the 2 to 3 leaf stage. Applying **Marksman** to sorghum during periods of rapid growth may result in temporary leaning of plants or rolling of leaves. These effects are usually outgrown within

10 to 14 days. On coarse soils, injury to sorghum may occur if heavy rain immediately follows application.

Apply 1.5 pints of **Marksman® herbicide** per acre to control actively growing redroot pigweed less than 3 inches tall. Apply 2 pints of **Marksman** per acre for all other listed broadleaf weeds.

### Split Applications

**Marksman** may be applied in split applications: preplant followed by postemergence applications. **DO NOT** exceed a total of 3.5 pints of **Marksman** per acre per season.

### Sorghum Tank Mixes and Sequential Uses

When tank mixing or sequentially applying atrazine or products containing atrazine, **DO NOT** exceed an application rate of 2.0 lbs ai/A for any single application; the total pounds of atrazine applied must not exceed 2.5 lbs ai/A per year. When using tank mix or sequential applications with **Marksman**, always follow the companion product label to determine specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow precautions and restrictions including state and local use restrictions that may apply to specific products.

Weeds Listed in This Label	
Common Name	Scientific Name
Alfalfa	<i>Medicago sativa</i>
Amaranth, Palmer	<i>Amaranthus palmeri</i>
Amaranth, Powell	<i>Amaranthus powellii</i>
Artichoke, Jerusalem	<i>Helianthus tuberosus</i>
Bindweed, field	<i>Convolvulus arvensis</i>
Bindweed, hedge	<i>Calystegia sepium</i>
Buckwheat, wild	<i>Polygonum convulvulus</i>
Chickweed, common	<i>Stellaria media</i>
Clovers	<i>Trifolium</i> spp.
Clover, hop	<i>Trifolium aureum</i>
Cocklebur, common	<i>Xanthium strumarium</i>
Copperleaf, hophornbeam	<i>Acalypha ostryifolia</i>
Cucumber, wild	<i>Echinocystis lobata</i>
Dandelion	<i>Taraxacum officinale</i>
Dock, broadleaf (bitterdock)	<i>Rumex obtusifolius</i>
Dock, curly	<i>Rumex crispus</i>
Dogbane, hemp	<i>Apocynum cannabinum</i>
Horsenettle, Carolina	<i>Solanum carolinense</i>
Jimsonweed	<i>Datura stratum</i>
Kochia	<i>Kochia scoparia</i>
Ladysthumb	<i>Polygonum persicaria</i>
Lambsquarters, common	<i>Chenopodium album</i>
Lespedeza	<i>Lespedeza</i> spp.
Mallow, common	<i>Malva neglecta</i>
Mallow, Venice	<i>Hibiscus trionum</i>
Marestail (horseweed)	<i>Conyza canadensis</i>
Milkweed, common	<i>Asclepias syriaca</i>
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>
Morningglory, tall	<i>Ipomoea purpurea</i>

(continued)

Weeds Listed in This Label (continued)	
Common Name	Scientific Name
Mustard, wild	<i>Sinapis arvensis</i>
Mustard, yellowtop	<i>Sinapis</i> spp.
Nightshade, black	<i>Solanum nigrum</i>
Pigweed, prostrate	<i>Amaranthus blitoides</i>
Pigweed, redroot, (carelessweed)	<i>Amaranthus retroflexus</i>
Pigweed, smooth	<i>Amaranthus hybridus</i>
Pigweed, spiny	<i>Amaranthus spinosus</i>
Pigweed, tumble	<i>Amaranthus albus</i>
Puncturevine	<i>Portulaca oleracea</i>
Purslane, common	<i>Richardia scabra</i>
Ragweed, common	<i>Ambrosia artemisiifolia</i>
Ragweed, giant (buffaloweed)	<i>Ambrosia trifida</i>
Ragweed, lance-leaf	<i>Ambrosia bidentata</i>
Ragweed, western	<i>Ambrosia psilostachya</i>
Sida, prickly (teaweed)	<i>Sida spinosa</i>
Smartweed, green	<i>Polygonum scabrum</i>
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>
Smartweed, swamp	<i>Polygonum coccineum</i>
Sowthistle, perennial	<i>Sonchus arvensis</i>
Spanish needles	<i>Bidens bipinnata</i>
Spurge, prostrate	<i>Euphorbia humistrata</i>
Sunflower, common (Wild)	<i>Helianthus annuus</i>
Thistle, Russian	<i>Salsola iberica</i>
Thistle, Canada	<i>Cirsium arvense</i>
Trumpet creeper	<i>Campsis radicans</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Vetch	<i>Vicia</i> spp.
Waterhemp, common	<i>Amaranthus rudis</i>
Waterhemp, tall	<i>Amaranthus tuberculatus</i>

## Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above.

**TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.**

**TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S EXCLUSIVE REMEDY AND BASF'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF THE PRODUCT.**

**TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF AND THE SELLER DISCLAIM ANY LIABILITY FOR CONSEQUENTIAL, EXEMPLARY, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.**

BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

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