



U.S. ENVIRONMENTAL PROTECTION AGENCY

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

EPA Reg. Number:

60063-66

Date of Issuance:

2/15/18

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
(under FIFRA, as amended)

Term of Issuance:

Conditional

Name of Pesticide Product:

Sipcam Mesotrione 4L

Name and Address of Registrant (include ZIP Code):

Patricia McFadden  
Registration Manager  
Sipcam Agro USA, Inc.  
2525 Meridian Parkway, Suite 350  
Durham, NC 27713

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A). You must comply with the following conditions:

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

Signature of Approving Official:

Erik Kraft, Product Manager 24  
Fungicide & Herbicide Branch, Registration Division (7505P)

Date:

2/15/18

2. You are required to comply with the data requirements described in the DCI identified below:
  - a. Mesotrione GDCI-122990-1474

You must comply with all of the data requirements within the established deadlines. If you have questions about the Generic DCI listed above, you may contact the Chemical Review Manager in the Pesticide Reevaluation Division: <http://iaspub.epa.gov/apex/pesticides/f?p=chemicalsearch:1>

3. Make the following label changes before you release the product for shipment:
  - Revise the EPA Registration Number to read, “EPA Reg. No. 60063-66.”
4. Submit one copy of the final printed label for the record before you release the product for shipment.

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

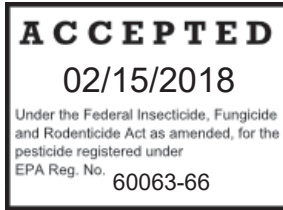
If you fail to satisfy these data requirements, EPA will consider appropriate regulatory action including, among other things, cancellation under FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 01/16/2018
- Alternate CSF 1 dated 01/16/2018
- Alternate CSF 2 dated 01/16/2018
- Alternate CSF 3 dated 01/16/2018
- Alternate CSF 4 dated 01/16/2018
- Alternate CSF 5 dated 01/16/2018
- Alternate CSF 6 dated 01/16/2018
- Alternate CSF 7 dated 01/26/2018

If you have any questions, please contact Lisa Pabel by phone at (703) 347-0459, or via email at [pabel.lisa@epa.gov](mailto:pabel.lisa@epa.gov).

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EPA Reg. No. 60063-66  
Decision No. 535018

Enclosure: Product chemistry review dated 01/09/2018, DP#444183; Similarity clinic memo dated 01/17/2018, DP#444135



**GROUP 27 HERBICIDE**

# Sipcam Mesotrione 4L

[Controls annual broadleaf weeds in Corn (field, seed, yellow pop, sweet), Sorghum, and Sugarcane.]

[Provides selective and residual control of weeds in Ornamental Turfgrasses]

Active Ingredient:	By Weight
Mesotrione: 2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1,3-cyclohexanedione .....	40.0%
Other Ingredients: .....	60.0%
<b>TOTAL:</b> .....	<b>100.0%</b>

Contains 4 lbs. active ingredient mesotrione per gallon.

## KEEP OUT OF REACH OF CHILDREN CAUTION

FIRST AID	
<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>Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>Do not give anything by mouth to an unconscious person.</li> </ul>
<b>IF ON SKIN OR CLOTHING</b>	<ul style="list-style-type: none"> <li>Take off contaminated clothing.</li> <li>Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF INHALED</b>	<ul style="list-style-type: none"> <li>Move person to fresh air.</li> <li>If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>IF IN EYES</b>	<ul style="list-style-type: none"> <li>Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
Emergency phone numbers	(800) 222-1222 Poison Control Center (human health) (800) 424-9300 CHEMTREC (transportation and spills)

EPA Reg. No. 60063-XX  
Net Contents: \_\_\_\_\_ [gallons] [gal.] [\_\_\_\_ [L] [liters]]  
[Lot number / Label Date Code]

EPA Est. No. \_\_\_\_\_  
[Lot no. begins with xx]

**Manufactured for:**  
Sipcam Agro USA, Inc.  
2525 Meridian Parkway, Suite 350  
Durham, NC 27713

Read the [entire] label [carefully] before [using this product.] [opening the container].  
See additional Precautionary Statements and Directions For Use inside [the] book[let].

**OPTIONAL LANGUAGE FOR LABEL**

[Pull][Peel] back [book] [label] here]  
[Application Type AG Agricultural]  
[Application Type T[/O] [Turf] [& Ornamental]]  
[Formulated in the United States of America, with U.S. and imported ingredients.]  
[Product of \_\_\_\_\_ ] [Note: if manufactured in a country other than U.S., country name will appear here]  
[Herbicide]

**PRECAUTIONARY STATEMENTS**  
**Hazards to Humans and Domestic Animals**

**CAUTION:** Harmful if swallowed or absorbed through skin. 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.

**Personal Protection Equipment (PPE) Applicators and Other Handlers must wear:**

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves made of barrier laminate, butyl rubber  $\geq 14$  mils, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, natural rubber  $\geq 14$  mils, polyethylene, polyvinyl chloride (PVC)  $\geq 14$  mils, or Viton  $\geq 14$  mils

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

**USER SAFETY RECOMMENDATIONS**

**Users should:**

- Wash hands thoroughly with soap and water after handling and 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 and wash contaminated clothing before reuse.
- 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 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**Environmental Hazards**

Do not apply directly to water or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate.

**Surface Water Advisory**

This product may contaminate water through drift or spray in wind. This product has a high potential for runoff for several weeks after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. 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 for contamination of water from runoff. Runoff of this product will be

reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

## 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.

### AGRICULTURAL USE REQUIREMENTS

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

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

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

- coveralls
- shoes plus socks
- chemical-resistant gloves made of barrier laminate, butyl rubber  $\geq 14$  mils, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, natural rubber  $\geq 14$  mils, polyethylene, polyvinyl chloride (PVC)  $\geq 14$  mils, or Viton  $\geq 14$  mils

### NON-AGRICULTURAL USE REQUIREMENTS

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

**Do not enter treated areas without protective clothing until sprays have dried.**

## PRODUCT INFORMATION

This product is a systemic pre-emergence and post-emergence herbicide for selective contact and residual control of broadleaf weeds in field corn, seed corn, yellow popcorn, sweet corn, sorghum (grain and sweet), and sugarcane. If used pre-emergence, weeds take up the product through the soil during emergence. Dry weather conditions can reduce pre-emergent effectiveness of this product. If at least 1/4-inch of rainfall does not occur within 7-10 days of application, rotary hoeing will activate the product. If used post-emergence, weeds take up the product through treated foliage and stop growing soon after application. It may take up to two weeks for weeds to die. This product is absorbed by soil and/or through foliage of emerged weeds.

This product will not control most species of grass weeds. This product can be tank-mixed with other herbicides registered to control grass weeds (see tank-mix information in this label for additional information). This product can be used in combination with a burndown herbicide prior to planting to provide weed control in field corn, seed corn, yellow popcorn, and sweet corn.

## RESISTANCE MANAGEMENT

Naturally occurring biotypes of certain broadleaf weed species have become resistant to triazines, glyphosate, PPO, HPPD, and ALS inhibiting herbicides. The effectiveness of this product is not affected by the presence of biotype weed species that are resistant to triazines, glyphosate, PPO or ALS inhibiting herbicides.

To prevent the risk of weeds developing resistance to this product in corn, always use full specified label rates. When applying this product post-emergence after a mesotrione-containing pre-emergence herbicide, always add atrazine as a tank mix partner. Do not apply more than 0.24 lb. of mesotrione active ingredient per acre of corn per year (equivalent to 7.7 fl. oz. per acre per year of this product). If additional herbicide must be applied, use an herbicide with a different mode of action - a product other than a HPPD inhibitor (Group 27 Herbicide). Apply this product at full label rates to prevent selection for, or population shifts toward, marginally resistant weed species and/or species biotypes.

For resistance management, Sipcam Mesotrione 4L is a Group 27 herbicide. Any weed population may contain or develop plants naturally resistant to this product and other Group 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 this product or other Group 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 a 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 population 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 mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting or 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 the 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 Sipcam Agro at 919-226-1195.

### INTEGRATED PEST (WEED) MANAGEMENT

Integrate this product into an overall weed and pest management strategy whenever the use of an herbicide is required. Practices known to reduce weed development (tillage, crop competition) and herbicide use (weed scouting, proper application timing, banding) should be followed wherever possible. Consult local agricultural and weed authorities for additional IPM strategies established for your area.

### USE PRECAUTIONS

- Severe corn injury can result from post-emergent application of this product to corn treated with terbufos or chlorpyrifos.
- Applications of this product post-emergence in tank mixes with emulsifiable concentrate grass herbicides may cause severe corn injury or yield loss under adverse weather conditions.
- Severe corn injury and/or yield loss can occur if foliar post-emergent applications of this product are made to corn in a tank mix with any organophosphate or carbamate insecticide.
- Severe corn injury and/or yield loss can occur if an organophosphate or carbamate insecticide is applied foliar post-emergence within 7 days before or 7 days after applications of this product.
- When weeds are stressed due to drought, heat, lack of fertility, flooding, or prolonged cool temperatures, control can be reduced or delayed since the weeds are not actively growing. Weed escapes or regrowth may occur when applications are made under prolonged stress conditions. Optimum weed control will be obtained if an application of this product is made following label directions when weeds are actively growing.
- Applications of this product may be made with pyrethroid type insecticides (e.g., lambda-cyhalothrin).

### USE RESTRICTIONS

- **DO NOT** apply this product to white popcorn or ornamental (Indian) corn.
- **DO NOT** cultivate corn within 7 days before or after an application of this product as weed control may be reduced.
- **DO NOT** apply this product through any type of irrigation system unless specified otherwise under the specific crop section of the label.
- **DO NOT** apply this product with suspension fertilizers as the carrier.
- **DO NOT** make aerial applications of this product unless otherwise specified in the specific crop directions of this label.

### SPRAY DRIFT RESTRICTIONS

- Do not allow this product to drift to adjacent crops and non-target areas.
- Do not apply when weather conditions can cause drift to non-target areas to avoid injury to adjacent crops and vegetation.
- Do not apply when wind speed is greater than 10 mph or during a temperature inversion.
- Do not use nozzles that produce fine-medium size droplets. Use larger droplet sizes to avoid spray drift.

### AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR.

The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator is responsible for considering all of these factors when making application decisions.

### Importance of Droplet Size

The most effective way to reduce drift potential is to apply large droplets (>200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT MAY NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS! See the Aerial Application section for specific instructions regarding droplet size.



### **Controlling Droplet Size - General Techniques**

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Use the lower spray pressures specified for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Use the minimum number of nozzles that provide uniform coverage.

### **Sensitive Areas**

Apply this product when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from sensitive areas).

### **SPRAY DRIFT PRECAUTIONS FOR AERIAL APPLICATION TO CORN & SUGARCANE ONLY**

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

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

Spray must be released at the lowest height consistent with effective weed control and flight safety. For best results, each specific aerial application vehicle used must be quantifiably pattern tested for aerial application of this product initially and every year thereafter.

**USE RESTRICTION: FOR AERIAL APPLICATION USE ONLY NOZZLES PRODUCING COARSE-ULTRA COARSE DROPLETS. DO NOT USE NOZZLES PRODUCING FINE-MEDIUM SIZE DROPLETS.**

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

Do not make applications at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application must be avoided below 2 mph due to variable wind direction and high inversion potential.

Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect drift.

When making application in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

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

Apply this product when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat, for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

**AERIAL APPLICATION INSTRUCTIONS FOR CORN AND SUGARCANE**  
**Aerial applications of this product is permitted on corn and sugarcane only.**

Make aerial application with nozzles that produce coarse-ultra coarse droplets. DO NOT use nozzles producing fine- medium size droplets. Check the registration status of this product in your state before application.

Mestrione is approved for aerial application for pre-emergence and post-emergence control in corn in the states of: **Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Nebraska, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.**

Mesotrione is approved for aerial application for pre-emergence and post-emergence control in sugarcane in the states of: **Florida, Louisiana, and Texas.**

Make aerial applications in a minimum of 2 gallons water per acre.

**PRE-EMERGENCE GROUND APPLICATION INSTRUCTIONS**

Apply this product pre-emergence with a carrier volume of 10-60 gals./A.

Space spray nozzles of the same size and type uniformly to provide accurate and uniform coverage. Use medium to coarse droplet size nozzles to ensure coverage and avoid drift. Apply in a spray volume of 10-60 gals./A with water or liquid fertilizer (NOT suspension fertilizer) as the carrier. Use a pump that will maintain pump pressure of 35-40 psi at the nozzles and provide proper agitation within the tank to keep the product dispersed. Lower pressures can be used with extended range or drift reduction nozzles. Maintain constant agitation until spraying is complete, even if stopping for brief periods of time. If agitation is stopped for longer than 5 minutes, re-suspend the spray solution by running on full agitation prior to spraying.

**POST-EMERGENCE GROUND APPLICATION INSTRUCTIONS**

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

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

Apply with flat fan nozzles 80° - 100° for optimum post-emergent coverage. Do not use flood jet nozzles or controlled droplet application equipment for post-emergence applications.

Angle nozzles forward 45° to enhance product penetration and provide better coverage. In-line strainers and nozzle screens must be a minimum of 50-mesh or coarser.

Maintain constant agitation until spraying is complete, even if stopping for brief periods of time. If agitation is stopped for longer than 5 minutes, re-suspend the spray solution by running on full agitation prior to spraying.

### **Post-Emergence Adjuvants**

#### **USE DIRECTIONS WITH SPRAY ADDITIVES**

Any adjuvant used with this product must meet the certification program requirements of the Chemical Producers and Distributors Association (CPDA).

#### **Adjuvant Use Post-Emergence to Field and Seed Corn**

After corn has emerged, add 1.0 gal./100 gals. of water (1.0% v/v) Crop Oil Concentrate (COC) to the spray solution. 1 qt./100 gals. of water (0.25% v/v) of a nonionic surfactant (NIS) can be used, but better weed control is achieved with the use of a COS versus a NIS.

DO NOT use methylated seed oil (MSO) or MSO adjuvant blends for post-emergence applications of this product or severe crop injury can occur.

DO NOT use MSO adjuvants unless it is specifically permitted in tank mixtures with this product for Corn section of this label, or if permitted by a state-specific supplemental label.

In addition to COC, add 2.5% (v/v) a spray grade UAN (e.g., 28-0-0) to the spray solution, or 8.5 lbs./100 gals. AMS, except if precluded elsewhere on this label or a state-specific supplemental label.

#### **Adjuvant Use Post-Emergence to Sweet and Yellow Corn**

DO NOT use UAN or AMS with this product on sweet and yellow corn as severe crop injury can occur.

Use a nonionic surfactant (NIS) instead of a COC to reduce the likelihood of crop injury. COCs will maximize weed control under dry growing conditions, but will significantly injure crops under lush growing conditions. To optimize weed control, add atrazine wherever rotational or local atrazine restrictions allow.

### **Pre-Emergence Adjuvant Use**

Any adjuvant approved for use on agriculture is permitted when making pre-plant or pre-emergence applications this product. MSO adjuvants perform better than COC and NIS adjuvants under pre-plant/pre-emergence conditions. UAN and AMS adjuvants will provide better weed control than not using any adjuvant. If this product is being tank-mixed with another registered herbicide, refer to the tank mix partner label for adjuvant precautions and restrictions.

### SPRAY EQUIPMENT CLEANING

Follow the procedures below for cleaning equipment before spraying a crop other than corn. Mix only as much spray solution as is needed.

1. Flush tank, hoses, boom, and nozzles with clean water.
2. Prepare cleaning solution of 1 gal. of household ammonia per 25 gals. of water. Commercial spray tank cleaners can be used in lieu of ammonia/water solution. Using a pressure washer, clean the inside of the spray tank with the cleaning solution. Wash ALL parts of the tank, including the inside top surface. If a pressure washer is not available, 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 spray and recirculate the cleaning solution for a minimum of 15 minutes. All visible deposits of spray solution must be removed from the spray tank before making any other applications.
3. Flush hoses, spray lines, and nozzles with cleaning solution for a minimum of 1 minute.
4. Dispose of rinsate from steps 1-3 in an appropriate manner.
5. Repeat steps 2-5.
6. Remove nozzles, screens, and strainers and clean separately in the ammonia solution after completing the previous steps.
7. Rinse the complete spray system with clean water.

### MIXING INSTRUCTIONS

See the **Crop Use Directions** sections of the label for specific tank mix instructions.

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.

### MIXING RESTRICTIONS

- DO NOT exceed any dosage rates specified on labels.
- DO NOT mix this product with any product containing a label prohibition against such mixing.
- DO NOT tank mix this product with any other insecticide, fungicide, fertilizer, or adjuvant not specified on this label without first testing compatibility, as poor mixing can occur. Test compatibility on a small scale (such as a jar test) before actual tank mixing.

### MIXING PROCEDURE

1. Use sprayers in good operating condition with good agitation. Ensure that the sprayer is cleaned according to the mix product label instructions to adding this product. For post-emergence applications, use clean water only for the spray solution. Ensure that all in-line strainers and nozzle screens in the sprayer are 50-mesh or coarser. DO NOT use screens finer than 50-mesh.
2. Use liquid fertilizer (NOT suspension fertilizer) as the carrier for pre-emergence applications.
3. Start filling spray tank or pre-mix tank with clean water and begin agitation. Maintain constant agitation.
4. When sprayer or pre-mix is half full of water, add AMS, maintaining agitation until dispersed.
5. Add this product slowly and agitate until completely dissolved. Wait at least 1 minute after the last of this product has been added to allow for complete dispersion. If using cold water, a longer agitation period may be required to ensure adequate dispersing.
6. If tank mixing, add the tank mix product.
7. Add the adjuvant and UAN, if needed, and continue to fill tank to desired level with water.

### WEED CONTROL TABLE

Partial control means either erratic control (good to poor control) or control that is below what is generally accepted as acceptable control for commercial weed control.

For best post-emergence results, apply this product to actively growing weeds.

For best pre-emergence results, avoid applying this product in dry weather as residual weed control may be reduced. If irrigation is available, apply ½-1-inch water after pre-emergence application. If irrigation is not available, make a uniform shallow cultivation as soon as weeds emerge.

Applying this product alone or in a tank-mix with atrazine will not provide consistent or adequate control of weeds that are resistant to post-emergence HPPD inhibiting herbicides. Refer to the crop sections of the label for specific use directions and application rates.

**Table 1: Post-Emergence Applications**

Common Name	Scientific Name	Rate of Sipcam Mesotrione 4L	
		3 Fl. Oz./A Applied Alone	2.5-3.0 fl. oz./A + Atrazine
Apply to Weeds <5" Tall^			
Amaranth, palmer	<i>Amaranthus palmeri</i>	PC+	C+
Amaranth, powell	<i>Amaranthus powellii</i>	C	C
Amaranth, spiny	<i>Amaranthus spinosus</i>	C	C
Atriplex	<i>Chenopodium orach</i>	C	C
Broadleaf signalgrass	<i>Urochloa platyphylla</i>	C+	C+
Buckwheat, wild	<i>Polygonum convolvulus</i>	PC	PC
Buffalobur	<i>Solanum rostratum</i>	C	C
Burcucumber	<i>Sicyos anquilatus</i>	PC	C+
Carpetweed	<i>Mollugo verticillata</i>	C	C
Carrot, wild	<i>Daucus carota</i>	PC	C
Chickweed, common	<i>Stellaria media</i>	C	C
Cocklebur, common	<i>Xanthum strumarium</i>	C	C
Crabgrass, large	<i>Digitaria sanguinalis</i>	C+	C+
Dandelion	<i>Taraxacum officinale</i>	NC	PC
Dock, curly	<i>Rumex crispus</i>	PC	PC
Galinsoga	<i>Galinsoga parviflora</i>	C	C
Hemp	<i>Cannabis sativa</i>	C	C
Horsenettle	<i>Solanum carolinense</i>	PC	C
Jimsonweed	<i>Datura stramonium</i>	C	C
Horseweed (marestail)	<i>Conyza canadensis</i>	PC	C
Knotweed, prostrate	<i>Polygonum aviculare</i>	PC	PC
Kochia	<i>Kochia scoparia</i>	PC+	C+
Lambsquarters, common	<i>Chenopodium album</i>	C	C
Mallow, Venice	<i>Hibiscus trionum</i>	NC	C
Morningglory, entireleaf	<i>Ipomoea hederacea</i>	PC	C
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	PC	C
Morningglory, pitted	<i>Ipomoea lacunosa</i>	PC	C
Mustard, wild	<i>Brassica kaber</i>	C	C
Nightshade, black	<i>Solanum nigrum</i>	C	C
Nightshade, Eastern black	<i>Solanum ptychanthum</i>	C	C
Nightshade, hairy	<i>Solanum sarrachoides</i>	C	C
Nutsedge, yellow	<i>Cyperus esculentus</i>	PC	PC
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C	C
Pigweed, tumble	<i>Amaranthus albus</i>	C	C
Pokeweed, common	<i>Phytolacca americana</i>	PC	PC
Potatoes, volunteer	<i>Solanum spp.</i>	C	C
Pusley, Florida	<i>Richardia scabra</i>	C+	C+

Ragweed, common	<i>Ambrosia artemisiifolia</i>	PC	C
Ragweed, giant	<i>Ambrosia trifida</i>	C+	C
Sesbania, hemp	<i>Sesbania exaltata</i>	C	C
Sida, prickly (teaweed)	<i>Sida spinosa</i>	NC	C+
Smartweed, ladysthumb	<i>Polygonum persicaria</i>	C+	C
Smartweed, pale	<i>Polygonum lapathifolium</i>	C+	C
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	C+	C
Sunflower, common	<i>Helianthus annuus</i>	C	C
Thistle, Canada	<i>Cirsium arvense</i>	NC	PC
Velvetleaf	<i>Abutilon theophrasti</i>	C	C
Waterhemp, common	<i>Amaranthus rudis</i>	C+	C
Waterhemp, tall	<i>Amaranthus tuberculatus</i>	C+	C

^Weeds can be controlled at larger than listed sizes; however, to protect crop yield, manage weed resistance, and provide effective control, treat weeds before they reach 5" tall.

+Apply before weeds exceed 3" tall.

C = Control

NC = Not Controlled

PC = Partial Control

**Table 2: Pre-Emergence Applications**

Common Name	Scientific Name	Rate of Sipcam Mesotrione 4L	
		3 Fl. Oz./A Applied Alone	2.5-3.0 Fl. Oz./A + Atrazine
Amaranth, palmer	<i>Amaranthus palmeri</i>	C	C
Amaranth, powell	<i>Amaranthus powellii</i>	C	C
Amaranth, spiny	<i>Amaranthus spinosus</i>	C	C
Broadleaf signalgrass	<i>Urochloa platyphylla</i>	PC	PC
Buffalobur	<i>Solanum rostratum</i>	C	C
Carpetweed	<i>Mollugo verticillata</i>	C	C
Chickweed, common	<i>Stellaria media</i>	C	C
Cocklebur, common	<i>Xanthum strumarium</i>	PC	C
Crabgrass, large	<i>Digitaria sanguinalis</i>	PC	PC
Galinsoga	<i>Galinsoga parviflora</i>	C	C
Jimsonweed	<i>Datura stramonium</i>	C	C
Kochia	<i>Kochia scoparia</i>	PC	C
Lambsquarters, common	<i>Chenopodium album</i>	C	C
Morningglory, entireleaf	<i>Ipomoea hederacea</i>	PC	C
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	PC	C
Morningglory, pitted	<i>Ipomoea lacunosa</i>	PC	C
Nightshade, Eastern black	<i>Solanum ptychanthum</i>	C	C
Nightshade, hairy	<i>Solanum sarrachoides</i>	C	C
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C	C
Pigweed, tumble	<i>Amaranthus albus</i>	C	C
Ragweed, common	<i>Ambrosia artemisiifolia</i>	C	C
Ragweed, giant	<i>Ambrosia trifida</i>	PC	C
Smartweed, ladysthumb	<i>Polygonum persicaria</i>	C	C
Smartweed, pale	<i>Polygonum lapathifolium</i>	C	C
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	C	C
Sunflower, common	<i>Helianthus annuus</i>	PC	C
Velvetleaf	<i>Abutilon theophrasti</i>	C	C
Waterhemp, common	<i>Amaranthus rudis</i>	C	C
Waterhemp, tall	<i>Amaranthus tuberculatus</i>	C	C

C = Control

NC = Not Controlled

PC = Partial Control

### ROTATIONAL CROP INTERVALS

Follow the crop rotation intervals listed below when using this product. If this product is tank-mixed with other products, follow the most restrictive product's crop rotation interval.

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

\*Plant these rotation crops ONLY if the criteria listed below have been met. If all criteria have NOT been met, plant peas and snap beans a minimum of 18 months following applications of this product.

- A minimum of 20" of rainfall plus irrigation has occurred between application and planting of the rotational crop.
- Soil pH is >6.0.
- 3 fl. oz./A or less has been applied no later than June 30th the year preceding rotational crop planting.
- No other HPPD herbicides (e.g., Mesotrione, Mesotrione + Atrazine, Mesotrione + S-metolachlor + Glyphosate, S-metolachlor + Atrazine + Mesotrione, S-metolachlor + Mesotrione, Topramezone, Isoxaflutole, Tembotrione + Thiencarbazone-methyl, Isoxaflutole + Thiencarbazone-methyl, or Tembotrione) were applied the year prior to planting peas and snap beans.
- Do not plant peas or snap beans on sand, sandy loam, or loamy sand soils in Minnesota or Wisconsin.

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## CROP USE DIRECTIONS

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### CORN

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Apply this product by ground for pre-emergence or post-emergence weed control in field corn, seed corn, yellow popcorn, and sweet corn. Apply to corn up to 30" tall or up to the 8-leaf stage of corn growth to control broadleaf and grass weeds listed in Tables 1 and 2.

Aerial applications of this product can be made pre-emergence or post-emergence in the following states: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming. **Check the registration status of this product in your state before application.**

See seed company instructions for use on field corn inbred lines. Special adjuvant restrictions must be followed for post-emergence applications of this product in yellow popcorn or sweet corn (see the Spray

Additives section of this label). Do not apply this product to white popcorn or ornamental (Indian) corn.

Post-emergence application of this product to yellow popcorn and sweet corn hybrids may cause crop bleaching. Bleaching is transitory and will not affect final yield or quality. Herbicide sensitivity, however, can vary widely in yellow popcorn and sweet corn, and all hybrids of these have not been tested. Contact your local popcorn/sweet corn company, Fieldman, or University Specialist to learn about hybrid recommendations before making a post-emergence application to yellow popcorn or sweet corn. Do not include nitrogen based adjuvants (UAN or AMS) when making post-emergence applications of this product to yellow popcorn or sweet corn.

Temporary transient bleaching may occur in field corn treated with this product post-emergence under extreme weather conditions or when the crop is under stress. Field corn will quickly outgrow this condition and develop normally.

### **USE RESTRICTIONS**

- Do not apply more than 7.7 fl. oz. (0.24 lb. mesotrione AI) of this product per year.
- Do not make more than 2 applications per year.
- Do not exceed 3.0 fl. oz. (0.094 lb. AI/A) in a single post-emergence application.
- Do not make a second application of this product within 14 days of the first application.
- Do not feed or harvest forage, grain, or stover within 45 days after application.

### **Sipcam Mesotrione 4L Alone**

#### **Post-Emergence Applications**

Apply 3.0 fl. oz./A per application. Always add an appropriate adjuvant to the spray tank (see the **Spray Additives** section of this label).

Apply to actively growing weeds. See Table 1 for a complete list of weeds controlled. Susceptible weeds that emerge post- application may be controlled after the herbicide is absorbed into the soil. This product will not control most grass weeds.

Two post-emergence applications of this product may be made under the following restrictions:

- Only one post-emergence application may be made if this product has been applied pre-emergence.
- Do not exceed a total of 7.7 fl. oz./A (0.24 lb. AI/A) per year.
- Do not make a second application within 14 days of the first application.
- Applications made at rates lower than 3.0 fl. oz./A. (0.094 lb. AI/A) post-emergence may not provide adequate weed control and no residual control.
- Do not exceed a total of 6.0 fl. oz./A (0.19 lb. AI/A) for the two post-emergence applications.
- If a post-emergence application of this product was made to ground that received a pre-emergence application of another mesotrione-containing herbicide, atrazine must be tank mixed with this product.
- If mixing this product with atrazine, do not apply to corn taller than 12".
- Treat corn up to 30" tall or up to the 8-leaf stage of growth.
- Do not harvest, forage, or stover within 45 days post-application.

#### **Pre-Emergence Applications**

Apply 6.0-7.7 fl. oz./A (0.188-0.24 lb. AI/A) by ground sprayer in 10-30 gals. of water per acre to control broadleaf weeds (up to 80 gals. if applied with liquid fertilizer). See Table 2 for a complete list of weeds controlled. This product can be tank mixed with other approved pre-emergence grass herbicides to control grasses. Refer to the tank mix section for a list of tank-mix partners.



**Sipcam Mesotrione 4L Tank Mixtures**

Apply this product in tank mix with other registered herbicides to improve spectrum of weed control in burndown, post-emergence, or pre-emergence applications. These tank mixtures can also be used to include a different mode of action herbicide to control and manage the development of resistant weed biotypes.

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.

**Burndown Applications**

Apply this product in a tank mixture with other registered herbicides for burndown and residual weed control.

Apply 3.0 fl. oz./A of this product with the tank mix partners listed below for improved broadleaf weed control with limited residual control before planting corn and before corn emergence. For better residual control, apply this product at a rate of 6.0 - 7.7 fl. oz./A with the products listed below. Use the adjuvant system specified by the burndown herbicide. Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled

Tank Mix Partner	Use Directions
Paraquat dichloride, Glyphosate, Dicamba and/or 2,4-D products	See Table 2 for a list of weeds controlled.

**Post-Emergence Applications**

See a list of tank mixtures below that can be applied after corn has emerged. Do not apply less than 3.0 fl. oz./A of this product unless specified on this label or on a state-specific supplemental label, as a loss of residual control can occur.

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

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

Tank Mix Partner	Use Directions
Atrazine products	See Table 1 for application rates and list of weeds controlled. This mixture will control additional weeds. See product label for list of weeds controlled.
Nicosulfuron products	This mixture will provide additional grass control. Refer to the product label for a list of weeds controlled.
Bentazon products	This mixture will provide additional broadleaf weed control. Refer to the product label for a list of weeds controlled.
Rimsulfuron + Thifensulfuron premix products Rimsulfuron + Atrazine + Nicosulfuron premix products	This mixture will provide additional weed control. Refer to the product label for a list of weeds controlled.

Metolachlor products	<p>Regarding tank mix adjuvants, it is advised to use non-nitrogen based products; or if using nitrogen based products (like UAN or AMS) apply as a post-directed spray to limit contact with crop foliage.</p> <p>To minimize risk of crop injury, the user may use nonionic surfactants (NIS) instead of the crop oil concentrates (COC). Control of emerged weeds can be reduced due to substandard adjuvant effect or poor weed coverage.</p> <p>This mixture will control additional weeds. See product label for list of weeds controlled.</p>
Metolachlor + Atrazine premix products	<p>Do not use nitrogen based adjuvants (UAN or AMS); apply as post-directed spray.</p> <p>Do not use crop oil concentrate (COC); use a nonionic surfactant (NIS) to avoid crop injury. Control of emerged weeds can be reduced due to the adjuvant effect on weed coverage. This mixture will control additional weeds. See product label for list of weeds controlled.</p>
Bromoxynil products	<p>This mixture will provide additional broadleaf weed control. Refer to product labels for use rates.</p>
S-metolachlor + Atrazine + Glyphosate premix products	<p>Use only on corn containing the RoundUp Ready trait. Crop death will occur if this mixture is applied to a corn hybrid that does not contain the RoundUp Ready trait.</p> <p>Do not add urea ammonium nitrate (UAN) or methylated seed oil (MSO) adjuvants to this mixture or crop injury can occur.</p>
Glufosinate products	<p>Use only on corn containing the LibertyLink<sup>®</sup> trait. Use of this mixture on corn hybrids which do not contain the Liberty Link trait will result in severe crop injury or death.</p> <p>Do not use crop oil concentrate (COC) as an adjuvant or crop injury can occur.</p>
Imazapyr + Imazethapyr premix products	<p>Use only on corn containing the Clearfield<sup>®</sup> corn trait. Use of this mixture on corn hybrids which do not contain the Clearfield<sup>®</sup> corn trait will result in severe crop injury or death</p> <p>Do not use Methylated Seed Oil (MSO) or any MSO blend with this mixture or severe crop injury can occur.</p>
Dicamba products	<p>This mixture will control additional weeds. See product label for list of weeds controlled.</p>
Prosulfuron products	<p>This mixture will control additional weeds. See product label for list of weeds controlled.</p>
Prosulfuron + Primisufuron-methyl premix products	<p>This mixture will control additional weeds. See product label for list of weeds controlled.</p>
Nicosufuron + Rimsufuron premix products Nicosufuron + Rimsufuron + Atrazine premix products	<p>This mixture will control additional weeds. See product label for list of weeds controlled.</p>
Nicosulfuron + Thifensufuron-methyl premix products	<p>This mixture will control additional weeds. See product label for list of weeds controlled.</p>

Glyphosate products	<p>Use only on corn containing the RoundUp Ready trait. Use of this mixture on corn hybrids that do not contain the RoundUp Ready trait will result in crop death.</p> <p>Add spray-grade ammonium sulfate (AMS) at a rate that delivers 8.5-17.0 lbs. of AMS/100 gals. of water.</p> <p>If the glyphosate product calls for an adjuvant in addition to AMS, add 0.25-0.5% v/v (1-2 quarts/100 gallons) of a non-ionic surfactant (NIS).</p> <p>Do not add urea ammonium nitrate (UAN), crop oil concentrate (COC) or methylated seed oil (MSO) adjuvants to this tank mixture or crop injury can occur.</p>
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**Pre-Emergence Applications**

Apply 5.3-7.7 fl. oz./A of this product in tank mixture with the registered herbicides listed below for pre-emergence residual weed control. Refer to Table 2 for a list of weeds controlled by this product and the combination of this product + Atrazine.

The following products can be tank mixed with the product for pre-emergence applications. 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.

Tank Mix Partner	Use Directions
Atrazine, Acetochlor, Dimethanamid-P, Metolachlor, S-metolachlor, Pendimethalin, Acetochlor + Atrazine, Dimethanamid-P + Atrazine, S-metolachlor + Atrazine, S-metolachlor + Atrazine + Glyphosate, Metolachlor + Atrazine products	See Table 2 for a list of weeds controlled.

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**SORGHUM (GRAIN and SWEET)**

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**Pre-Emergence Applications**

Make pre-emergence or pre-plant non-incorporated applications of this product up to 21 days before planting sorghum for control or partial control of the weeds listed in Table 2.

Apply 6.0-6.4 fl. oz./A broadcast non-incorporated application prior to sorghum emergence. Making the application less than 7 days before planting will increase the risk of plant injury, especially if rainfall or irrigation occurs after the application. Injury symptoms include temporary bleaching of newly emerged leaves. Making application of this product 8- 21 days prior to planting will decrease risk of crop injury.

If this product is applied prior to planting, minimize disturbance of soil treated with herbicide during the planting process in order to reduce the potential for weed emergence.

If emerged weeds are present at the time of pre-emergence application, use 0.25% v/v of a non-ionic surfactant (NIS) adjuvant or 1% v/v of crop oil concentrate (COC) and add it to the spray solution. A spray-grade UAN applied at a rate of 2.5% v/v or 8.5 lbs./100 gallons of spray solution of ammonium sulfate (AMS) can be added to the spray solution in addition to the COC or NIS.

**USE RESTRICTIONS**

- DO NOT apply more than 6.4 fl. oz./A (0.20 lb. AI/A) per year.

- DO NOT make more than one application per year.
- DO NOT apply to emerged sorghum or severe crop injury can occur.
- DO NOT use this product in the production of forage sorghum, sudangrass, sorghum-sudangrass hybrids, or dual purpose sorghum.
- DO NOT apply to sorghum that is grown on coarse textured soils (e.g., sandy loam, loamy sand, sand).
- Texas Restriction: Do not apply to sorghum grown south of Interstate 20 (I-20) and east of Highway 277.

### **Post-Emergence Applications**

Apply this product post-directed to grain sorghum to control and/or partially control weeds listed in Table 1. Apply to actively growing weeds for optimal control.

Apply 3.0 fl. oz./A post-directed application when sorghum is at least 8" tall. Make the application by directing the spray between crop rows, and toward the base of the plant. Direct application of this product onto foliage can result in crop injury including temporary bleaching. If leaves do bleach, newly emerged leaves following application will not be affected.

Use 0.25% v/v of a non-ionic surfactant (NIS) adjuvant or 1% v/v of crop oil concentrate (COC) and add it to the spray solution. A spray-grade UAN applied at a rate of 2.5% v/v or 8.5 lbs./100 gallons of spray solution of ammonium sulfate (AMS) can be added to the spray solution in addition to the COC or NIS.

This product can be tank-mixed with herbicides registered for use on sorghum to improve weed control. These tank-mixtures can also include a herbicide with a different mode of action to help control or manage the development of resistant weed biotypes.

### **USE RESTRICTIONS**

- DO NOT make more than one post-directed application.
- DO NOT apply more than 3.0 fl. oz./A (0.09 lb. AI/A) post-directed.
- DO NOT apply more than 6.4 fl. oz./A (0.20 lb. AI/A) per year.
- DO NOT apply broadcast over-the-top to emerged sorghum or severe crop injury can occur.
- DO NOT harvest sorghum for forage for 30 days following application.
- DO NOT harvest for grain or stover for 60 days following application.
- DO NOT apply after the sorghum seedhead emerges.
- DO NOT use in the production of forage sorghum, sudangrass, or sorghum-sudangrass hybrids.

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## **SUGARCANE**

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Apply this product by ground for pre-emergence, post-emergence over-the-top or post-emergence direct weed control in sugarcane.

This product may be applied aerially for pre-emergence and post-emergence weed control in the states of: **Florida, Louisiana, and Texas**. Check the registration status of this product in your state before application.

### **Pre-Emergence Applications**

Apply 6.0-7.7 fl. oz./A of this product to control weeds listed in Table 2. Make application after the planting of plant-cane or after harvest of ratoon-cane. If weeds are emerged at the time of application, add a crop oil concentrate (COC) type adjuvant at 1% v/v OR a nonionic surfactant (NIS) type adjuvant at 0.25% v/v to the spray solution. In addition to the COC or NIS, a spray grade UAN at a rate of 2.5% v/v OR ammonium sulfate (AMS) at a rate of 8.5 lbs./100 gals. of spray solution can be added to the

spray solution. Tank mix an atrazine or ametryn product with this product to improve weed control. Refer to the tank mix partner label for specific rates and use directions.

### **Post-Emergence Applications**

Apply 3.0 fl. oz./A of this product to control weeds listed in Table 1. Apply as a post-over-the-top or as a post-directed spray to the base of the sugarcane. If a pre-emergence application was made earlier in the season, only one single post-emergence application can be made. If no pre-emergence application was made earlier in the season, then both a post-over-the-top and a post-directed spray application can be made. For optimum weed control, apply to actively growing weeds.

Add either a crop oil concentrate (COC) adjuvant at 1% v/v OR a nonionic surfactant (NIS) adjuvant to the spray solution. In addition to the COC or NIS, use a spray grade UAN (e.g., 28-0-0) at 2.5% v/v OR ammonium sulfate (AMS) at 8.5 lbs./100 gals. spray solution to improve weed control. For additional post-emergence weed control, tank mix this product with an atrazine, asulam, and/or trifloxysulfuron-sodium product. Refer to the tank mix product label for specific rate and use directions.

### **USE RESTRICTIONS:**

- DO NOT apply more than 7.7 fl. oz./A (0.24 lb. AI/A) in a pre-emergence application.
- DO NOT apply more than 3.0 fl. oz./A (0.09 lb. AI/A) in a post-emergence application.
- DO NOT make more than 2 applications per year. If a pre-emergence application is made, only one post-emergence application can be made.
- DO NOT make two applications less than 14 days apart.
- DO NOT apply more than 10.7 fl. oz./A (0.33 lb. AI/A) per year.
- DO NOT harvest sugarcane within 114 days following a post-over-the-top treatment (114-day PHI).
- DO NOT harvest sugarcane with 100 days following a post-directed application (100-day PHI).

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## **TURF**

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Make pre- and post-emergence applications to provide selective contact and residual control of turfgrass weeds. This product is approved for use on commercial and residential turfgrasses. Non-crop area use sites include golf courses, sod farms\*, athletic fields, parks, residential and commercial properties, cemeteries, airports, and lawns.

**\*Not for use in Arizona on grass grown for sod.**

If applied pre-emergence, this product is absorbed during weed emergence from the soil. This product controls weeds prior to and during seeding of certain turfgrasses during turf renovation (see **New Seedings**). If applying this product pre-emergence application to established turf, tank mix this product with other pre-emergence herbicides such as a proflaminate product for longer residual and broad spectrum control.

Pre-emergence activity and control will be reduced in dry soil conditions. Activate this product with 0.15 inches of irrigation if rain does not fall within 10 days of applying this product.

Post-emergent control is obtained through soil absorption and contact with foliage; growth ceases, weeds whiten from loss of chlorophyll, and die within three weeks. This product treatments cause temporary whitening of foliage during treatment. Whitening typically occurs 5-7 days after application and lasts for several weeks. A second application to the same site will cause less whitening of plant tissue. Use a non-ionic surfactant with this product when making post-emergence applications.

The maximum single application rate allowed is 8 fl. oz. /acre. The maximum total application of this product is 16 fl. oz. /acre per year (0.50 lb. mesotrione ai). The maximum number of application at the maximum rate is two applications. Retreatment Interval: Repeat application of this product after 2-3

weeks to improve post-emergence weed control.

#### **Use Precautions:**

- 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.
- Apply this product at reduced rates of 4 fl. oz./A or less if tank mixing with atrazine, bentazon, or simazine. Before tank mixing this product with other herbicides, conduct a compatibility, safety, and efficacy test prior to treating larger areas. See tank mix partner labels for directions and precautions. The most restrictive directions of the tank mix partner label apply.
- To avoid injury to sensitive plants, thoroughly clean application equipment after use.
- To avoid injury to sensitive species, keep traffic out of treated areas until sprays have dried. Irrigate soil lightly to move this product from turf foliage before resuming normal irrigation.

#### **Use Restrictions:**

- Residential Lawns: Do not make broadcast applications of this product for pre- and post-emergent weed control unless the residential lawn is being reseeded and/or renovated as whitening of some turfgrasses may occur.
- DO NOT overspray or allow spray to drift to ornamentals or flower beds and gardens. Roses and daylilies are particularly sensitive to this product.
- DO NOT apply more than 16 oz. of this product (0.50 lb. mesotrione) per acre per year.
- DO NOT plant any crop other than turfgrass for 18 months post-application to avoid turfgrass injury.
- DO NOT apply organophosphate or carbamate insecticides within 7 days of applying this product.
- DO NOT apply this product through any type of irrigation system.
- DO NOT make aerial applications of this product.
- DO NOT use clippings treated with this product to mulch trees or vegetable/flower gardens.
- DO NOT apply this product on Bentgrass, *Poa annua*, kikuyugrass, zoysiagrass, seashore paspalum and bermudagrass if plant injury is unacceptable. Maintain a 5-foot buffer between treated areas and bentgrass or *Poa annua* greens.
- DO NOT apply this product over the top of exposed roots of trees and ornamentals.
- DO NOT apply this product to golf course putting greens; maintain a minimum of a 5-foot buffer between putting greens and treated areas.
- **Not for use in Arizona on grass grown for sod.**
- DO NOT apply more than 16 oz. of this product per acre per year (equivalent to 0.5 lb. mesotrione per acre per year).

#### **PRE-EMERGENCE APPLICATIONS**

Apply 4-8 fl. oz. of this product per acre in 30 gallons of water per acre prior to seed germination yet as close to seed germination as possible. Combine this product with another pre-emergence herbicide such as a prodiamine product for extended control of crabgrass and foxtail.

#### **USE PRECAUTIONS:**

- This product is more effective on established turf when applied post-emergence unless it is combined with another soil active herbicide.

#### **USE RESTRICTIONS:**

- DO NOT exceed 8 fl. oz. of this product per acre per application to Kentucky bluegrass (*Poa pertensis*), Centipedegrass (*Eremochloa ophiuroides*), Buffalograss (*Buchloe dactyloides*), or Tall fescue (*Festuca arundinacea*) (0.26 lbs. AI/acre).
- DO NOT exceed 5 fl. oz. of this product per acre per application to perennial ryegrass (*Lolium perenne*), fine fescues (creeping red, chewings and hard) *Festuca* spp., or mixed stands that consist of >50% perennial ryegrass and/or fine fescue (0.16 lbs. AI/acre).

- DO NOT exceed 4 fl. oz. (0.13 lbs. AI/acre) of this product per acre per application to St. Augustinegrass (*Stenotaphrum secundatum*) grown for sod.

### **NEW SEEDINGS/NEW LAWNS APPLICATIONS**

Apply 5-8 fl. oz. of this product per acre in 30 gallons of water per acre prior to or after seeding of turfgrass species listed below, except fine fescue. Applying to fine fescue can reduce grass density. This product is effective on grass seed blends that contain <20% by weight hard/fine fescue. For optimal control, apply this product at grass seeding or as close to seeding as possible.

#### **USE RESTRICTIONS:**

- Do not spray this product on newly germinated turfgrass.
- Delay application until grass has been mowed 2- 4 times and/or 4 weeks post-emergence (whichever is longer).

### **POST-EMERGENCE APPLICATION**

Apply 4-8 fl. oz. of this product per acre per application in 30 gallons of water per acre with a NIS surfactant. Repeat application 2-3 weeks later for optimal weed control. Apply to young, actively growing weeds. Moisture stress and application to mature weeds can reduce herbicide efficacy.

### **Bentgrass (*Agrostis* spp.)/Nimbleweed (*Muhlenbergia schreberi*) Control**

Apply 5 fl. oz. of this product per acre in 30 gallons of water per acre combined with a NIS surfactant at 2-3 week intervals for a maximum of three applications. For optimal Bentgrass control, apply this product in late summer/early fall just prior to new growth.

### **St. Augustine grass (Sod uses only) and Centipedegrass Treatment**

Apply this product to established turf ONLY.

#### **USE RESTRICTIONS:**

- DO NOT exceed 4 fl. oz. (0.13 lb. AI/A) of this product per application if tank mixing with atrazine or simazine.
- DO NOT exceed 0.5 lb. atrazine or simazine active ingredient per application. See atrazine/simazine labels for precautions and restrictions.

### **Dormant Bermudagrass Applications**

Apply 5 fl. oz. per acre of this product to control winter weeds listed in the **Weeds Controlled** table below. Repeat application 2-3 weeks later. Applying this product to semi-dormant turf will cause bermudagrass whitening.

### **SPOT APPLICATIONS**

Mix 1 teaspoon (0.17 oz or 5 mL) of this product + 3 teaspoons (0.5 oz or 15 mL) of NIS in 2 gallons. Apply this mixture at 1 gallon/1000 sq. ft.

**WEEDS CONTROLLED WITH PRE-EMERGENCE APPLICATIONS OF THIS PRODUCT**

Apply this product with a grass pre-emergence herbicide such as a prodiamine product, except when used to control weeds in new seedings. This product will control the following weeds using pre-emergence application:

<b>WEEDS CONTROLLED – PRE-EMERGENCE APPLICATIONS</b>	
Barnyardgrass ( <i>Echinochloa crusgalli</i> )	Foxtail (Yellow) ( <i>Setaria glauca</i> )
Bentgrass (Creeping) ( <i>Agrostis stolonifera</i> )	Galinsoga ( <i>Galinsoga ciliate</i> )
Bluegrass (Annual) ( <i>Poa annua</i> )*	Lambsquarters ( <i>Chenopodium album</i> )
Buckhorn Plantain ( <i>Plantago lanceolata</i> )	Pigweed (Redroot)( <i>Amaranthus retroflexus</i> )
Carpetweed ( <i>Mollugo verticillata</i> )	Pigweed (Smooth) ( <i>Amaranthus hybridus</i> )
Chickweed (Common) ( <i>Stellaria media</i> )	Purslane (Common) ( <i>Portulaca oleracea</i> )
Chickweed (Mouseear) ( <i>Cerastium vulgatum</i> )	Shepherd’s purse ( <i>Capsella bursa-pastoris</i> )
Clover (Large Hop) ( <i>Trifolium aureum</i> )	Smartweed (Pale) ( <i>Polygonum lapathifolium</i> )
Clover (White) ( <i>Trifolium repens</i> )	Smartweed (Pennsylvania) ( <i>Polygonum pensylvanicum</i> )
Crabgrass (Large) ( <i>Digitaria sanguinalis</i> )	Speedwell (Persian) ( <i>Veronica persica</i> )
Crabgrass (Smooth) ( <i>Digitaria ischaemum</i> )	Speedwell (Purslane) ( <i>Veronica peregrine</i> )
Crabgrass (Southern) ( <i>Digitaria ciliaris</i> )	Wild Carrot ( <i>Daucus carota</i> )

\*Suppression only.

<b>WEEDS CONTROLLED – POST-EMERGENCE APPLICATIONS</b>	
Make a second application of this product 2-3 weeks after initial treatment. For optimal weed control, add a NIS-type surfactant with this product and apply to young, actively growing weeds. <b>This product</b> controls the following weeds using post-emergence application:	
Barnyardgrass ( <i>Echinochloa crusgalli</i> )	Henbit ( <i>Lamium amplexicaule</i> )
Bentgrass (Creeping) ( <i>Agrostis stolonifera</i> )	Lambsquarters (Common) ( <i>Chenopodium album</i> )
Buckhorn Plantain ( <i>Plantago lanceolata</i> )	Lawn Burweed ( <i>Soliva sessilis</i> )
Carpetweed ( <i>Mollugo verticillata</i> )	Lovegrass (Tufted) ( <i>Eragrostis pectinacea</i> )
Chickweed (Common) ( <i>Stellaria media</i> )	Marestail ( <i>Conyza Canadensis</i> )
Chickweed (Mouseear) ( <i>Cerastium vulgatum</i> )	Nimbleweed ( <i>Muhlenbergia schreberi</i> )
Clover (Large Hop) ( <i>Trifolium aureum</i> )	Nutsedge (Yellow) ( <i>Cyperus esculentus</i> )
Clover (White) ( <i>Trifolium repens</i> )	Oxalis ( <i>Oxalis stricta</i> )
Crabgrass (Large) ( <i>Digitaria sanguinalis</i> )*	Pigweed (Redroot) ( <i>Amaranthus retroflexus</i> )
Crabgrass (Smooth) ( <i>Digitaria ischaemum</i> )*	Pigweed (Smooth) ( <i>Amaranthus hybridus</i> )
Crabgrass (Southern) ( <i>Digitaria ciliaris</i> )*	Purslane (Common) ( <i>Portulaca oleracea</i> )
Curly dock ( <i>Rumex crispus</i> )	Shepherd’s purse ( <i>Capsella bursa-pastoris</i> )
Dandelion (Catsear) ( <i>Hypochoeris radicata</i> )	Smartweed (Pale) ( <i>Polygonum lapathifolium</i> )
Dandelion (Common) ( <i>Taraxacum officinale</i> )	Smartweed (Pennsylvania) ( <i>Polygonum pensylvanicum</i> )
Florida Betony ( <i>Stachys floridana</i> )	Sowthistle ( <i>Sonchus oleraceus</i> )
Florida Pusley ( <i>Richardia scabra</i> )	Swinecress ( <i>Coronopus didymus</i> )
Foxtail (Yellow) ( <i>Setaria glauca</i> )	Thistle (Canada) ( <i>Cirsium arvense</i> )
Galinsoga ( <i>Galinsoga ciliate</i> )	Verbena ( <i>Verbena hastate</i> )
Goosegrass ( <i>Eleusine indica</i> )*	Wild Carrot ( <i>Daucus carota</i> )
Ground Ivy ( <i>Glechoma hederacea</i> )	Wild Violet ( <i>Viola pratincola</i> )
Heal-All ( <i>Prunella vulgaris</i> )	Windmillgrass ( <i>Chloris verticillata</i> )

\*For optimal control, apply to less than 4 tiller crabgrass and goosegrass.



## STORAGE AND DISPOSAL

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

**Pesticide Storage:** Keep container tightly closed when not in use. Keep away from heat and flame. Do not store near seed, fertilizers, or foodstuffs. Keep away from heat and flame.

**Pesticide Disposal:** Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Open dumping is prohibited.

**Container Handling [less than or equal to 5 Gallons]:** Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into formulation equipment. 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 formulation equipment or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.

### **Container Handling [greater than 5 gallons]**

**Non-refillable container.** Do not reuse or refill this container. Offer for recycling if available. Triple rinse container or pressure rinse (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. 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 a 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.

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or a 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.

Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or by incineration.

### **Container Handling [greater than 5 gallons]**

**Refillable container.** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the person refilling. To clean container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

**DO NOT USE CONTAINERS FOR THE STORAGE OF FOOD, FEED, OR DRINKING WATER!**

## **WARRANTY AND LIMITATION OF DAMAGES**

**CONDITIONS OF SALE:** To the extent consistent with applicable law, Sipcam Agro USA, Inc. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the directions under normal conditions of use. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Sipcam Agro USA, Inc. SIPCAM AGRO USA, INC. DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, SIPCAM AGRO USA, INC. SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SIPCAM AGRO USA, INC.'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLUSIVE REMEDY SHALL BE LIMITED TO THE REFUND OF THE PURCHASE PRICE. BUYER AND USER ACKNOWLEDGE AND ASSUME ALL RISKS AND LIABILITY RESULTING FROM HANDLING, STORAGE AND USE OF THIS PRODUCT. SIPCAM AGRO USA, INC. DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.