



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

EPA Reg. Number:  
66222-120

Date of Issuance:  
JUN 2 2006

NOTICE OF PESTICIDE:  
 Registration  
 Reregistration  
(under FIFRA, as amended)

Term of Issuance:  
Conditional  
Name of Pesticide Product:  
Bromoxynil + MCPA  
Herbicide

Name and Address of Registrant (include ZIP Code):  
Makhteshim-Agan of North America Inc.  
4515 Falls of Neuse Road, Suite 300  
Raleigh, NC 27609

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/reregistered 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 sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product when the Agency requires all registrants of similar products to submit data.
2. Add the phrase "EPA Registration No. 66222-120" to your label before you release the product for shipment.
3. Submit one (1) copy of your final printed labeling before you release the product for shipment. Refer to the A-79 enclosure for a further description of final printed labeling.
4. Submit the results of one year storage stability and corrosion characteristic studies to EPA upon completion.

Signature of Approving Official:

*Joanne S. Miller*

Date: JUN 2 2006

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If these conditions are not complied with, the registration will be subject to cancellation in accordance with 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.

Joanne I. Miller  
Product Manager (23)  
Herbicide Branch  
Registration Division (7505P)

ACCEPTED 3/15  
with COMMENTS  
In EPA Letter Dated:  
JUN 2 2006  
Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.

# BROMOXYNIL + MCPA HERBICIDE

FOR CONTROL OF CERTAIN BROADLEAF WEEDS IN SMALL GRAINS  
(WHEAT, BARLEY, OATS, AND RYE),  
GRASSES GROWN FOR SOD PRODUCTION, AND FLAX

66222-120

ACTIVE INGREDIENT:	% BY WT.
Octanoic acid ester of bromoxynil* (3,5-dibromo-4-hydroxybenzotrile).....	31.7%
Isooctyl ester of 2-methyl-chlorophenoxyacetic acid** .....	34.0%
INERT INGREDIENTS: .....	34.3%
	<b>TOTAL 100.0%</b>

\*Bromoxynil octanoate equivalent to 21.8% of bromoxynil or not less than 2.0 pounds of bromoxynil per gallon.

\*\*Equivalent to 21.8% 2-methyl-chlorophenoxyacetic acid or not less than 2.0 pounds MCPA acid per gallon.

Contains petroleum distillate.

## KEEP OUT OF REACH OF CHILDREN CAUTION

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

### FIRST AID

- |                                |   |
|--------------------------------|---|
| <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 by a 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 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><li>• Call a poison control center or doctor for treatment advice.</li></ul>   |
| <b>IF INHALED:</b>             | <ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>   |

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact PROSAR at 1-877-250-9291 for emergency medical treatment information.

**NOTE TO PHYSICIAN:** Contains petroleum distillate. Vomiting may cause aspiration pneumonia.

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco.

**NET CONTENTS: 2 ½ GALLONS**

EPA Reg. No. 66222-xx  
EPA Est. No.



Makhteshim Agan of North America Inc.  
4515 Falls of Neuse Rd., Suite 300  
Raleigh, NC 27609

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical resistant to this product are listed below. If you want more options, follow the instructions for category *F* on an EPA chemical resistant category selection chart.

#### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, or Viton gloves
- Chemical resistant apron when cleaning equipment and mixing/loading
- Shoes plus socks

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

If you will handle a total of 60 gallons or more of this product per day, you must use a mechanical transfer system for all mixing and loading operations. If this product is packaged in a 30 gallon drum, you must use a mechanical transfer system which terminates in a drip-free hard coupling which may be used only with a spray or mix tank which has been fitted with a compatible coupling. If you do not presently own or have access to a mechanical transfer system with this type of coupling, contact your dealer for information on how to obtain such a system or to modify your present system. When using a mechanical transfer system, do not remove or disconnect the pump or probe from the container until the container has been emptied and rinsed. The pump or probe system must be used to rinse the empty container and to transfer the rinsate directly to the mixing or spray tank.

Application from a tractor with a completely enclosed cab or aerial application is required whenever this product is applied to 360 or more acres in a day. The closed systems and enclosed cabs must be used 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.

To reduce exposure to residues, wash the spray rig, tractor, and all other equipment used to handle or apply this product with water daily or before using the equipment for any other purpose.

APPLICATION BY CHEMIGATION must be done by fixed pipe, overhead sprinkler systems, or hand moved pipe. If hand moved pipe is used for chemigation, the pipe must not be handled in any way until 24 hours after chemigation has been completed and residues have been flushed from the system. When applying by chemigation, no person may enter the application site unless in an enclosed vehicle.

Aerial application is prohibited within 300 feet of residential areas (e.g., homes, schools, hospitals, shopping areas, etc.)

Do not apply with backpack or handheld application equipment.

Apply to nonresidential turf only. Do not apply to residential, playgrounds, or school yard turf.

### USER SAFETY RECOMMENDATIONS

#### Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside.
- 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

This pesticide is toxic to wildlife and fish. Use with care when applying to areas frequented by wildlife or adjacent to any body of water. For terrestrial uses, 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 apply when weather conditions favor drift from target areas. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

### PHYSICAL AND CHEMICAL HAZARDS

Combustible. Do not use or store near heat or open flame.

**NOTE:** Bromoxynil + MCPA herbicide contains low volatile isooctyl ester of MCPA. At high air or ground surface temperatures, vapors from this product may cause injury to susceptible plants. This fact should be considered when applying Bromoxynil + MCPA herbicide.

### DIRECTIONS FOR USE

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

Read entire label before using this product. This label must be in the possession of the user at the time of pesticide application.

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

#### **AGRICULTURAL USE REQUIREMENTS**

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

Do not enter or allow worker entry into treated crops during the restricted-entry interval (REI) For all crops except turf, the REI is 24 hours. The REI for harvesting sod farm turf is 12 days. The REI for other turf activities is 24 hours. For uses on turf grown for transplanting on sod farms, (e.g. sod farms), notify workers of the application by warning them orally and by posting warning signs at entrances to treated areas.

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

- Coveralls over a long-sleeved shirt and long pants
- Chemical resistant gloves such as nitrile, Viton, or barrier laminate
- Shoes plus socks
- Protective eyewear

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

The requirements in this box apply to uses of this product on nonresidential turf grass areas that are not within the scope of the Worker Protection Standard (WPS) 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 or allow others to enter the treated area until sprays have dried.

#### **GENERAL INFORMATION**

Bromoxynil + MCPA is formulated as an emulsifiable concentrate containing the equivalent of 2 lbs. per gallon of octanoic acid ester of bromoxynil and 2 pounds per gallon of isooctyl ester of MCPA.

Bromoxynil + MCPA is a selective postemergence herbicide for control of important broadleaf weeds infesting small grains (wheat, barley, oats, rye), conservation reserve program areas, and grass grown for seed. Optimum weed control is obtained when Bromoxynil + MCPA is applied to actively growing weed seedlings.

Bromoxynil + MCPA is primarily a contact herbicide; therefore, thorough coverage of the weed seedlings is essential for optimum control.

Bromoxynil + MCPA has little residual activity. Therefore subsequent flushes of weeds will not be controlled by the initial treatment. Generally crops that form a good canopy will help shade subsequent weed flushes. However, certain crops or short-straw varieties, for example Yaccora Rojo wheat, may not develop the crop canopy fast enough to shade the subsequent flushes of weeds.

Occasional transitory leaf burn may occur. The temporary leaf burn is similar to that seen with liquid fertilizer. Because the activity of Bromoxynil + MCPA is mainly contact, recovery of the crop is generally rapid with no lasting effect. Frequency and amount of leaf burn may be greater when crops are stressed by abrasive winds, cool to cold evening temperatures, or mechanical injury, such as that caused by hail, sleet, or insect feeding. To reduce the potential for temporary leaf burn, applications should be made to dry foliage in the recommended spray volumes per acre when weather conditions are not extreme.

#### **MIXING, LOADING, AND HANDLING INSTRUCTIONS**

##### **2 ½ GALLON CONTAINERS:**

It is strongly recommended that special care be taken in mixing and loading this product. Hands should be placed on the container in such a way as to avoid possible drip or splash.

##### **30 GALLON AND BULK CONTAINERS:**

If you will handle a total of 60 gallons or more of this product per day, you must use a mechanical transfer system for all mixing and loading operations. If this product is packaged in a 30 gallon drum, you must use a mechanical transfer system which terminates in a drip-free hard coupling which may be used only with a spray or mix tank which has been fitted with a compatible coupling. If you do not presently own or have access to a mechanical transfer system with

this type of coupling, contact your dealer for information on how to obtain such a system or to modify your present system. When using a mechanical transfer system, do not remove or disconnect the pump or probe from the container until the container has been emptied and rinsed. The pump or probe system must be used to rinse the empty container and to transfer the rinsate directly to the mixing or spray tank.

**BROMOXYNIL + MCPA ALONE:** Fill the spray tank  $\frac{1}{2}$  to  $\frac{3}{4}$  full with clean water. Begin agitation and add the recommended amount of Bromoxynil + MCPA. Add water to the spray tank to the desired level. Maintain sufficient agitation to ensure a uniform spray mixture during application.

**TANK MIXTURES:** Bromoxynil + MCPA can be applied in tank mixture with other herbicides and insecticides registered for use on approved crops. Refer to the specific crop section for rate recommendations and other restrictions and limitations. No label dosage may be exceeded. This product can not be mixed with any products containing a label prohibition against such mixing. To apply Bromoxynil + MCPA in mixture with another product, fill the spray tank  $\frac{1}{2}$  to  $\frac{3}{4}$  full with clean water and begin agitation. If tank mixing with wettable powder, soluble powder, flowable, or dry flowable products, add the powder or flowable product first. After the other herbicide is thoroughly mixed with water, add the recommended amount of Bromoxynil + MCPA herbicide and add water to the spray tank to the desired level. If tank mixing with other product types, add the Bromoxynil + MCPA first before adding the other product. Always mix one product in water thoroughly before adding another product or compatibility problems may occur. Never mix two products together without first mixing in water.

Maintain sufficient agitation while mixing and during application to ensure a uniform spray mixture. If spray mixture is allowed to remain without agitation for short periods of time, be sure to agitate until uniformly mixed before application.

If tank mixing with products other than those listed within each crop section, a compatibility test is recommended to ensure satisfactory spray preparation. To test for compatibility, use a small container and mix a small amount (0.5 to 1 quart) of spray, combining all ingredients in the same ratio as the anticipated use. If any indications of physical incompatibility develop, do not use this mixture for spraying. Indications of incompatibility usually will appear within 5 to 15 minutes after mixing. To ensure maximum crop safety and weed control, follow all cautions and limitations on this label and the labels of products used in the tank mixture with Bromoxynil + MCPA.

#### **SPRAYABLE LIQUID FERTILIZERS AND SPRAY ADDITIVES**

Bromoxynil + MCPA can be applied in combination with sprayable liquid fertilizer or spray additives such as surfactants or crop oil concentrate. When tank mixing with liquid fertilizer, always add the fertilizer to the spray tank first and agitate thoroughly before adding Bromoxynil + MCPA. Always predetermine the compatibility with liquid fertilizer by mixing small proportional quantities in advance. Agitation must be maintained during filling and application operations to ensure that Bromoxynil + MCPA is evenly mixed with the fertilizer. Leaf burn may occur when Bromoxynil + MCPA is applied with liquid fertilizer but new leaves are not adversely affected.

**NOTE:** Fertilizers and spray additives can increase foliage leaf burn when applied with Bromoxynil + MCPA. Do not apply fertilizers or spray additives with Bromoxynil + MCPA if leaf burn is a major concern due to environmental conditions, crop, or variety sensitivity to Bromoxynil + MCPA.

#### **APPLICATION PROCEDURES**

Bromoxynil + MCPA can be applied to registered use areas by ground, aerial, and sprinkler irrigation equipment.

##### **GROUND APPLICATION**

Use a standard herbicide boom sprayer that provides uniform and accurate application. Sprayer should be equipped with screens no finer than 50 mesh in the nozzle tips and in-line strainers.

Select a spray volume and delivery system that will ensure thorough and uniform spray coverage. For optimum spray distribution and thorough coverage use of flat fan nozzles (maximum tip size 8008) with a spray pressure of 40-60 psi are recommended. Other nozzle types and lower spray pressures that produce coarse spray droplets may not provide adequate coverage of the weeds to ensure optimum control. Raindrop<sup>®</sup> nozzles and flood nozzles are not recommended as weed control with Bromoxynil + MCPA may be reduced.

In general, a spray volume of 10 to 20 gallons per acre (GPA) is recommended for optimum spray coverage. A minimum of 5 GPA with a minimum spray pressure of 50 psi and a maximum ground speed of 10 mph may be used with higher speed, low volume ground application if ground terrain, crop, and weed density allow effective spray distribution. When using higher speed equipment, a maximum ground speed of 10 mph is suggested if field conditions cause excessive boom movement during application which results in poor spray coverage. Ground applications made when dry, dusty field conditions exist may provide reduced weed control in wheel track areas. Applications using less than 10 gallons per acre may result in reduced weed control.

When weed infestations are heavy, use of higher spray volumes and spray pressure will be helpful in obtaining uniform weed coverage. When corn or grain sorghum are large enough to interfere with the spray pattern, drop nozzles should be used to obtain uniform weed coverage. If you are unsure of the infestation level or size of crop, consult your local extension service.

Do not apply when winds are gusty or when other conditions favor poor spray coverage and/or off-target spray movement.

**AERIAL APPLICATION**

Use orifice discs, cores, and nozzle types and arrangements that will provide for optimum spray distribution and maximum coverage. In general a minimum spray volume of 5 GPA and a maximum pressure of 40 psi are recommended. A minimum spray volume of 3 gallons per acre may be used if crop canopy and weed density allow adequate spray coverage. Aerial applications using less than 5 gallons of spray volume per acre may result in reduced weed control.

Do not apply during inversion conditions, when winds are gusty, or when other conditions favor poor spray coverage and/or off-target spray movement. Off-target spray movement can be minimized by increasing the spray volume per acre and not applying when winds exceed 10 mph.

**SPRINKLER IRRIGATION APPLICATION**

Bromoxynil + MCPA herbicide can be applied through sprinkler irrigation systems to small grains and grasses grown for seed.

Apply Bromoxynil + MCPA herbicide through sprinkler systems including center pivot, lateral move, side (wheel) roll, solid set, or hand move irrigation systems only. If hand moved pipe is used for chemigation, the pipe must not be handled in any way until 24 hours after chemigation has been completed and residues have been flushed from the system. When applying by chemigation, no person may enter the application site unless in an enclosed vehicle. Do not apply this product through any other type of irrigation system.

**SPECIFIC REQUIREMENTS FOR APPLICATION THROUGH AUTOMATED SPRINKLER IRRIGATION SYSTEM**

1. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.
8. Agitation is recommended in the pesticide supply tank when applying the Bromoxynil + MCPA herbicide.
9. Bromoxynil + MCPA herbicide should be applied continuously for the duration of the water application with center pivot and continuous lateral move systems. Application of Bromoxynil + MCPA herbicide should be made during the last 30-45 minutes of the irrigation set with other overhead sprinkler systems.
10. For best performance, set the sprinkler system to deliver approximately 0.5 inch or less of water per acre.
11. Remove scale, pesticide residues, and other foreign matter from the supply tank and entire injector system. Flush with clean water.
12. If Bromoxynil + MCPA herbicide is diluted in the supply tank, fill the tank with half of the water amount desired, add the Bromoxynil + MCPA, and then add remaining water amount with agitation. Always dilute with at least 4 parts water to 1 part Bromoxynil + MCPA.
13. Start the sprinklers and then inject Bromoxynil + MCPA herbicide into the irrigation line. Bromoxynil + MCPA should be injected with a positive displacement pump into the main line at least 8 feet ahead of a right angle turn to insure adequate mixing. Refer to the Bromoxynil + MCPA herbicide label for detailed information on application rates and timings.

### CHEMIGATION USER PRECAUTIONS

- Application of more than 0.5 inch/acre of irrigation water may result in decreased product performance on certain soils.
- Do not apply when conditions favor drift, when system connections or fittings leak, or when nozzles do not provide uniform distribution.
- Allow sufficient time for pesticide to be flushed through all the lines and nozzles before turning off irrigation water.
- Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- Do not connect an irrigation system used for pesticide application to a public water system.
- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.
- A person knowledgeable of the chemigation system and responsible for its operations or under the supervision of the responsible person shall shut the system down and make necessary adjustments should the need arise.

### SPRAY DRIFT MANAGEMENT

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 and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses, or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. 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 should be observed.

The applicator should be familiar with and take into account the information covered in the [Aerial Drift Reduction Advisory Information](#).

#### Importance of Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

#### Controlling Droplet Size

- 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 recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles-Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation-Orienting nozzles so that the spray is released backwards parallel to the airstream will produce larger droplets than other orientations. Significant deflection from the horizontal will reduce droplet size and increase drift potential.
- 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. Solid stream nozzles oriented straight back produce larger droplets than other nozzle types.
- Boom Length-For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.
- Application-Applications should not be made 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.

#### Swath Adjustment

When applications are made with a cross-wind, 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.).

**Wind**

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 should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**Temperature and Humidity**

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

**Temperature Inversions**

Applications should not occur 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.

**Sensitive Areas**

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

**GENERAL WEED LIST**

Postemergence application of Bromoxynil + MCPA herbicide will control the following weeds when sprayed in the seedling stage. Maximum weed stage of growth is listed under Bromoxynil + MCPA RECOMMENDATIONS.

MOST SUSCEPTIBLE BROADLEAF WEED SPECIES		SUSCEPTIBLE BROADLEAF WEED SPECIES	
Annual sowthistle	( <i>Sonchus oleraceus</i> )	Blue (purple) mustard	( <i>Chlorispora tenella</i> )
Black mustard	( <i>Brassica nigra</i> )	Common groundsel	( <i>Senecio vulgaris</i> )
Black nightshade	( <i>Solanum nigrum</i> )	Common ragweed	( <i>Ambrosia artemisiifolia</i> )
Common cocklebur	( <i>Xanthium strumarium</i> )	Corn chamomile	( <i>Anthemis arvensis</i> )
Common lambsquarters	( <i>Chenopodium album</i> )	Corn gromwell	( <i>Lithospermum arvense</i> )
Common tarweed	( <i>Hemizonia congesta</i> )	Fumitory	( <i>Fumaria officinalis</i> )
Cow cockle	( <i>Saponaria vaccaria</i> )	Giant ragweed	( <i>Ambrosia trifida</i> )
Cutleaf nightshade	( <i>Solanum triflorum</i> )	Hemp sesbania	( <i>Sesbania exaltata</i> )
Eastern black nightshade	( <i>Solanum ptycanthum</i> )	Henbit	( <i>Lamium amplexicaule</i> )
Coast fiddleneck	( <i>Amsinckia intermedia</i> )	Ivyleaf morningglory	( <i>Ipomoea hederacea</i> )
Field pennycress	( <i>Thlaspi arvense</i> )	Knawel	( <i>Scleranthus annuus</i> )
Green smartweed	( <i>Polygonum scabrum</i> )	Kochia	( <i>Kochia scoparia</i> )
Hairy nightshade	( <i>Solanum sarachoides</i> )	Mayweed	( <i>Anthemis cotula</i> )
Horned Poppy	( <i>Glaucium corniculatum</i> )	Prostrate knotweed	( <i>Polygonum aviculare</i> )
Jimsonweed	( <i>Datura stramonium</i> )	Puncture vine	( <i>Tribulus terrestris</i> )
Ladysthumb	( <i>Polygonum persicaria</i> )	Tall morningglory	( <i>Ipomoea purpurea</i> )
Lanceleaf sage	( <i>Salvia reflexa</i> )	Tansy mustard	( <i>Descurainia pinnata</i> )
London rocket	( <i>Sisymbrium irio</i> )	Tarweed	( <i>Hemizonia spp.</i> )
Marshelder	( <i>Iva xanthifolia</i> )	Velvetleaf	( <i>Abutilon theophrasti</i> )
Pennsylvania smartweed	( <i>Polygonum strumarium</i> )	Wild radish	( <i>Raphanus raphanistrum</i> )
Pepperweed spp.	( <i>Lepidium spp.</i> )	Weeds germinating after spraying will not be controlled.	
Redroot pigweed	( <i>Amaranthus retroflexus</i> )		
Russian thistle	( <i>Salsola kali</i> )	<b>WEED SUPPRESSION</b>	
Shepherdspurse	( <i>Capsella bursa-pastoris</i> )	Canada Thistle	( <i>Cirsium arvense</i> )
Silverleaf nightshade	( <i>Solanum elaeagnifolium</i> )	Bromoxynil + MCPA herbicide applied at 1½ pints per acre provides burn down of top growth. Regrowth may occur. Make applications when Canada thistle is 8	
Smooth pigweed	( <i>Amaranthus hybridus</i> )		
Spiny pigweed	( <i>Amaranthus spinosus</i> )		

<sup>1</sup> Sunflower	( <i>Helianthus annuus</i> )	inches tall to the bud stage.
Tall waterhemp	( <i>Amaranthus tuberculatus</i> )	
Tartary buckwheat	( <i>Fagopyrum tataricum</i> )	
Tumble mustard	( <i>Sisymbrium altissimum</i> )	
Wild buckwheat	( <i>Polygonum convolvulus</i> )	
Wild mustard	( <i>Sinapis arvensis</i> )	
Yellow rocket	( <i>Barbarea vulgaris</i> )	

<sup>1</sup>For control of sunflower, delay application until first sunflower seedlings emerging are 4 inches in height.

**WHEAT, BARLEY, OATS, AND RYE**

**BROMOXYNIL + MCPA HERBICIDE RECOMMENDATIONS**

PRODUCT	RATE	APPLICATION TIMING AND SPECIFIC COMMENTS	
		CROP	WEEDS
Bromoxynil + MCPA	1 pint/A	Fall seeded wheat, barley, oats, and rye throughout the United States and spring seeded wheat, barley, oats, and rye in Idaho, Oregon, Washington, Colorado, Wyoming and Montana. Apply to wheat, barley, oats, and rye from the 3-leaf stage but before the crop reaches the boot stage.	MOST SUSCEPTIBLE BROADLEAF WEEDS: Apply to weeds up to the 8-leaf stage or 4 inches in height, whichever comes first. If weed forms rosette, apply before weeds exceed 2 inches in diameter.
	1½ - 2 pints/A		SUSCEPTIBLE BROADLEAF WEEDS: Apply to weeds up to the 4-leaf stage or 2 inches in height, whichever comes first. If weed forms rosette, apply before weeds exceed 1 inch in diameter.
	2 pints/A		Apply to henbit, knawel, and mayweed up to the 4-leaf stage or 2 inches in height, whichever comes first. Apply to kochia and tansy mustard for improved control when these weeds exceed the recommended stage of growth or are growing under cool, dry conditions.
	1-1½ pints/A	Spring seeded wheat and barley except Idaho, Oregon, Washington, Colorado, Montana, and Wyoming. Apply to wheat, barley, oats, and rye from the 3-leaf stage but before the crop reaches the boot stage.	MOST SUSCEPTIBLE AND SUSCEPTIBLE BROADLEAF WEEDS: Apply to weeds that do not exceed the 8-leaf stage or 4 inches in height, whichever comes first. If weed forms rosette, apply before weeds exceed 2 inches in diameter. Apply to kochia that is up to 2 inches in height.
	1½-2 pints/A	Spring seeded wheat and barley except Idaho, Oregon, Washington, Colorado, Montana, and Wyoming. Apply to wheat, barley, oats, and rye from the 3-leaf stage but before the crop reaches the boot stage.	Apply to kochia that is 2-4 inches in height.

	Chemigation Only 2 pints/A	Apply to wheat, barley, oats, and rye from the 3-leaf stage but before the boot stage. Apply through automated sprinkler irrigation systems with mechanical transfer loading system only. See MIXING, LOADING, AND HANDLING INSTRUCTIONS section for complete details.	Apply to MOST SUSCEPTIBLE and SUSCEPTIBLE broadleaf weeds up to the 4-leaf stage, 2 inches in height or 1 inch in diameter, whichever comes first.
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**BROMOXYNIL + MCPA HERBICIDE RECOMMENDATIONS (continued)**

PRODUCT	RATE	APPLICATION TIMING AND SPECIFIC COMMENTS	
		CROP	WEEDS
Bromoxynil + MCPA	Post-harvest ¾-2 pints/A	Make applications following harvest of wheat, barley, oats, and rye in the states of North Dakota, South Dakota, Minnesota, and Montana. Do not plant any rotational crop until the following use season.	Apply ¾ to 1 pint/A to MOST SUSCEPTIBLE BROADLEAF WEEDS up to the 8-leaf stage or 4 inches in height, whichever comes first. Apply 1½ to 2 pints/A to SUSCEPTIBLE BROADLEAF WEEDS up to the 4 leaf stage or 2 inches in height, whichever comes first. For control of both grasses and broadleaf weeds, tank mix Bromoxynil + MCPA herbicide with Roundup® or Roundup® + 2,4-D such as WEEDONE® or WEEDAR® brand herbicides.

**BROMOXYNIL + MCPA HERBICIDE TANK MIXTURE RECOMMENDATIONS**

PRODUCT	RATE	APPLICATION TIMING AND SPECIFIC COMMENTS	
		CROP	WEEDS
Bromoxynil + MCPA + Rhonox® (MCPA ester)	¾ - 2 pints/A + ¼ - ½ pint/A	Apply to spring seeded wheat, barley, oats, and rye from tillering stage but before boot stage.	For control of MOST SUSCEPTIBLE and SUSCEPTIBLE weeds and improved control of redroot pigweed and kochia. Apply to weeds up to the 8-leaf stage, 3 inches in height or 2 inches in diameter, whichever comes first. Apply to kochia and redroot pigweed up to 2 inches in height or diameter.
Bromoxynil + MCPA + Glean® + nonionic surfactant	¾ - 1½ pints/A + 1/6 - 1/3 oz./A + 1 qt./100 gal. of water	Apply to wheat and barley from the 3-leaf stage but before the crop reaches the boot stage. Refer to Glean label for crop rotation and other restrictions.	This tank mix improves control of broadleaf weeds such as henbit, tansy mustard, and chickweed. Apply to weeds up to the 8-leaf stage, 4 inches in height or 2 inches in diameter, whichever comes first.
Bromoxynil + MCPA + Finesse® + nonionic surfactant	¾ - 1½ pints/A + 1/6 - 1/3 oz./A + 1 qt./100 gal. of	Apply to wheat and barley from the 3-leaf stage but before the crop reaches the boot stage. Refer to Finesse label for crop rotation and other restrictions.	This tank mix improves control of broadleaf weeds such as henbit, tansy mustard, and chickweed. Apply to weeds up to the 8-

	water		leaf stage, 4 inches in height or 2 inches in diameter, whichever comes first.
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**BROMOXYNIL + MCPA HERBICIDE TANK MIXTURE RECOMMENDATIONS (continued)**

		APPLICATION TIMING AND SPECIFIC COMMENTS	
PRODUCT	RATE	CROP	WEEDS
Bromoxynil + MCPA + Ally® + nonionic surfactant	¾ - 1½ pints/A + 1/10 oz./A + 1 qt./100 gal. of water	Apply to wheat and barley from the 3-leaf stage but before the crop reaches the boot stage. Refer to Ally label for crop rotation and other restrictions.	This tank mix improves control of broadleaf weeds such as henbit, tansy mustard, and chickweed. Apply to weeds up to the 8-leaf stage, 4 inches in height or 2 inches in diameter, whichever comes first.
Bromoxynil + MCPA + Banvel®	¾ - 1½ pints/A + ½ - ¾ pint/A	FOR USE ON WHEAT ONLY. DO NOT TREAT BARLEY, OATS, OR RYE. Fall seeded wheat from the 3-leaf stage but before jointing. Spring seeded wheat from the 3- to 5-leaf stage of growth.	This tank mix improves control of broadleaves such as prostrate knotweed and kochia. Apply to weeds up to the 8-leaf stage, 3 inches in height or 2 inches in diameter, whichever comes first. Apply to kochia up to 2 inches in height or diameter.
Bromoxynil + MCPA + Harmony® Extra + nonionic surfactant	¾ - 1½ pints/A + 3/10 - ½ oz./A + 1 qt./100 gal. of water	Winter wheat: Apply from the 3-leaf stage but before the 3 <sup>rd</sup> node is detectable. Refer to the Harmony Extra label for crop rotation and other restrictions. Spring wheat and barley: Apply after the 3-leaf stage but before the 1 <sup>st</sup> node is detectable. Refer to the Harmony Extra label for crop rotation and other restrictions.	This tank mix improves control of broadleaf weeds such as henbit, chickweed, and redroot pigweed. Apply to weeds up to the 8-leaf stage, 4 inches in height or across, whichever comes first.
Bromoxynil + MCPA + Amber® + nonionic surfactant	¾ - 1½ pints/A + 0.28 - 0.56 oz/A + 0.25 - 0.5% v/v	Apply to wheat and barley from the 3-leaf stage but before the flag leaf is visible. Refer to the Amber label for crop rotation and other restrictions.	This tank mix improves control of broadleaves such as henbit, tansy mustard, and pigweed. Apply to weeds up to the 4-leaf stage, 4 inches in height or 2 inches in diameter, whichever comes first.
Bromoxynil + MCPA + Express® + nonionic surfactant	¾ - 1½ pints/A + 1/6 - 1/3 oz./A + 1 qt./100 gal. of water	Wheat and barley: Apply from the 3-leaf stage but before the flag is visible. Refer to the Express label for crop rotation and other restrictions.	This tank mix improves control of broadleaf weeds such as henbit, chickweed, redroot pigweed, and suppression of Canada thistle. Apply to annual weeds up to the 8-leaf stage, 4 inches in height or across, whichever comes first and to Canada thistle 4 to 8 inches tall with 2 to 6 inches of new growth.

**BROMOXYNIL + MCPA HERBICIDE TANK MIXTURE RECOMMENDATIONS (continued)**

		APPLICATION TIMING AND SPECIFIC COMMENTS	
PRODUCT	RATE	CROP	WEEDS
Bromoxynil + MCPA +	¾ - 1½ pints/A +	Apply to wheat and barley after the crop begins to tiller up to the 1 <sup>st</sup> node	This tank mix improves control of kochia, wild

Curtail <sup>®</sup> or Curtail <sup>®</sup> M	2 pints/A	detectable.	buckwheat, and suppression of Canada thistle. Apply to annual broadleaf weeds up to the 8-leaf stage, 4 inches in height or 2 inches in diameter and to Canada thistle in the rosette to pre-bud stage.
Bromoxynil + MCPA + metribuzin (Sencor <sup>®</sup> or Lexone <sup>®</sup> )	1 pint/A + 1/8 – 3/16 lb. ai/A	Winter wheat in Idaho, Oregon and Washington: Apply in spring after growth has started and secondary roots with a minimum of 3 to 4 tillers have been established but before the forming of joints in the stem. Avoid application when crop has experienced winter kill, frost damage, disease, or drought.	This tank mix improves control of broadleaf weeds such as chickweed, filaree, and henbit. Apply to weeds up to the 4-leaf stage, 2 inches in height or diameter, whichever comes first. A recognized authority should be consulted concerning the use of this mixture in your area.
Bromoxynil + MCPA + Avenge <sup>®</sup>	1 - 2 pints/A + 2½ - 4 pints/A	Winter wheat. Four leaf to tillering stage. Refer to Avenge label for varietal and other restrictions.  Spring wheat. Five to 6-leaf stage. Refer to Avenge label for varietal and other restrictions.  Barley. Three to 7-leaf state.	This tank mix will provide wild oat control in addition to broadleaves. Apply to wild oats in the 3- to 5-leaf stage and broadleaves that do not exceed the 4-leaf stage or rosettes of 1½ inches in diameter. Avenge use rates per acre are 2½ pints (1-10 oats per sq. ft.), 3 pints (11-25 oats per sq. ft.), or 4 pints (more than 25 oats per sq. ft.).
Bromoxynil + MCPA + Assert <sup>®</sup>	1 - 1½ pints/A + 1 - 1½ pints/A	Apply to wheat and barley from the 3-leaf stage but before boot stage. Refer to Assert label for crop rotation and other restrictions.	This tank mix will provide wild oat control in addition to broadleaf weeds. Apply to wild oats at the 1- to 4-leaf stage and broadleaf weeds up to the 8-leaf stage, 4 inches in height or 2 inches in diameter, whichever comes first. Use Assert at 1½ pints/A west of the Rocky Mountains or if wild oats have initiated tillering. For spray volumes in excess of 10 GPA, add 0.3 fluid oz. of nonionic surfactant for each gallon in excess of 10 GPA.

**Restrictions and Precautions: Wheat, Barley, Oats, and Rye**

- Do not graze treated fields within 45 days after application.
- Do not apply when crops are under moisture stress.
- Do not apply when crop canopy covers the weeds as poor control will result.
- Reduced weed control may occur when weeds are stressed from lack of moisture or cold temperatures.
- Refer to labels of products used in tank mixture for additional restrictions and precautions.
- Do not apply more than 2 pints of Bromoxynil + MCPA per acre in a single growing season.
- Do not plant rotational crops within 30 days following Bromoxynil + MCPA application.

**GRASSES GROWN FOR SOD PRODUCTION  
BROMOXYNIL + MCPA HERBICIDE RECOMMENDATIONS  
Seedling and Established Grasses**

PRODUCT	RATE Per ACRE	RATE Per 1000 sq. ft.	APPLICATION TIMING AND SPECIFIC COMMENTS	
			CROP	WEEDS
Bromoxynil + MCPA	1 - 2 pints	0.375 - 0.75 fl. oz.	Apply to established and newly seeded grasses grown for sod production before the boot stage. Established grasses tolerant to Bromoxynil + MCPA include bentgrasses, Kentucky bluegrass, Fescues, Ryegrass, Bermudagrass, St. Augustinegrass and Zoysiagrass. Bromoxynil + MCPA may also be used on seedling grasses such as Merion, Park, Delta, or common Kentucky bluegrasses, Pennlawn, Chewings, Illahee or Alta Fescues, Orchard grass, Highland, Seaside or Astoria Bentgrasses, perennial Ryegrasses, Bahiagrass, and Zoysiagrass.	Refer to the GENERAL WEED LIST for a listing of susceptible broadleaf weeds. Optimal control will be attained when weeds are treated in the seedling stage (less than 4-leaf stage, 2 inches in height, or 1 inch in diameter).
Bromoxynil + MCPA	<b>Chem-igation:</b> 2 pints/A only	0.75 fl. oz.	Apply to established and newly seeded grasses grown for sod production before the boot stage. Apply through automated sprinkler irrigation systems with mechanical transfer loading system only. See MIXING LOADING AND HANDLING INSTRUCTIONS section for complete details. Refer to the list of established grasses that are tolerant to Bromoxynil + MCPA.	

**Restrictions and Precautions: Grasses Grown for Sod Production**

- Do not allow livestock to graze in treated areas or feed treated grasses to livestock.
- Do not apply Bromoxynil + MCPA to grasses grown for sod production with backpack or hand-held application equipment.
- Do not apply more than 2 pints of Bromoxynil + MCPA per acre in a single growing season.
- Do not plant rotational crops within 30 days following Bromoxynil + MCPA application.

**FLAX (*Linum usitatissimum* only)**

**BROMOXYNIL + MCPA RECOMMENDATIONS**

PRODUCT	RATE	APPLICATION TIMING AND SPECIFIC COMMENTS	
		CROP	WEEDS
Bromoxynil + MCPA	0.9 pints/A	Apply to flax that is 2 to 8 inches in height. Do not apply Bromoxynil + MCPA to flax during or after the bud stage.	Apply to MOST SUSCEPTIBLE weeds that do not exceed the 4-leaf stage, 2 inches in height or 1 inch in diameter, whichever comes first.

**Restrictions and Precautions: Flax (*Linum usitatissimum* only)**

- Do not apply if temperatures are expected to exceed 85°F at or 3 days following application or crop injury may occur.
- Unacceptable crop injury may occur following Bromoxynil + MCPA application to flax grown on high organic, peat-type soils.
- Application under high humidity conditions can injure flax.
- Unless otherwise instructed, do not apply Bromoxynil + MCPA to flax with crop oil concentrate, surfactants, or nitrogen solutions.
- Do not use on ornamental flax.
- Do not apply more than 0.9 pints of Bromoxynil + MCPA per acre in a single growing season.
- Do not plant rotational crops within 30 days following Bromoxynil + MCPA application.

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**STORAGE AND DISPOSAL.**

**STORAGE:** Do not contaminate water, food, or feed by storage or disposal. Store at temperatures above 3°F. If allowed to freeze, remix before using.

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

**CONTAINER DISPOSAL:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**FOR 24-HOUR EMERGENCY ASSISTANCE (SPILL, LEAK OR FIRE), CALL INFOTRAC AT (800) 535-5053.**

**WARRANTY STATEMENT**

MAKHTESHIM AGAN OF NORTH AMERICA, INC. warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of MAKHTESHIM AGAN OF NORTH AMERICA, INC. To the extent allowed by law, MAKHTESHIM AGAN OF NORTH AMERICA, INC. shall not be liable for consequential, special, or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the Buyer. In addition to the foregoing, no purchaser of this product (other than an end user) shall be entitled to any reimbursement for any loss suffered as a result of any suspension or cancellation of the registration for this product by the U.S. Environmental Protection Agency. Except as expressly provided herein, MAKHTESHIM AGAN OF NORTH AMERICA, INC. makes no warranties, guarantees, or representations of any kind, either expressed or implied, or by usage of trade, statutory or otherwise, with regard to the product sold, including, but not limited to merchantability, fitness for a particular purpose, use or eligibility of the product for any particular trade usage. The exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall be damages not exceeding the purchase price paid for this product or, at MAKHTESHIM AGAN OF NORTH AMERICA, INC.'s election, the replacement of this product.

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Bromoxynil + MCPA Herbicide (66222-REN)(to EPA 5-26-06)