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279-3195

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U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Registration Division (H7505C)  
401 "M" St., S.W.  
Washington, D.C. 20460

EPA Reg. Number:  
279-3195

Date of Issuance:  
JAN 30 1998

Date of Expiration:

FEB 27 2003

NOTICE OF PESTICIDE:  
 Registration  
 Reregistration

(under FIFRA, as amended)

Term of Issuance:  
Conditional

Name of Pesticide Product:  
Authority First  
Herbicide

Name and Address of Registrant (include ZIP Code):

FMC Corporation  
Agricultural Products Group  
1735 Market Street  
Philadelphia, Pennsylvania 19103

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)(C) provided that you:

1. Comply with all the terms and conditions as stated in attached correspondence dated February 24, 1997 from FMC Corporation concerning additional data requirements for sulfentrazone.
2. Submit and/or cite all data required for registration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data.
3. Make the following label changes:
  - a. Revise the EPA Registration Number to read, "EPA Reg. No. 279-3195".

Signature of Approving Official:

Date:

JAN 30 1998

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- b. In the "Directions for Use" section of the labeling, under the area "For Use on Soybeans Only", revise the third sentence so that it reads, "Do not apply more than 5.3 ounces of Authority First per acre per season."
4. Submit two copies of the revised final printed label for the record.

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Sincerely,

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

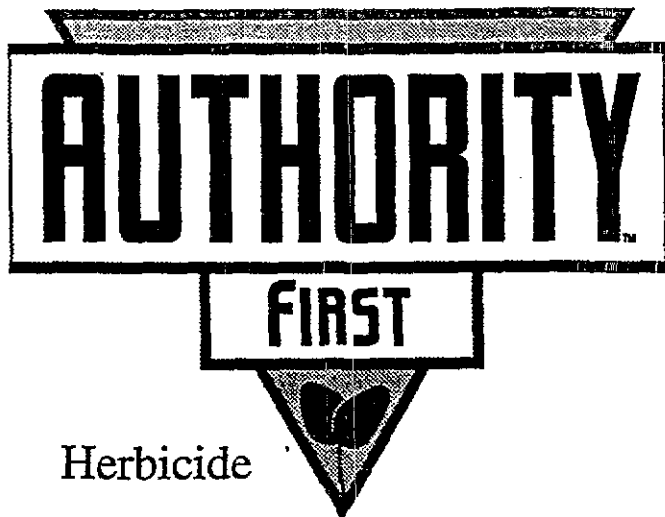
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Enclosure

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3/11

Code



Herbicide

Dispersible Granules

Active Ingredients	By Weight
Sulfentrazone	
N-[2,4-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl]phenyl]methanesulfonamide	75%
Inert Ingredients	25%
TOTAL	100%

EPA Reg. No. 279-3148

**FMC**

FMC Corporation  
Agricultural Products Group  
Philadelphia PA 19103  
12/97 draft

ACCEPTED  
with COMMENTS  
In EPA Letter Dated

JAN 30 1998

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.  
279-3148

KEEP OUT OF REACH OF CHILDREN

**CAUTION**

**STATEMENT OF PRACTICAL TREATMENT**

**If swallowed:** Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. If person is unconscious, do not give anything by mouth or induce vomiting.

**If inhaled:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

**If on skin:** Wash with plenty of soap and water. Get medical attention if irritation occurs and persists.

**If in eyes:** Flush eyes with plenty of water. Call a physician if irritation persists.

For medical emergencies involving this product, call toll-free 1-800-331-3148.

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS  
AND DOMESTIC ANIMALS**

Causes moderate eye irritation. Harmful if swallowed, inhaled, or absorbed through skin. Avoid breathing dust, vapor or spray mist. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

**PERSONAL  
PROTECTIVE EQUIPMENT**

Applicators and other handlers must wear:  
Long-sleeved shirt and long pants.  
Waterproof gloves.  
Shoes plus socks.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. 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.

**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 part 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### USER SAFETY RECOMMENDATIONS

**Users should:** Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

### ENVIRONMENTAL HAZARDS

This pesticide is toxic to marine/estuarine invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to terrestrial and aquatic plants in neighboring areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

Groundwater label advisory: This chemical is known to leach through soil into groundwater under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground-water contamination.

Do not use on coarse soils classified as sand which have less than 1 % organic matter.

Surface water advisory: Sulfentrazone can contaminate surface water through spray drift. Under some conditions, sulfentrazone may also have a high potential for runoff into surface water (primarily via dissolution in runoff water), for several to many months post-application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlying extremely shallow ground water, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas over-lying tile drainage systems that drain to surface waters.

### PHYSICAL/CHEMICAL HAZARDS

Do not use or store near heat or open flame.

### IMPORTANT

Injury to or loss of desirable trees or vegetation may result from failure to observe the following: Do not apply or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots. Do not use on lawns, walks, driveways, tennis courts or similar areas. Prevent drift of spray to desirable plants. Do not contaminate any body of water. Keep from contact with fertilizers, insecticides, fungicides and seeds during storage.

9/11

Prior to using Authority First herbicide, consideration should be given to crop rotation plans. Crops other than soybeans may be extremely sensitive to low concentrations of Authority First remaining in the soil the next planting season. Choice of rotation crop is restricted following application of Authority First. (See "ROTATIONAL CROP GUIDELINES" for your geographical region.)

Thoroughly clean Authority First from application equipment immediately after use and prior to spraying crops other than soybeans. Failure to remove even small amounts of Authority First from application equipment may result in injury to subsequently sprayed crops.

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

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

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

- Coveralls over long-sleeved shirt and long pants.
- Waterproof gloves.
- Shoes plus socks.

### FOR USE ON SOYBEANS ONLY

Do not apply aerially.

Do not feed treated soybean forage or soybean hay to livestock

Do not apply more than 5.3 ounces of Authority First.

Do not apply this product through any type of irrigation system.

## GENERAL INFORMATION

Authority First Herbicide is a dispersible granule formulation, premeasured in a 1 pound soluble pack, to be mixed with water and sprayed for selective preemergence weed control in soybeans. When applied according to the instructions on this label, it will control nightshade and waterhemp species.

Preemergence and preplant incorporated applications of Authority First require rainfall or sprinkler irrigation to activate the herbicide. Degree of control and duration of effect depend on: rate used, weed spectrum, growing conditions at and following time of treatment, soil pH, texture, organic matter, moisture and precipitation.

*This label contains specific use directions for distinct geographical use areas for Authority First. The States are defined under USE RATES. This label also contains general use information which is applicable to all Authority First use geography.*

## BIOLOGICAL ACTIVITY

Authority First rapidly inhibits the growth of susceptible weeds. Following application of a preplant incorporated or preemergence treatment, susceptible weeds may germinate and emerge, but growth then ceases and leaves become yellow 3-5 days after emergence. Death of leaf tissue and growing point will follow in some species while others will remain green but stunted and noncompetitive.

Authority First will suppress some annual grasses when used preplant or preemergence but other products will be needed to ensure adequate grass control.

Poor growing conditions such as excessive moisture, cool temperatures, and soil compaction or the presence of various pathogens may impact seedling vigor. Under these conditions the active ingredients in Authority First, like other soil applied herbicides, can injure soybeans.

However, these early injury symptoms are short lived and do not result in yield reductions.

## RAINFALL ACTIVATION FOR PREEMERGENCE ACTIVITY

Best results are obtained if Authority First is applied to moist soil and followed by rainfall or irrigation (~1") before weeds germinate. Several small rainfalls of less than 1/4" each are not as beneficial as one large rainfall of 1/2-1". On dry soil, more moisture is required for activation (1-2") before weed emergence. If moisture is insufficient to activate the herbicide, a rotary hoeing or shallow cultivation should be made after emergence of the crop while weeds are small enough to be controlled by mechanical means.

## APPLICATION METHODS

Do not apply Authority First after the soybean crop has emerged or severe injury or death of the crop will occur.

*Authority First may be applied by any of the methods listed below. These methods apply to Illinois, Indiana, Iowa, Michigan, Minnesota, Nebraska, Ohio, South Dakota and*

*Wisconsin only.*

## PREPLANT INCORPORATED

Uniformly incorporate Authority First or Authority First tankmixes no deeper than the top 1-2" of soil prior to planting soybeans. Use equipment suited to proper incorporation into the top 1-2 inches of soil, e.g.: Do-all, field cultivator, or rotterra. Authority First can be tank mixed with "Command 4EC" and applied preplant incorporated. Refer to the "Command" label for specific use instructions. If tank-mixed with a grass herbicide such as a Dinitroaniline (DNA) like "Treflan", "Sonalan", or "Prowl" or an acetanilide such as "Dual", "Frontier", or "Lasso", follow label instructions for proper incorporation of the grass herbicide into the top 1 to 2" of soil. Improper soil incorporation can result in erratic weed control or crop injury. If soil is dry, rainfall (~1") is required to activate preplant incorporated herbicides such as Authority First before weed emergence.

NOTE: Consult Lasso<sup>1</sup>, Dual<sup>2</sup>, Frontier<sup>3</sup>, Prowl<sup>4</sup>, Treflan<sup>5</sup>, Sonalan<sup>5</sup>, or Command<sup>6</sup> labels for additional weeds controlled, use rates and instructions, when Authority First is used in conjunction with these herbicides.

## PREEMERGENCE

Authority First can be applied preemergence in combination with such herbicides as "Command 3ME", "Lasso", "Dual", "Frontier", "Prowl" or following the use of a preplant incorporated grass herbicide such as "Treflan" or "Sonalan". Consult labels for rates and use instructions.

## AUTHORITY FIRST + MATADOR OR ASSURE TANKMIXES FOR EARLY PRE-PLANT BURNDOWN OF GRASSES IN SOYBEANS IN NO-TILL

Authority First may be tankmixed with MATADOR<sup>6</sup> or ASSURE<sup>7</sup> herbicide or MATADOR OR ASSURE + 2,4-D LVE to provide early pre-plant burndown control of small foxtails, fall panicum, barnyardgrass, volunteer corn, shattercane, and wild proso millet.

For grass up to 3" in height, use 2.5 oz MATADOR OR ASSURE per acre.

For grass >3" up to 5" in height, use 5 oz MATADOR OR ASSURE per acre.

## Timing of Applications

• Authority First + MATADOR OR ASSURE tankmix may be applied from no more than 30 days before planting up to just before soybean emergence.

Authority First + MATADOR OR ASSURE + 2,4-D LVE tankmix may be applied between 7 days and no more than 30 days before planting, but no earlier than 30 days before planting, depending on the rate of 2,4-D LVE used.

Consult the 2,4-D label for the appropriate pre-plant interval based on the rate used.

To apply Authority First + MATADOR or ASSURE tankmixes:

- use flat fan nozzles only.
- must include a petroleum based crop oil concentrate at a rate of 1 gallon per 100 gallons of spray solution (1% v/v).
- an ammonium nitrogen fertilizer may be added but is not required for performance.

**PREEMERGENCE FOLLOWED BY POSTEMERGENCE: Planned Program**

For best results Authority First herbicide is recommended in a planned program applied preplant burndown, preplant incorporated, or preemergence to be followed by postemergence applications of either CLASSIC<sup>7</sup>, SKIRMISH<sup>6</sup>, RELIANCE STS, RELIANCE STS SP, SYNCHRONY STS, SYNCHRONY STS DF OR SYNCHRONY STS SP. RELIANCE STS, RELIANCE STS SP, SYNCHRONY STS, SYNCHRONY STS DF, AND SYNCHRONY STS SP are recommended for use only on soybean varieties designated "STS". CLASSIC or SKIRMISH may be used on all soybean varieties.

**USE RATES**

**AREA 1**

Iowa, Minnesota, Nebraska, South Dakota and Wisconsin

*Pre-plant Burndown, Pre-plant Incorporated, or Preemergence*

Apply Authority First herbicide at 4-5.3 ounces per acre (1 soluble pack per 4-3 acres) for nightshade and waterhemp species.

*Postemergence*

Apply either RELIANCE STS or RELIANCE STS SP at a rate of 0.5 ounces per acre. Apply CLASSIC or SKIRMISH at a rate of 1/3 ounce per acre, unless otherwise specified on other DuPont supplemental labeling†.

**WEEDS CONTROLLED**

When used as directed, Authority First herbicide followed by either RELIANCE STS, or RELIANCE STS SP, or CLASSIC or SKIRMISH, will provide control of the following species:

- |   |                   |
|---|-------------------|
| Annual Smartweed                            | Nightshade, Hairy |
| Cocklebur                                   | Pigweed           |
| Common Milkweed**<br>(above ground portion) | Redroot           |
| Common Ragweed*                             | Smooth            |
| Jimsonweed                                  | Sunflower         |
| Lambsquarters                               | Velvetleaf*       |
| Marestail*                                  | Waterhemp, common |
| Nightshade, Black                           | Waterhemp, tall   |
| Nightshade, Eastern Black                   |                   |

**Weeds Suppressed**

- |                       |                 |
|-----------------------|-----------------|
| Morningglory (annual) | Yellow Nutsedge |
| Entireleaf            |                 |
| Ivyleaf               |                 |
| Pitted                |                 |
| Smallflower           |                 |
| Tall                  |                 |

† Refer to either the CLASSIC or SKIRMISH, or RELIANCE STS or RELIANCE STS SP labels for appropriate postemergence application timing, weed stage and specific adjuvants.

\* Weeds suppressed by "Authority First" followed by CLASSIC or SKIRMISH at 1/3 ounce per acre.

\*\* Common milkweed not controlled by "Authority First" followed by CLASSIC or SKIRMISH.

**AREA 2**

Illinois, Indiana, Iowa (Fields located outside the boundaries of the Clarion-Nicollet-Webster and Hamburg-Ida-Monona soil associations and fields located outside the historic flood plain of the Missouri River), Michigan (Fields south of Interstate 96), Nebraska (Fields south of Route 30 and east of Route 281.) and Ohio.

*Pre-plant Burndown, Pre-plant Incorporated, or Preemergence*

Apply Authority First herbicide at 4-5.3 ounces per acre (1 soluble pack per 4-3 acres) for nightshade and waterhemp species.

*Postemergence*

Apply either SYNCHRONY STS at 0.35 ounces per acre (1 soluble pack per 4 acres), or SYNCHRONY STS DF at 0.5 ounces per acre, or SYNCHRONY STS SP at 0.5 ounces per acre (1 soluble pack per 4 acres); Apply CLASSIC or SKIRMISH at 1/2 to 3/4 ounce per acre.†

6/11

7/11

**WEEDS CONTROLLED**

When used as directed, Authority First herbicide followed by either SYNCHRONY STS, SYNCHRONY STS DF or SYNCHRONY STS SP or CLASSIC or SKIRMISH, will provide control of the following species:

Beggarticks (Bidens sp)	Mustard
Bristly Starbur	Nightshade, Black
Burcucumber*	Nightshade, Eastern Black
Cocklebur	Nightshade, Hairy
Common Milkweed** (above ground portion)	Pigweeds
Cowpea	Redroot (Rough)
Florida Beggarweed	Smooth
Florida Pusley**	Ragweed
Hemp Sesbania	Common
Lambsquarters	Giant*
Jerusalem Artichoke (above ground portion)	Sicklepod*
Jimsonweed	Smartweed
Marestail	Ladysthumb
Morningglory* (annual)	Pennsylvania
Entireleaf	Sunflower
Ivyleaf	Wild Poinsettia
Pitted	Yellow Nutsedge
Smallflower	Velvetleaf
Tall	Waterhemp, common
	Waterhemp, tall

\* See Split Applications section of SYNCHRONY STS labels.

**Weeds Suppressed**

Buffalobur**	Spurred Anoda**
Canada Thistle	Purple Nutsedge
Kochia	Venice Mallow**

† Refer to either the CLASSIC or SKIRMISH, SYNCHRONY STS, SYNCHRONY STS DF or SYNCHRONY STS SP labels for appropriate postemergence application timing, weed stage and specific adjuvants.

\*\* Weeds not controlled by "Authority First" followed by CLASSIC or SKIRMISH.

**ROTATIONAL GUIDELINES FOR ALL AUTHORITY FIRST APPLICATIONS**

When used as described, the table describes the minimum length in months from the time of Authority First application until Authority First treated soil can be replanted to the crops listed in the table. When a recommended tank mix is used, consult the tankmix partner labels for recropping instructions and follow the directions that are most restrictive.

**ROTATIONAL GUIDELINE**

**ALL LABELED AUTHORITY FIRST USES**

(All uses of Authority FIRST as described in this label including Authority First Sequentials with Post products)

For the Midwest States : IA, IL, IN, MI, MN, NE, OH, SD, and WI.

Crop	Recropping Interval in Months
Soybeans †	Anytime
Wheat	4
Alfalfa , Barley, Ryegrass,	12
Rice	10
Sorghum,	10
Field Corn *	10
Dry Beans	12
Clover, Cotton, Cucumber, Flax, Pumpkin, Sunflower, Sweet Corn, Watermelon, Cabbage, Lentils, Mustard	18‡
Canola (rapeseed), Carrot, Onion, Potato, Sugar Beets and any other crop not listed	30‡

\* Field Corn is defined to include only that corn grown for grain or silage, popcorn, and seed corn.

† Do not feed treated soybean forage or soybean hay to livestock.

‡ Crops that have rotational intervals greater than 12 months after a Authority First application are the result of crop injury concerns.

**APPLICATION INFORMATION**

**EQUIPMENT / SPRAY VOLUMES**

**Ground Application:** Apply uniformly by ground equipment with a properly calibrated low pressure (20 to 40 psi) fixed-boom sprayer equipped with fan-type nozzles and screens no finer than 50 mesh. Use 10 to 40 gals of water per acre.

Continuous agitation in the spray tank is required to keep the material in suspension. Avoid overlap and shut off spray booms while starting, turning, slowing or stopping, as injury to the crop may result.

**SPRAY TANK PREPARATION**

It is important that spray equipment is clean and free of existing pesticide deposits before using Authority First. Follow the spray tank cleanout procedures specified on the label of product previously sprayed. If no cleanout procedure is provided, follow the cleanout procedure in SPRAYER CLEANUP section of this label.

8/11

### Mixing Instructions

Soluble Packs are contained in waterproof, resealable plastic bags, with plastic bags enclosed in a cardboard box. The individual Soluble Packs will dissolve completely in water. Open the outer resealable plastic bag, remove the number of 1 pound Soluble Packs required for the application at a rate based on soil type and drop them into the spray tank as directed below.

**DO NOT attempt to open or use partial Soluble Packets.**

#### Soluble Pack Handling Precautions:

The outer resealable plastic bag is NOT soluble in water. DO NOT place it in the spray tank.

Excessive handling of the packs, or exposure to moisture, will cause breakage.

Do not touch the packs with wet hands or place them on wet surfaces.

Protect unused Soluble Packs by resealing them in the resealable bag.

To Use the Soluble Packs:

1. Fill the tank 1/4 to 1/3 full of water.
2. While agitating, add the required number of Authority First Soluble Packs ( 1 pound per Soluble Pack).
3. The packs should dissolve completely within 5 minutes. Continue adequate agitation.
4. Authority First should be thoroughly mixed with water in the spray tank before adding any other material. As the tank is filling and after the Soluble Packs have dissolved, add (in order): other herbicide(s), the required spray adjuvant, and the nitrogen fertilizer where required.
5. Apply Authority First spray preparation within 24 hours of mixing to avoid product degradation, settling and difficulty in resuspending.
6. If the mixture has settled, thoroughly reagitate before using.

#### Proper Handling Instructions

This product may not be mixed or loaded within 50 feet of any wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or properly diked mixing/loading areas.

Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 ft of any well are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash-water, and rainwater that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad; which means the pad must be self-

contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at least 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above-specific minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site. States may have in effect additional requirements regarding well-head setbacks and operational containment.

Do not use flood irrigation to apply or incorporate this product. Product must be used in a manner which will prevent back siphoning in wells, spills or improper disposal of excess pesticide, spray mixtures or rinsates.

#### SPRAYER CLEANUP

To avoid subsequent injury to desirable crops, thoroughly clean all mixing and spray equipment immediately following applications of Authority First as follows:\*

1. Drain tank; thoroughly hose down the interior surfaces of the tank; then flush tank, boom, and hoses with clean water for a minimum of 5 minutes.
2. Partially fill the tank with water and add one of the cleaning agents listed below. Complete filling the tank with water, then flush the cleaning solution through the boom, hoses, and nozzles. Add water to completely fill the tank and allow to agitate or recirculate for at least 15 minutes. Again, flush the boom, hoses and nozzles, and drain the tank.
3. Remove the nozzles and screens and clean separately in a bucket containing water and the cleaning agent.
4. Repeat Step 2.
5. Thoroughly rinse the tank with clean water for a minimum of 5 minutes, flushing water through the boom and hoses.

**NOTE:** Use any of the following cleaning agents. Carefully read and follow the individual cleaning agent instructions.

1. One gallon of household ammonia (contains 3% active) per 100 gallons of water.
2. Nutra-Sol<sup>®</sup>
3. Loveland Tank and Equipment Cleaner<sup>®</sup>
4. Protank Cleaner<sup>®</sup>
5. Chem-Tank Cleaner and Neutralizer<sup>®</sup>
6. Incide-Out<sup>®</sup>
7. Tank-Aid<sup>®</sup>

\*A steam cleaning of fiberglass or stainless steel aerial spray tanks is recommended prior to performing the above cleanout procedure to facilitate the removal of any caked deposits.



## SPRAY DRIFT MANAGEMENT

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

**AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.**

### IMPORTANCE OF DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets (>150 - 200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. **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** sections of this label.

#### **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 recommended 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.

### BOOM HEIGHT

Setting the boom at the lowest labeled height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom should remain level with the crop and have minimal bounce.

### WIND

Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. **AVOID GUSTY OR WINDLESS CONDITIONS.**

**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 hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

### TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature inversions are characterized by increasing temperature 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 concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

### SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

### AIR ASSISTED GROUND FIELD CROP SPRAYERS

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that drift is not occurring.

**Note:** Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Consult the application equipment section of this label to determine if use of an air assisted sprayer is recommended.

### RESISTANCE MANAGEMENT

When herbicides with the same mode of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant weed biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field. These resistant weed biotypes may not be adequately controlled. Cultural practices such as tillage, preventing weed escapes from going to seed, and using herbicides with different modes of action within and between crop seasons can aid in delaying the proliferation and possible dominance of herbicide resistant weed biotypes.

## INTEGRATED PEST MANAGEMENT

FMC recommends the use of Integrated Pest Management (IPM) programs to control pests. This product may be used as part of an Integrated Pest Management (IPM) program which can include biological, cultural, and genetic practices aimed at preventing economic pest damage. Application of this product should be based on IPM principles and practices including field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop or site systems in your area.

## IMPORTANT PRECAUTIONS

1. Because most crops are highly sensitive to Authority First, all direct or indirect contact (such as spray drift) to crops or to land scheduled to be planted to crops other than soybeans should be avoided.
2. Soybean stunting may occur if excessive rainfall occurs after application but before soybeans emerge. Injury is more prevalent under poor drainage or compacted conditions or when soil is saturated for long periods of time. Soybeans rapidly outgrow stunting once favorable growing conditions return.
3. Do not apply Authority First if there are visible signs of cracking due to soybean emergence, or serious crop injury may result.
4. Seedling disease, nematodes, cold weather, deep planting (more than 2"), excessive moisture, high salt concentration, or drought may weaken soybean seedlings and increase the possibility of crop injury.
5. Do not apply to land that has been or will be treated with ALLY, GLEAN, or FINESSE herbicide in Nebraska and Kansas without observing the rotational crop intervals for those products.
6. Do not apply or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots, or injury to desirable trees and plants may occur.
7. Do not use on lawns, walks, driveways, tennis courts or similar areas. Prevent drift of spray to desirable plants. Do not contaminate any body of water. Keep from contact with fertilizers, insecticides, fungicides and seeds during storage.
8. Thoroughly clean Authority First from application equipment immediately after use and prior to spraying crops other than soybeans. Failure to remove even small amounts of Authority First from application equipment may result in injury to subsequently sprayed crops.

9. Do not tank mix Authority First with organophosphate insecticides. Do not apply Authority First within 14 days before or after an application of an organophosphate insecticide, as severe crop injury may occur. (10)

## STORAGE AND DISPOSAL

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

**Storage:** Store product in original container only. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in a cool, dry place and avoid excess heat.

**Product Disposal:** If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional office for guidance.

**Container Disposal:** Do not reuse the outer box or the resealable plastic bag. When all soluble packets are used, the outer packaging can be considered clean and may be disposed of in a sanitary landfill or by incineration, or by other methods approved by local, state and national authorities. If the resealable bag contains the product in any way, the bag must be triple-rinsed with clean water. Add the rinsate to the spray tank and dispose of the outer wrap as described above.

**NOTICE TO BUYER:** Purchase of this material does not confer any rights under patents of countries outside of the United States.

11/11

**Dealers Should Sell in Original Packages Only.**

**Terms of Sale or Use:** On purchase of this product buyer and user agree to the following conditions:

**Warranty:** FMC makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Except as so warranted the product is sold as is. Buyer and user assume all risk of use and/or handling and/or storage of this material when such use and/or handling and/or storage is contrary to label instructions.

**Directions and Recommendations:** Follow directions carefully. Timing and method of application, weather and crop conditions, mixture with other chemicals not specifically recommended and other influencing factors in the use of this product are beyond the control of the seller and are assumed by the buyer at his own risk.

**Use of Product:** FMC's recommendations for the use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice.

**Damages:** Buyer's or user's exclusive remedy for damages for breach of warranty or negligence shall be limited to direct damages not exceeding the purchase price paid and shall not include incidental or consequential damages.

**Trademark information**

1. Trademark of Monsanto Agricultural Products Co.
2. Trademark of Novartis.
3. Manufactured by Sandoz Chemicals Inc.
4. Trademark of American Cyanamid Corp.
5. Trademark of Dow Elanco
6. Trademark of FMC Corp.
7. Trademark of E.I. DuPont deNemours
8. Compounded for Thomas G. Kilfoil Co., Inc.
9. Trademark of Loveland Industries, Inc.
10. Manufactured for Cenex/Land 'O Lakes Agronomy Co.
11. Manufactured by Farmbelt Chemicals, Inc.
12. Trademark of Precision Laboratories, Inc.
12. Manufactured for Combelt Chemical Co.

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