



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

May 19, 2015

Shannon Yanocha  
Product Registration Manager  
FMC Corporation  
1735 Market Street  
Philadelphia, PA 19103

Subject: Label Amendment – Update the label  
Product Name: F9016-2 DF Herbicide  
EPA Registration Number: 279-9560  
Application Date: 12/23/14  
Decision Number: 499159

Dear Ms Yanocha:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

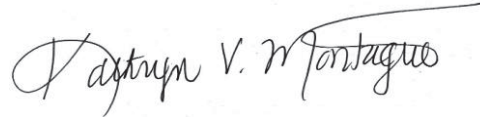
Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded 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.

Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance

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with FIFRA section 6. If you have any questions, you may contact Dominic Schuler at 703-347-0260 or via email at [schuler.dominic@epa.gov](mailto:schuler.dominic@epa.gov).

Sincerely,

A handwritten signature in black ink that reads "Kathryn V. Montague". The signature is written in a cursive style with a long horizontal line extending from the top of the "g" in "Montague".

Kathryn Montague, Product Manager 23  
Herbicide Branch  
Registration Division (7505P)  
Office of Pesticide Programs

Enclosure

**ACCEPTED**

05/19/2015

Under the Federal Insecticide, Fungicide  
and Rodenticide Act as amended, for the  
pesticide registered under  
EPA Reg. No. 279-9560

<b>Group</b>	<b>14</b>	<b>2</b>	<b>Herbicides</b>
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# F9016-2 DF Herbicide

**Alternate Brand Name: Authority Maxx**

**For selective early preplant, preplant burndown, preplant incorporated and preemergence weed control in soybeans in AL, AR, DE, GA, IA, IL, IN, KS, KY, LA, MD, MI, MN, MO, MS, NC, NE, NJ, OH, OK, PA, SC, TN, TX, VA, WI, and WV.**

EPA Reg. No. 279-9560

EPA Est. No.

Active Ingredients	By Wt.
Sulfentrazone*.....	62.12%
Chlorimuron Ethyl* .....	3.88%
Other Ingredients .....	34.00%
<b>TOTAL</b>	<b>100.00%</b>

\*F9016-2 DF contains 0.66 lb active ingredient per pound product (0.62 lb a.i./lb of sulfentrazone and 0.04 lb ai/lb of Chlorimuron ethyl)

## KEEP OUT OF REACH OF CHILDREN CAUTION

### FIRST AID

**If Swallowed:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything to an unconscious person.

**If in Eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**If Inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice

**If on Skin or Clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

### HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-331-3148 for emergency medical treatment information.

**Net Contents:** \_\_\_\_\_

**FROM**   
 FMC Corporation  
 1735 Market Street  
 Philadelphia, PA 19103

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## PRECAUTIONARY STATEMENTS

### Hazards to Humans and domestic Animals

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing.

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Wear protective eyewear.
- 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 exist, 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.

## **USERS SAFETY RECOMMENDATIONS**

**Users should:** Wash thoroughly with soap and water after handling before eating, drinking, chewing gum, using tobacco or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should 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 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 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 groundwater 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 too many months post-application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, and areas overlying extremely shallow groundwater, 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.

## **CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**Notice:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, loss of yield or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions beyond the control of FMC or Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold FMC and Seller harmless for any claims relating to such factors.

Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the Directions for Use when used in accordance with the directions under normal conditions of use. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, FMC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, NOR ANY OTHER EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE SELECTION, PURCHASE, OR USE OF THIS PRODUCT. Any warranties, express or implied, having been made are inapplicable if this product has been used contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to (or beyond the control of) seller or FMC, and, to the extent consistent with applicable law, buyer assumes the risk of any such use.

To the extent consistent with applicable law, FMC or seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF FMC AND SELLER FOR ANY AND ALL CLAIMS. LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF FMC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

This Conditions of Sale and Limitation of Warranty and Liability may not be amended by any oral or written agreement.

## 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, and shoes plus socks.

## STORAGE AND DISPOSAL

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

### Pesticide storage

Store product in original container only, away from other pesticides, fertilizer, food or feed. Store in a cool dry place and avoid excess heat.

### In Case of Spill

Avoid contact. Isolate areas and keep out animals and unprotected persons. **Confine Spills. Call CHEMTREC (Transportation and spills): (800) 424-9300.**

### To Confine Spills.

Dike surrounding area; sweep up spillage, Dispose of in accordance with information given under Pesticide Disposal. Wash spill area with water, absorb with sand, cat litter or commercial clay, sweep up and dispose of in an approved manner. Place damaged container in a large holding container. Identify contents per required hazardous waste labeling regulations.

### Pesticide Disposal

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. 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 of the nearest EPA Regional Office for guidance.

### Container Handling

**Nonrefillable container.** Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: (For containers greater than 5 gallons) Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. (For containers 5 gallons or less) Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, 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.

**Returnable/Refillable Containers** - 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 refiller. To clean the container before final disposal, empty the remaining contents into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

**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 pads 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 feet of any well are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or washwater, and rainwater that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment 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 wellhead setbacks and operational containment.

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

## **PRODUCT INFORMATION**

F9016-2 DF is a dispersible granule formulation to be mixed with water and sprayed for selective early preplant, preplant burndown, preplant incorporated or preemergence weed control in soybeans. When applied according to the instructions on this label, it will control many broadleaf weeds and provide partial control of annual grasses.

Applications of F9016-2 DF 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 also contains use information which is applicable to all F9016-2 DF use geography.

## **BIOLOGICAL ACTIVITY**

F9016-2 DF rapidly inhibits the growth of susceptible weeds. Following an application, 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. F9016-2 DF provides partial control of some annual grasses when used as an early preplant, preplant burndown, preplant incorporated or preemergence application, but other products may 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 F9016-2 DF, like other soil applied herbicides, may injure soybeans.

Best results are obtained if F9016-2 DF is followed by rainfall or irrigation before weeds germinate. Several small rainfalls of less than 1/4" each are not as beneficial as one large rainfall of 1/2-1". 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.

## ROTATIONAL GUIDELINES FOR ALL F9016-2 DF APPLICATIONS

When used as described, Table 1 describes the minimum length in months from the time of F9016-2 DF application until F9016-2 DF treated soil can be replanted to the crops listed in Table 1. Cover crops for soil health and erosion control can be planted at any time after an application of F9016-2 DF, but do not use for food or feed. Residual activity of F9016-2 DF may result in injury to some cover crop species if planted too soon following application. Consult your local University extension service for cover crop sensitivity to F9016-2 DF. **Prior to using F9016-2 DF, consideration should be given to crop rotation plans.** Crops other than soybeans may be extremely sensitive to low concentrations of F9016-2 DF remaining in the soil the next planting season. Choice of rotation crop is restricted following application of F9016-2 DF. When a recommended tank mix is used, consult the tank mix partner labels for recropping instructions and follow the directions that are most restrictive.

**For Herbicide Use Rates – (See Table 2)**

**Refer to Importance of Soil pH section for additional information**

**Table 1**

Crop	<u>Rotation Interval A</u>	<u>Rotation Interval B</u>	<u>Rotation Interval C</u>
	For use only in AL, AR, GA, IL, IN, KS, KY, LA, MO, MS, NE (east of Highway 281 and south of Highway 30), NC, OH, OK, PA, SC, TN and TX	For use only in DE, IA, MD, MI, MN, NE (west of Highway 281 and north of Highway 30), NJ, VA, WI and WV  where soil pH is <6.8 <u>and</u> rates are <5 oz/a	For use only in DE, IA, MD, MI, MN, NE (west of Highway 281 and north of Highway 30), NJ, VA, WI and WV  where soil pH is 6.8 to 7.6 <u>and/or</u> rates are >5 oz/A
	Recropping Interval in Months	Recropping Interval in Months	Recropping Interval in Months
Alfalfa	12	12	18
Barley	4	4	4
Cabbage	18	18	18
Canola (rapeseed)	36	36	36
Carrot	36	36	36
Clover	18	18	18
Corn, field**	10	10	18
Corn, sweet	18	18	18
Cotton	18 or 12***	18 or 12***	18
Cucumber	18	18	18
Dry Beans	12	12	18
Flax	18	18	18
Lentils	18	18	18



Mustard	18	18	18
Oats	12	12	18
Onion	36	36	36
Peanuts	9	18	18
Potato	36	36	36
Pumpkin	18	18	18
Rice	10	10	18
Rye	4	4	4
Sorghum	18* or 10	18* or 10	18
Soybeans †	Anytime	Anytime	Anytime
Sugar Beets	36	36	36
Sunflowers	18	18	18
Tobacco	10	10	18
Tomato (transplant)	15	15	18
Watermelon	18	18	18
Wheat	4	4	4
Any other crop not listed	36	36	36

Use rotational interval C above, if an application of F9016-2 DF herbicide is applied in the states of AL, AR, GA, KY, LA, MO, Bootheel, MS, NC, OK, SC, TN and TX where soil pH is greater than 6.8.

Crops that have rotational intervals greater than 12 months after a F9016-2 DF application are the result of crop injury concerns. The crops should only be planted after a successful bioassay.

\* Sorghum may be planted after 10 months where F9016-2 DF herbicide was applied at rates 6.4 oz/acre or less.

\*\* Field corn includes corn grown for grain, silage, popcorn, seed corn.

\*\*\* Cotton may be planted after 12 months where F9016-2 DF herbicide was applied at rates 5 oz/acre or less and meets the following conditions:

- Medium and fine soils
- pH <7.2
- Rainfall or irrigation must exceed 15" after application of F9016-2 DF to rotate to cotton

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

## WEEDS CONTROLLED – PREEMERGE:

When used as directed F9016-2 DF will provide control of the following weed species:

Carpetweed	Russian Thistle
Copperleaf, Hophornbeam	Nutsedge, Purple
Copperleaf, Virginia	Nutsedge, Yellow
Florida beggarweed	Pigweed
Jimsonweed	Palmer amaranth
Kochia	Redroot
Lambsquarters	Smooth
Mallow, Venice	Spiny amaranth
Morningglory	Poinsettia, wild
Annual	Prickly sida (teaweed)
Ivyleaf	Purslane, common
Entireleaf	Senna, Coffee
Small flower	Smartweed (annual)
Tall	Spurge, Spotted
Mustard, wild	Velvetleaf
Nightshade, Black	Waterhemp, common
Nightshade, Eastern Black	Waterhemp, tall
	Star of Bethlehem

**When used as directed F9016-2 DF will provide partial control of the following weeds:**

Barnyardgrass	Mexicanweed
Burcucumber	Panicum, Texas and fall
Cocklebur	Pitted Morningglory
Crabgrass	Ragweed, common
Foxtail, species	Ragweed, giant
Goosegrass	Sesbania, Hemp
Johnsongrass, seedling	Sicklepod
Nightshade, Hairy	Signalgrass, broadleaf
Marestail*	Sunflower, wild

\*F9016-2 DF must be tank mixed with 2,4-D, dicamba or Sharpen<sup>1</sup> for burndown of marestail.

Pitted morningglory, cocklebur, common ragweed, giant ragweed and wild sunflower may emerge at various times during the growing season. They may require cultivation or a follow up application of postemergence herbicides for season-long control.

## **APPLICATION INFORMATION**

### **Equipment/Spray Volumes**

**Ground Application:** Apply uniformly by ground equipment with a properly calibrated sprayer equipped with fan-type nozzles or other appropriate nozzles. Adjust spray pressures to recommendations that are appropriate for the nozzle type being utilized. Sprayer and spray nozzles should be set to minimize the risk of fine droplets (<150 microns), yet achieve adequate coverage of existing weeds. Use nozzles that require 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 product in suspension. Avoid overlap and shut off spray booms while starting, turning, slowing or stopping, as injury to the crop may result.

### **Aerial Application**

F9016-2 DF may be applied by air using properly calibrated nozzle types and arrangements that will provide optimum coverage while producing minimal amounts of fine droplets. Apply sufficient spray volume to achieve adequate coverage. Apply a minimum of five (5) gallons of finished spray per acre. Do not apply when wind speed favors drift beyond the area intended for treatment.

### **Spray Tank Preparation**

It is important that spray equipment is clean and free of existing pesticide deposits before using F9016-2 DF. 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.

### **Mixing Instructions**

1. Fill the tank 1/4 to 1/3 full of water.
2. While agitating, add the required amount of F9016-2 DF.
3. Once the F9016-2 DF is fully dispersed, maintain agitation and continue filling tank with water.
4. F9016-2 DF should be thoroughly mixed with water in the spray tank before adding any other material. As the tank is filling add (in the following order): other herbicide(s), the required spray adjuvant, and ammonium sulfate and/or liquid nitrogen fertilizer where required.
5. Apply F9016-2 DF spray solution within 24 hours of mixing to avoid product degradation.
6. If the mixture has settled, thoroughly reagituate before using.
7. To improve mixing with liquid fertilizers prepare a slurry in water before adding to spray tank.

## **SPRAYER CLEANUP**

To avoid subsequent injury to desirable crops, thoroughly clean all mixing and spray equipment immediately following applications of F9016-2 DF 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 (containing 3% active) per 100 gallons of water
2. Commercial spray tank cleaner

Do not drain or flush equipment on or near desirable trees or plants.

Do not contaminate any body of water including irrigation water that may be used on other crops.

Should small quantities of F9016-2 DF remain in inadequately cleaned mixing, loading, and/or spray equipment, they may be released during subsequent applications potentially causing effects to certain crops and other vegetation. FMC accepts no liability for any effects due to inadequately cleaned equipment.

## 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 droplets of size >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.

### **RESISTANCE MANAGEMENT**

F9016-2 DF is a premixture of sulfentrazone (WSSA Group 14) and chlorimuron-ethyl (WSSA Group 2) herbicides. 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.

### **IMPORTANT PRECAUTIONS**

1. Back to back application of ALS or ALS containing herbicides can occasionally result in residual herbicide stacking and potential crop injury. The applicator and grower are responsible and should be aware of previous herbicide use and potential interaction it may have with F9016-2 DF application
2. All direct or indirect contact (such as spray drift) to other crops or to land scheduled to be planted to crops other than soybeans should be avoided.
3. Ensure the seed furrow is closed and the seed covered on acres treated with F9016-2 DF
4. 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 outgrow stunting once favorable growing conditions return.
5. Do not apply F9016-2 DF if there are visible signs of cracking due to soybean emergence, or serious crop injury such as but not limited to stand loss may result.
6. 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.
7. Do not tankmix F9016-2 DF with organophosphate insecticides. Do not apply F9016-2 DF within 14 days before or after an organophosphate insecticide, as severe crop injury may occur.
8. When tank mixing, follow the most restrictive use rates and precautions of the mixing partners.

### **IMPORTANCE OF SOIL PH**

Soil pH varies greatly, even within the same field. pH variations as much as 2 pH units are common. Composite soil samples taken across an entire field, such as those samples taken for soil fertility recommendations, may not detect areas of high pH. Sub-sampling is recommended for areas likely to have pH values higher than the field average. The following is a non-inclusive list of potential high pH areas where subsampling is recommended.

- Where different soil types are evident within a field, sample soil types separately.
- Where conditions vary within a field, sample areas separately, such as:
  - Areas bordered by limestone gravel roads,
  - River bottoms subject to flooding,
  - Low areas in hardpan soils where evaporative ponds may occur,
  - Eroded hillsides,
  - Along drain tile lines, and
  - Areas where drainage ditch spoil has been spread.

- Where lime has not been deeply incorporated, soil may exhibit significantly higher pH values in the upper 3 inches of soil. Composite soil samples taken at a 6-8 inch depth may not reflect the elevated pH near the surface. In these cases shallow sampling, the upper 3 inches, is advised. Determine soil pH by laboratory analysis using a 1:1 soil:water suspension.

## APPLICATION DIRECTIONS FOR USE ON SOYBEANS

- Apply F9016-2 DF according to rates in Table 2 as directed for specific types of application and geographic areas.
- Follow all label restrictions regarding soil type, soil pH, organic matter, rotational crop intervals, geographic location, and weed pressure, in selecting the rate of F9016-2 DF from Table 2.
- Use of F9016-2 DF on soils which exceed pH 6.8 may result in unacceptable injury to the following rotational crop. F9016-2 DF may be used on fields which are generally pH 6.8 or less, but which may contain isolated areas where the pH exceeds 6.8 only if the following rotational crop is soybeans.

## RESTRICTIONS

**Single application:** Do not apply a full rate of F9016-2 DF more than once per year.

**Split application:** Two applications totaling the full labeled rate of F9016-2 DF (see Table 2) may be made per year.

This product is for use only in AL, AR, DE, GA, IA, IL, IN, KS, KY, LA, MD, MI, MN, MO, MS, NC, NE, NJ, OH, OK, PA, SC, TN, TX, VA, WI, and WV.

Do not apply to black belt soil of Alabama or Mississippi with a soil pH >6.8 or history of nutrient deficiency such as iron chlorosis, as injury may occur.

Do not follow F9016-2 DF with a post-emergence application of another chlorimuron-ethyl containing herbicide in the same cropping season.

Do not apply F9016-2 DF to soils with soil pH greater than 7.6.

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

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

Do not apply F9016-2 DF if there are visible signs of cracking due to soybean emergence, or serious crop injury may result.

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.

Do not tank mix F9016-2 DF with organophosphate insecticides. Do not apply F9016-2 DF within 14 days before or after an application of an organophosphate insecticide, as severe crop injury may occur.

When tank mixing this product with other pesticides, follow the most restrictive of the labeling limitations and precautions of all products used in the mixture.

### Table 2: Herbicide Use Rate

**Fall application, Early Pre-plant, Preplant Burndown, Pre-plant Incorporated, and Preemergence: No-Till, Minimum-till, Conventional tillage**

Soil Texture	Organic Matter	
	0.5 – 2%	2 – 4%
	Ounces Product (lb a.i.) Per Acre	
<b>Coarse*:</b> Loamy Sand, Sandy loam	5.0 (0.206) – 6.0 (0.248)	6.0 (0.248) – 7.0 (0.289)
<b>Medium:</b> Loam, Silt Loam, Silt, Sandy clay loam	6.0 (0.248) – 7.5 (0.309)	7.0 (0.289) – 8.0 (0.33)
<b>Fine:</b> Silty Clay Loam, Clay Loam, Clay	7.0 (0.289) – 8.0 (0.33)	8.0 (0.33) – 9.6 (0.396)

**\*Do not use this product in coarse sand soils with <1% organic matter.**

Apply F9016-2 DF according to this rate table for types of application and specific geographic areas.

## APPLICATION METHODS:

Do not apply F9016-2 DF after the soybean crop has emerged or severe injury or death of the crop may occur. F9016-2 DF may be applied by any of the methods listed below.

### CONSERVATION TILLAGE:

#### Early Pre-plant in No-Till, Minimum Till, or Stale seedbed

F9016-2 DF applied early Pre-plant will provide burndown of many existing weeds as well as preemergence broadleaf weed control. When applied as a burndown treatment, F9016-2 DF is rainfast after one hour. For burndown or control of existing vegetation, an appropriate burndown herbicide at labeled rates is recommended such as 2,4-D, glyphosate, glufosinate, paraquat, dicamba or Sharpen etc. and should be applied in combination with F9016-2 DF. Follow all label directions for the burndown herbicide including application timing, spray volume, adjuvants to achieve control of targeted weeds. For applications of F9016-2 DF made from 30 – 60 days before planting apply the higher rate in the appropriate soil range from Table 2 depending on the soybean system being grown.

#### Preplant Incorporated

Uniformly incorporate F9016-2 DF or F9016-2 DF tank mixes no deeper than 2" prior to planting soybeans. If tank-mixing F9016-2 DF with a companion herbicide, follow all label instructions for the companion herbicide, including proper incorporation of the companion herbicide in the top 2" of soil. Improper incorporation can result in erratic weed control or potential crop injury.

#### Preemergence

F9016-2 DF may be applied at planting time or within 3 days after planting, but before seed emergence. F9016-2 DF may be applied alone or in tank mix combinations with other registered soybean herbicides. When applied in tank mix combinations, follow applicable use directions, including application rates, precautions and restrictions of each product in the mixture. The seed furrow should be completely closed and seed covered before any applications of F9016-2 DF.

#### Fall Application and Spring Pre-plant Burndown of Broadleaf Weeds

F9016-2 DF can provide for some increased burndown activity on emerged weeds in no-till applications, but is not intended to replace part or all of an appropriate preplant burndown program. For control of the weeds listed below in no-till / minimum till fields, F9016-2 DF must be tank-mixed or used in combination with a full burndown program. This may include 2,4-D alone or in combination with Aim<sup>1</sup>, dicamba, glyphosate, glufosinate, paraquat, or other appropriate burndown herbicides in tank-mixes at their appropriate rate for the size and species of weeds present. Reduced rates of F9016-2 DF and/or the corresponding burndown partner herbicides can result in weed escapes and unsatisfactory performance.

Chickweed*	Nightshade species
Dandelion	Pennycress
Garlic, wild	Pigweeds
Henbit	Ragweed, common
Lambsquarters	Ragweed, giant
Lettuce, prickly	Shepherd's-purse
Marestail**	Smartweeds, annual
Mustard, tansy	Sunflower
Mustard, wild	Waterhemp species

\*For chickweed control add glyphosate or Express<sup>6</sup> or Dicamba.

\*\* For glyphosate resistant biotypes, include an alternative and effective mode of action to achieve complete burndown.

For burndown control, pick the appropriate rate from **Rate Table 2** and apply with:

- For complete burndown of emerged annual grasses or broadleaf weeds or for burndown of weeds not listed above, F9016-2 DF must be tank mixed with: Sharpen<sup>1</sup>, glyphosate, glufosinate, paraquat, 2,4-D alone or in combination with Aim or other appropriate burndown herbicides. Some weed species have developed resistance to one or more herbicide classes. The burndown tank-mix with F9016-2 must contain one or more herbicides that will control targeted weed species and resistant bio-types.
- Crop Oil Concentrate (COC) or Methylated Seed Oil (MSO) at 1% v/v 1 gallon per 100 gallons of spray solution, or Non-ionic surfactant (NIS) at 1 qt./100 gallon of spray solution.
- In addition to the specific adjuvants above, other adjuvants may be used if they provide the same or similar functions as those previously mentioned. The addition of other adjuvants or fertilizers such as ammonium sulfate (AMS) may aid in control of weeds when used with appropriate companion herbicides. Consult specific companion herbicides for additional adjuvant, and fertilizer recommendations when applying for burndown of existing vegetation.
- Use flat fan nozzles or other appropriate nozzle types and a minimum of 10 gallons of water per acre. Where dense vegetation or heavy crop residues are present, increasing the spray volume to 15-20 gallons per acre or more may improve spray coverage and weed control.

To select the proper tank mix product, identify the weeds which need to be controlled and consult the product labels to determine which product is needed. Consult the companion tank mix herbicide label for use instructions, rates, precautions, restrictions, and other use information.

For instructions on how to prevent spray drift see Spray Drift Management section.

#### **LABEL TRACKING INFORMATION**

Label Code: 050115

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1. Sharpen a trademark of BASF
2. Express is a trademark of DuPont

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