



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

August 15, 2019

Shannon Cavanaugh  
Senior Registration Manager  
FMC Corporation  
2929 Walnut Street  
Philadelphia, PA 19104

Subject: Registration Review Label Mitigation for Chlorimuron and Sulfentrazone  
Product Name: F9016 DF Herbicide  
EPA Registration Number: 279-3413  
Application Date: Dec 15, 2017  
Decision Number: 553915 / 553939

Dear Shannon:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the Chlorimuron and Sulfentrazone Interim Decisions, and has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

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

A copy of your label stamped "Accepted" is enclosed. Products shipped after 12 months from the date of this amendment must bear the new revised label. Your release for shipment of the product bearing the amended label constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6.

If you have any questions about this letter, please contact Miguel Zavala by phone at 973-873-5298, or via email at [zavala.miguel@epa.gov](mailto:zavala.miguel@epa.gov).

Sincerely,

A handwritten signature in blue ink, appearing to read "Linda Arrington", with a stylized flourish at the end.

Linda Arrington, Branch Chief  
Risk Management and Implementation Branch 4  
Pesticide Re-Evaluation Division  
Office of Pesticide Programs

Enclosure

<b>Sulfentrazone</b>	<b>Group</b>	<b>14</b>	<b>Herbicide</b>
<b>Chlorimuron-ethyl</b>	<b>Group</b>	<b>2</b>	<b>Herbicide</b>

# F9016 DF Herbicide

EPA Reg. No. 279-3413

EPA Est. No.

Active Ingredients	By Wt.
Sulfentrazone*.....	62.22%
Chlorimuron Ethyl* .....	7.78%
Other Ingredients .....	30.00%
<b>TOTAL</b>	<b>100.00%</b>

\*F9016 DF contains 0.7 lb active ingredient per pound product (0.62 lb a.i./lb of sulfentrazone and 0.08 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 by mouth 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  
2929 Walnut Street  
Philadelphia, PA 19104



**ACCEPTED**

Aug 15, 2019

Under the Federal Insecticide, Fungicide  
and Rodenticide Act as amended, for the  
pesticide registered under

EPA Reg. No. 279-3413

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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.

### USER 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 product is known to leach through soil into groundwater under certain conditions as a result of label use. This product may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

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

**Surface water advisory:** This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of this product from runoff water and sediment. Runoff of this product will be greatly reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

### Windblown Soil Particles

This product has the potential to move off-site due to wind erosion. Soils that are subject to wind erosion usually have a high silt and/or fine to very fine sand fractions and low organic matter content. Other factors which can affect the movement of windblown soil include the intensity and direction of prevailing winds, vegetative cover, site slope, rainfall, and drainage patterns. Avoid applying this product if prevailing local conditions may be expected to result in off-site movement."

### Non-target Organism Advisory

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated area. Protect the forage and habitat of non-target organisms by minimizing spray drift. For further guidance and instructions on how to minimize spray drift, refer to the Spray Drift Management section of this label.

## 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. Triple rinse (or equivalent). 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.

## 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.

**Prior to using F9016 DF, consideration should be given to crop rotation plans.** Crops other than soybeans may be extremely sensitive to low concentrations of F9016 DF remaining in the soil the next planting season. Choice of rotation crop is restricted following application of F9016 DF. (See "ROTATIONAL CROP GUIDELINES" for your geographical region.)

Thoroughly clean F9016 DF from application equipment immediately after use and prior to spraying crops other than soybeans. Failure to remove even small amounts of F9016 DF from application equipment may result in injury to subsequently sprayed crops.

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 DF is a dispersible granule formulation to be mixed with water and sprayed for selective preemergence and preplant incorporated 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.

Preemergence and preplant incorporated applications of F9016 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 general use information which is applicable to all F9016 DF use geography.

## **BIOLOGICAL ACTIVITY**

F9016 DF rapidly inhibits the growth of susceptible weeds. Following application of preplant incorporation 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. F9016 DF provides partial control of some annual grasses when used preplant or preemergence 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 DF, like other soil applied herbicides, may injure soybeans.

Best results are obtained if F9016 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 DF APPLICATIONS**

When used as described, the table describes the minimum length in months from the time of F9016 DF application until F9016 DF treated soil can be replanted to the crops listed in the table. Cover crops for soil health and erosion control can be planted at any time after an application of F9016 DF, but do not use for food or feed. Residual activity of F9016 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 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.

## **ROTATIONAL GUIDELINE**

**For Full Use Rates – (See Rate Table 1)**

*Refer to Importance of soil pH for additional information*



Crop	Rotation Interval A IN, OH, MO, IL, KS, NE, OK Soil pH less than 7.2,  (If soil pH is greater than 7.2 use rotation interval B)	Rotation Interval B AL, AR, GA, KY, LA, MI, MS, MO Bootheel, NC, PA, SC, TN, and TX where soil pH is greater than 6.8  For those states listed above, if soil pH is less than 6.8 use rotation interval A)
	Recropping Interval in Months	Recropping Interval in Months
Soybeans †	Anytime	Anytime
Wheat, Barley, Rye	4	4
Oats	12	18
Alfalfa	12	18
Rice	10	18
Sorghum	18 or 10	18
Tobacco	10	18
Tomato (transplant)	12	18
Field Corn**	Anytime	Anytime
Dry Beans	12	18
Clover, Cotton, Cucumber, Flax, Peanuts, Pumpkin, Sunflower, Sweet Corn, Watermelon, Cabbage, Lentils, Mustard	18	18
Canola (rapeseed), Carrot, Onion, Potato, Sugar Beets	36	36
Any other crop not listed	36	36

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

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

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

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

## ROTATIONAL GUIDELINE

For Reduced Use Rates – (See Rate Table 2)

Refer to Importance of soil pH for additional information

Crop	Rotation Interval A All States, all pH's except those listed in column B	Rotation Interval B DE, IA, MD, MI, MN, NJ, VA, WI, WV soil pH greater than 6.8
	Recropping Interval in Months	Recropping Interval in Months
Soybeans †	Anytime	Anytime
Wheat, Barley, Rye	4	4
Oats	12	18
Alfalfa	12	18
Rice	10	18
Sorghum*	18 or 10	18
Tobacco	10	18
Tomato (transplant)	12	18
Field Corn**	Anytime	Anytime
Dry Beans	12	18
Clover, Cucumber, Flax, Pumpkin, Sunflower, Sweet	18	18

Corn, Watermelon, Cabbage, Lentils, Mustard		
Canola (rapeseed), Carrot, Onion, Potato, Sugar Beets	36	36
Cotton***	18 or 12	18 or 12
Peanuts	12	18
Any other crop not listed	36	36

Under rotational interval A of the **Reduced Rate Table** above, a pre-emergent application of a Chlorimuron ethyl product is not allowed in the states of AL, AR, GA, KY, LA, MO Bootheel, MS, NC, OK, SC, TN and TX where soil pH is greater than 7.0.

Do not use full use rates in the states of DE, IA, MD, MI, MN, NJ, VA, WI and WV.

\* Sorghum may be planted after 10 months where F9016 DF 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 DF was applied at rates of 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 DF to rotate to cotton.

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

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

## WEEDS CONTROLLED – PREEMERGE:

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

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

\*Weed species which can germinate deep in the soil such as pitted morningglory, cocklebur, and giant ragweed or other weeds; such as nutsedge, which may emerge at various times during the growing season may require a cultivation or a follow up application of postemergence herbicides for season-long control.

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

Barnyardgrass	Mexicanweed
Burcucumber	Panicum, Texas and fall
Crabgrass	Sesbania, Hemp
Foxtail, species	Sicklepod
Goosegrass	Signalgrass, broadleaf
Johnsongrass, seedling	

For additional instructions on weed control, see comments following Table 1 on page 12.

## 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 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 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 DF.
3. Once the F9016 DF is fully dispersed, maintain agitation and continue filling tank with water.
4. **F9016 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, ammonium sulfate, and/or liquid nitrogen fertilizer where required.
5. Apply F9016 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 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 (contains 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 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**

### **SPRAY DRIFT MANAGEMENT**

#### **Ground Boom Applications:**

- Apply with the nozzle height recommended by the manufacturer, but no more than 3 feet above the ground or crop canopy.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a Coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a Medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.

#### **Aerial Applications:**

- Aerial application is allowed only when environmental conditions prohibit ground application.
- Do not release spray at a height greater than 10 feet above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a Coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a Medium or coarser droplet size (ASABE S572.1).
- The boom length must not exceed 65% of the wingspan for airplanes or 75% of the rotor blade diameter for helicopters.
- Applicators must use one-half swath displacement upwind at the downwind edge of the field.
- Nozzles must be oriented so the spray is directed toward the back of the aircraft.
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.

#### **Boom-less Ground Applications:**

- Applicators are required to use a Medium or coarser droplet size (ASABE S572.1) for all applications.

- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.

### **SPRAY DRIFT MANAGEMENT ADVISORIES**

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.  
BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

### **IMPORTANCE OF DROPLET SIZE**

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

#### **Controlling Droplet Size – Ground Boom**

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

#### **Controlling Droplet Size – Aircraft**

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

### **BOOM HEIGHT – Ground Boom**

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop and have minimal bounce.

### **RELEASE HEIGHT - Aircraft**

Higher release heights increase the potential for spray drift. When applying aerially to crops, do not release spray at a height greater than 10 ft above the crop canopy, unless a greater application height is necessary for pilot safety.

### **SHIELDED SPRAYERS**

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

### **TEMPERATURE AND HUMIDITY**

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

### **TEMPERATURE INVERSIONS**

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

### **WIND**

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

### **Boom-less Ground Applications:**

- Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

## **WEED RESISTANCE MANAGEMENT**

F9016 DF Herbicide, which contains the active ingredients sulfentrazone and chlorimuron-ethyl is a group 14 and 2 herbicide based on the mode of action classification system of the Weed Science Society of America.

Proactively implementing diversified weed control strategies to minimize selection for weed populations resistant to one or more herbicides is a best practice. A diversified weed management program may include the use of multiple herbicides with different sites of action and overlapping weed spectrum with or without tillage operations and/or other cultural practices. Research has demonstrated that using the labeled rate and directions for use is important to delay the selection for resistance.

The continued effectiveness of this product depends on the successful implementation of a weed resistance management program.

To aid in the prevention of developing weeds resistant to this product, users should:

- Scout fields before application to ensure herbicides and rates will be appropriate for the weed species and weed sizes present.
- Start with a clean field, using either a burndown herbicide application or tillage.
- Control weeds early when they are relatively small (less than 4 inches).
- Apply full rates of F9016 DF Herbicide for the most difficult to control weed in the field at the specified time (correct weed size) to minimize weed escapes.

- Scout fields after application to detect weed escapes or shifts in control of weed species.
  - Control weed escapes before they reproduce by seed or proliferate vegetatively.
  - Report any incidence of non-performance of this product against a particular weed to your FMC representative, local retailer, or county extension agent.
  - Contact your FMC representative, crop advisor, or extension agent to find out if suspected resistant weeds to these MOAs have been found in your region. Do not assume that each listed weed is being controlled by multiple sites of action. Products with multiple active ingredients are intended to broaden the spectrum of weeds that are controlled. Some weeds may be controlled by only one of the active ingredient in this product.
  - If resistance is suspected, treat weed escapes with an herbicide having a site of action other than Group 14 or 2 and/or use nonchemical methods to remove escapes, as practical, with the goal of preventing further seed production.
  - Suspected herbicide-resistant weeds may be identified by these indicators:
    - Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
    - A spreading patch of non-controlled plants of a particular weed species; and
    - Surviving plants mixed with controlled individuals of the same species.
- Additionally, users should follow as many of the following herbicide resistance management practices as is practical:
- Use a broad spectrum soil-applied herbicide with other sites of action as a foundation in a weed control program.
  - Utilize sequential applications of herbicides with alternative sites of action.
  - Rotate the use of this product with non-Group 14 or 2 herbicides.
  - Avoid making more than two applications of F9016 DF Herbicide and any other Group 14 or 2 herbicides within a single growing season unless mixed with an herbicide with a different site of action with an overlapping spectrum for the difficult-to-control weeds.
  - Incorporate non-chemical weed control practices, such as mechanical cultivation, crop rotation, cover crops and weed-free crop seeds, as part of an integrated weed control program.
  - Use good agronomic principles that enhance crop development and crop competitiveness.
  - Thoroughly clean plant residues from equipment before leaving fields suspected to contain resistant weeds.
  - Manage weeds in and around fields, during and after harvest to reduce weed seed production.

## IMPORTANT PRECAUTIONS

1. Back to back application of ALS or ALS containing herbicides can occasionally result in residual herbicide stacking and potential crop injury. Applicator and/or grower is responsible should be aware of previous herbicide use and potential interaction it may have with F9016 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 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 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 tank mix F9016 DF with organophosphate insecticides. Do not apply F9016 DF within 14 days before or after an application of an organophosphate insecticide, as severe crop injury may occur.

## 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.

## USE DIRECTIONS FOR SOYBEANS

Apply F9016 DF according to Rate Tables 1 or 2 as directed for specific types of application and geographic areas. Do not use the full use rate (Rate Table 1) in DE, IA, MD, MI, MN, NJ, VA, WI and WV.

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 DF from Rate Table 1 or Table 2.

**Use of F9016 DF on soils which exceed pH 6.8 may result in unacceptable injury to the following crop. F9016 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 or a chlorimuron ethyl resistant corn variety. Consult with your local seed supplier for potential resistant/tolerant varieties.**

### Restrictions

- Do not use F9016 DF in CO, WY, ND, NY or SD at any rate. Do not apply F9016 DF in Nebraska west of US Hwy 281 and north of US Hwy 30.
- 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 DF with a post-emergence application of another chlorimuron-ethyl containing herbicide in the same cropping season.
- Do not apply this product through any type of irrigation system.
- Do not feed treated soybean forage or soybean hay to livestock.
- Single application: Do not apply more than 9.6 ounces of F9016 DF (0.366 lb ai sulfentrazone and 0.048 lb ai chlorimuron-ethyl) more than once per season.
- Split application:** Two applications totaling 9.6 ounces of F9016 DF (0.366 lb ai sulfentrazone and 0.048 lb ai chlorimuron-ethyl) may be made per season.
- Do not make more than 2 applications per year.
- Do not apply within 7 days if a second application is necessary.
- 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.

### Full Use Rate

#### Rate Table 1:

**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(0.219) – 6.0 (0.263)	6.0(0.263) – 7.0(0.306)
<b>Medium:</b> Loam, Silt Loam, Silt, Sandy clay loam	6.5(0.284) – 7.5(0.328)	7.0(0.306) – 8.0(0.350)
<b>Fine:</b> Silty Clay Loam, Clay Loam, Clay	7.0(0.306) – 8.0(0.350)	8.0(0.350) – 9.6(0.420)

\*Do not use this product in coarse sand soils with <1% organic matter.  
Apply F9016 DF according to Rate Tables for types of application and specific geographic areas.

### Limited Residual Rate for Planned Sequential Application Program

#### Rate Table 2:

- Use rates in Table 2 are to be used in conjunction with an effective planned POST herbicide program; F9016 DF at these reduced rates will provide early season control or suppression to reduce early season weed competition. If resistance with the POST herbicide is documented in your area, use rates in Table 1.

**Fall application, Early Pre-plant, Early Pre-plant Burndown, Pre-plant Incorporated, 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	3.0(0.131) – 4.0(0.175)	3.2(0.140) – 4.0(0.175)
<b>Medium:</b> Loam, Silt loam, Silt, Sandy clay loam	3.2(0.140) – 4.0(0.175)	3.2(0.140) – 4.8(0.210)
<b>Fine:</b> Silty Clay Loam, Clay Loam, Clay	4.0(0.175) – 5.0(0.219)	4.0(0.175) – 5.0(0.219)

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

## APPLICATION METHODS:

Do not apply F9016 DF after the soybean crop has emerged or severe injury or death of the crop may occur.

F9016 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 DF applied Early Pre-plant must be applied in combination with the appropriate burndown herbicide such as glyphosate, glufosinate, paraquat, and/or 2,4-D to achieve acceptable control of existing weeds during application. When applied as a burndown treatment, F9016 DF is rainfast after one hour. For burndown or control of existing vegetation, an appropriate burndown herbicide at labeled rates is recommended such as glyphosate, etc. Follow all label directions for the burndown herbicide including application timing, spray volume, adjuvants to achieve control of targeted weeds. For applications of F9016 DF made from 30 – 60 days before planting apply the higher rate in the appropriate soil range from tables 1 or 2 depending on the soybean system being grown.

### PREPLANT INCORPORATED

Uniformly incorporate F9016 DF or F9016 DF tank mixes no deeper than 2" prior to planting soybeans. If tank-mixing F9016 DF with a companion herbicide, follow all label instructions for 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 DF may be applied at planting time or within 3 days after planting, but before seed emergence. F9016 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 DF.

## FALL APPLICATION AND SPRING PRE-PLANT BURNDOWN OF BROADLEAF WEEDS

F9016 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 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 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, Express 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 1 or 2** and apply with:

- For complete burndown of emerged annual grasses or broadleaf weeds or for burndown of weeds not listed above, F9016 DF must be tank mixed with: glyphosate, glufosinate, paraquat, 2,4-D alone or in combination with Aim<sup>1</sup> or other appropriate burndown herbicides.
- 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.
- For burndown of larger annual grasses or broadleaf weeds exceeding 2-3", or for burndown of weeds not listed above, F9016 DF may be tankmixed with glyphosate, glufosinate, paraquat, 2,4-D alone or in combination with Aim<sup>1</sup>.

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 section on Spray Drift Management on page 9.

## LABEL TRACKING INFORMATION

Label Code: 080918



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