



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

March 6, 2020

Shannon Cavanaugh  
FMC Corporation  
2929 Walnut Street  
Philadelphia, PA 19104

Subject: Label Amendment – Revising wording and making format changes  
Product Name: F9312-3  
EPA Registration Number: 279-3464  
Application Date: 3/22/2018  
Decision Number: 539843

Dear Ms. Cavanaugh:

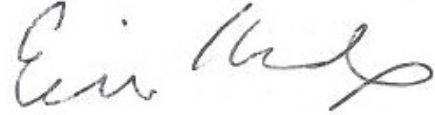
The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing 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 with FIFRA section 6. If you have any questions, please contact Nathan Mellor by phone at 703-347-8562, or via email at [mellor.nathan@epa.gov](mailto:mellor.nathan@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Erik Kraft". The signature is written in a cursive style with a large, sweeping flourish at the end.

Erik Kraft, Product Manager 24  
Fungicide and Herbicide Branch  
Registration Division (7505P)  
Office of Pesticide Programs

Enclosure

**ACCEPTED**  
 03/06/2020  
 Under the Federal Insecticide, Fungicide  
 and Rodenticide Act as amended, for the  
 pesticide registered under  
 EPA Reg. No. 279-3464

Pyoxasulfone	Group	15	Herbicide
Carfentrazone-ethyl	Group	14	Herbicide

**F9312-3**

**For weed control in corn, cotton, dry shelled pea and bean (crop group 6c), fallow, flax, peanut, soybean, sunflower (subgroup 20B), and wheat.**

EPA Reg. No. 279-3464	EPA Est. 279-XX
<b>ACTIVE INGREDIENTS</b>	<b>By Wt.</b>
Pyoxasulfone.....	37.10%
Carfentrazone-ethyl .....	2.65%
<b>Other Ingredients</b> .....	60.25%
Total:	100.00%

F9312-3 is a suspoemulsion containing 4.00 lbs a.i./gal (containing 3.733 lbs a.i. of pyoxasulfone and 0.267 lbs a.i. of carfentrazone-ethyl)

**KEEP OUT OF REACH OF CHILDREN  
 CAUTION/AVISO**

**FIRST AID**

**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.

**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.

**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.



FMC Corporation  
 2929 Walnut Street,  
 Philadelphia, PA 19104

**Net Contents:**

## **ATTENTION**

Although this label may appear similar to the label on a product you may have used, there may be important label differences. Users must read, understand and strictly follow all label directions, precautions and restrictions.

It is the user's responsibility to be sure the product is approved for sale or use on the intended crop and for use in the specific geographic area.

It is the user's responsibility to be aware of and to follow all State or local precautions or restrictions not appearing on this product label. Prior to purchase or use of this product, read the Conditions of Sale and Limitation of Warranty and Liability on this label. If the terms and conditions are unacceptable, return the product immediately in the original and unopened container.

## **PRECAUTIONARY STATEMENTS**

### Hazards to Humans and Domestic Animals

#### **Caution**

Harmful if absorbed through skin. Harmful if swallowed. Causes moderate eye irritation. Avoid contact with skin, eye or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

### **Personal Protective Equipment (PPE)**

Applicators and other handlers must wear:

- Long sleeved shirt and long pants
- Chemical resistant gloves such as barrier laminate, butyl rubber  $\geq$  14 mils, or viton  $\geq$  14 mils
- Shoes plus socks

For aerial applications, mixers and loaders must also wear:

- PF .5 respirator

### **User Safety Requirements**

**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.**

#### User Safety Recommendations:

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 fish and algae, aquatic invertebrates, and to some plants at very low concentrations. **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 from treated areas may be hazardous to terrestrial and aquatic plants in neighboring areas. **DO NOT** contaminate water when disposing of equipment wash waters or rinsate. **DO NOT** discharge effluent containing this active ingredient into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge, **DO NOT** discharge effluent containing this product into sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

**DO NOT** use or store near heat or open flame.

**Ground Water Advisory:** This chemical and its degradation products have properties and characteristics associated with chemicals detected in ground water. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow.

**Surface Water Advisories:** **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 aquatic organisms in water adjacent to treated areas. **DO NOT** contaminate water when disposing of equipment wash waters or rinsate.

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 a high potential for reaching both surface water and aquatic sediment via runoff for several months or longer 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 pyroxasulfone and its degradation product, (5- difluoromethoxy-1H-pyrazol-4-yl) methanesulfone acid (M1), from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

**Point Source Contamination:** To prevent point source contamination **DO NOT** mix or load this or any other pesticide within 50 feet of wells (including abandoned wells and drainage wells, sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs). This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or dike mixing/ loading areas as described below.

Mixing, loading, rinsing, or washing operations performed within 50 feet of a well are allowed only when conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be on or move across the pad. The pad must be self contained to prevent surface water flow over or from the pad. The pad capacity must be maintained at 110% of that of the largest pesticide container or application equipment used on the pad and has sufficient capacity to contain all products spills, equipment or container leaks, equipment wash waters and rainwater that may fall on the pad. The containment capacity does not apply to vehicles delivering pesticides shipments to the mixing/ loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.

Care must be taken when using this product to prevent back siphoning into wells, spills or improper disposal of excess pesticide, spray mixes, or rinsates. Check valves or anti-siphoning devices must be used on all mixing equipment.

**Endangered Species Protection Requirements:** This product may have effects on federally listed threatened or endangered plant species or their critical habitat. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the county or parish in which you are applying the pesticide. To determine whether your county or parish has a Bulletin, and to obtain that Bulletin, consult "<http://www.epa.gov/espp/>", or call 1-800-447-3813 no more than 6 months before using this product. Applicators must use Bulletins that are in effect in the month in which the pesticide will be applied. New Bulletins will generally be available from the above sources 6 months prior to their effective dates.

## **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, 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, to the extent consistent with applicable law, 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 permitted by 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 Condition of Sale and Limitation of Warranty and Liability may not be amended by any oral or written agreement.**

## **STORAGE AND DISPOSAL**

**DO NOT** contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

### **Pesticide Storage**

Store product in original container only, well ventilated area, separately from fertilizer, feed, or foodstuffs and away from other pesticides. **DO NOT** contaminate water, food, or feed by storage or disposal. 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.

### **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**

**Metal or Plastic Containers** - 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. Then offer for recycling if available, or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

**(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 by other procedures approved by state and local authorities. **DO NOT** cut or weld metal containers. 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, or



puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

## **WEED RESISTANCE MANAGEMENT**

For resistance management, please note that F9312-3 contains both a Group 14/Carfentrazone-ethyl and a Group 15/Pyroxasulfone herbicide. Any weed population may contain plants naturally resistant to Group 14 and/or Group 15 herbicides. The resistant individuals may dominate the weed population if these herbicides are used repeatedly in the same fields. Appropriate resistance-management strategies must be followed.

F9312-3 contains pyroxasulfone which acts to inhibit very long-chain fatty acid synthesis as a Group 15 (WSSA)/ Group K3 (HRAC) herbicide. It is a root and shoot growth inhibitor that controls susceptible germinating seedlings before or soon after they emerge from the soil.

To delay herbicide resistance take one or more of the following steps:

- Rotate the use of F9312-3 or other Group 14 and/or Group 15 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g., higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed competitive crops or varieties) and other management practices.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include:
  - (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
  - (2) a spreading patch of non-controlled plants of a particular weed species;
  - (3) surviving plants mixed with controlled individuals of the same species.If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your local extension specialist or certified crop advisors for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact FMC Corporation.

## **DIRECTIONS FOR USE**

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

Read all Directions for Use carefully before applying.

**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.

**FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR WEED CONTROL, CROP INJURY, OR ILLEGAL RESIDUES.**

### **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, chemical resistant gloves such as barrier laminate, butyl rubber  $\geq$  14 mils, or viton  $\geq$  14 mils, and shoes plus socks.

### **PRODUCT INFORMATION**

F9312-3 can be applied in all tillage systems (conventional, reduced and no-tillage). F9312-3 can be applied in the fall or in the spring as a preplant burndown, preplant incorporated, preemergence, or early post emergence treatment for susceptible grass and broadleaf weeds in registered crops. Consult individual crop sections for specific use instructions on specific uses and application timings for each crop.

#### **Weed Size:**

When applying F9312-3 alone for post emergent weed control, apply before the weeds have reached the maximum height listed in **Table 2**. Application after weeds have reached the listed maximum height for control could result in commercially unacceptable weed control. For control of weeds in post applications larger than listed in Table 2 and for wider spectrum, apply in tank-mixture with herbicide(s) that are labeled for control of targeted weeds. Uniform spray coverage is necessary for optimum performance. Always read and follow label directions for all tank mix products before using.

#### **Rainfall / Irrigation Requirements:**

Moisture is necessary to activate the active ingredient pyroxasulfone in soil for weed control. Dry weather following applications of F9312-3 may reduce the effectiveness. However, when adequate moisture is received after dry conditions, F9312-3 will control susceptible germinating weeds. F9312-3 may not control weeds that germinate after application but before an activating rainfall and/or irrigation of at least 0.5 inch, or weeds that germinate through cracks resulting from dry soil. When adequate moisture is not received after F9312-3 application, weed control may be improved by irrigation. If no rain occurs within 7 days after application, apply overhead irrigation if available at 0.5 to 0.75 inch total volume. Use a maximum of 0.5 inch on coarse textured soils and a maximum of 1.0 inch on medium and fine textured soils. Refer to the crop specific information section for specific application rates, timings and the restrictions and limitations by crop and use

pattern.

**Application Precautions for Post Emergence Applications:**

1. If applying F9312-3 post emergence, avoid applications when crop foliage is wet due to heavy dew, rain, or irrigation moisture. If F9312-3 is applied post emergence, shortly before or soon after rainfall, crop response can occur. Recovery from this response is rapid and normal growth is not delayed. Crop yields will not be impacted by this crop response.
2. Foliar over-the-top application may not be allowed on certain crops. See specific crop directions for use restrictions.
3. Observe all precautions and limitations on the label of each product used in tank mixture with F9312-3.

**Restrictions:**

- **DO NOT** apply this product through any type of irrigation system.
- **DO NOT** use flood irrigation to apply, activate or incorporate this product.
- **DO NOT** apply to frozen or snow-covered ground.
- **DO NOT** use on peat or muck soils or mineral soils with 10% or more organic matter content.
- **DO NOT** apply if crop is under severe stress due to drought, cold weather, hail, flooding, water-logged or compacted soil, disease, insect damage, nutrient deficiency (especially low nitrogen levels), or other causes.
- **DO NOT** irrigate within 4 hours of a post emergence application of F9312-3. Rainfall or irrigation within 1 hour may wash F9312-3 off of the weeds during this period and may reduce post emergence performance.

**Proper Handling Instructions:**

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

Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 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 wash water, and rainwater that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at 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.

This product must be used in a manner which will prevent back siphoning into wells, spills or improper disposal of excess pesticide, spray mixtures or rinsates.

## **MIXING AND LOADING INSTRUCTIONS**

### **Mixing Instructions:**

1. The spray equipment must be clean before using this product. If it is contaminated with other materials, mixing problems and/or clogging can occur and/or crop response can occur.
2. Prepare no more spray mixture than is needed for the immediate application. Applying the product immediately after preparation ensures that it is in suspension. If application is delayed, agitation to re-mix the products and checking for resuspension ensures proper blending.
3. Maintain maximum agitation throughout the spraying operation.
4. Flush the spray equipment thoroughly after each use and apply rinsate to an appropriate area.

### **Mixing Steps:**

1. Add 1/4 -1/2 of the required amount of clean water and/or fertilizer to the spray or mixing tank.
2. While maintaining agitation, continue filling the spray tank. When the tank is 3/4 full, add any dry formulation tank mix partners and allow them to completely and uniformly disperse.
3. Add the required amount of F9312-3 to the spray tank while maintaining agitation. After the product has completely and uniformly dispersed into the tank mix, add any other liquid tank mix partners and allow them to completely and uniformly disperse.
4. Add the proper amount of spray adjuvant and continue agitation while adding the remaining water and/or fertilizer.
5. Complete filling the tank with clean water and/or fertilizer to maintain sufficient agitation at all times to insure surface action until the mixture is uniform.
6. After use, thoroughly clean the sprayer according to this label (see Cleaning Spray Equipment) and any tank mix partner labels.

### **Mixing F9312-3 in Tank Mixtures with Other Herbicides and Fluid Fertilizers**

F9312-3 is compatible with most commonly used herbicides, insecticides, fungicides, and spray adjuvants.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. F9312-3 can be used with commonly used clear fluid nitrogen fertilizers (e.g. 28% or 32% UAN). It is advised that a preliminary compatibility jar test be conducted using appropriate ratios of F9312-3 and fertilizer. Prepare no more spray mixture than is needed for the immediate application. Applying the product immediately after preparation ensures that it is in suspension. If application is delayed, agitation to re-mix the products and checking for resuspension ensures proper blending.

### **Compatibility Test**

Conduct a jar test before mixing to ensure F9312-3 compatibility with tank mix partners and adjuvants. The following test assumes a spray volume of 25 gallons per acre. For other spray volumes, make appropriate changes in the ingredient rates.

1. Add 1.0 pt. of water to each of 2 one-quart jars. Note: Use the same source of water and the other components in the compatibility test that will actually be tank mixed and applied. It is important that all components are mixed at a temperature similar to the temperature of those used for the actual application.
2. To one of the jars, add 1/4 tsp. or 1.2 milliliters of a compatibility agent approved for this use (1/4 tsp. is equivalent to 2 pt/100 gallons spray). Shake or stir gently to mix.
3. To both jars, add the appropriate amount of herbicide(s). If more than one herbicide is used, add them separately with dry herbicides first, flowables next and emulsifiable concentrates last. Finally, add the appropriate amount of any adjuvants that will be used. After each addition, shake or stir gently to thoroughly mix.  
(Dry Herbicides and Adjuvants: For each pound to be applied per acre, add 1.4 tsp. to each jar. Liquid Herbicides and Adjuvants: For each pint to be applied per acre, add 0.5 tsp. or 2.5 milliliters to each jar).
4. After adding all ingredients for the tank mixture, replace and tighten lids. Shake jars by inverting the mixture and then let stand for 15 to 30 minutes.
5. After waiting period, check jars for separation, precipitates, flakes, films on the side, gels or other signs of incompatibility. If mixtures separate but can be remixed, the mixture can be sprayed as long as good agitation is used.
6. If the mixtures are incompatible, then try these methods to overcome the problem. A) Make a slurry of dry pesticides in water before adding them to the tank B) Add more compatibility agent or increase the water volume of the mixture.
7. If tank mixtures are incompatible, then **DO NOT** spray the mixture. (Properly dispose of testing jars and any pesticide waste).

### **Spray adjuvants for burndown and post applications**

An adjuvant or a product containing an adjuvant approved for use on intended crop may be used with F9312-3 for maximum consistent performance.

#### **Adjuvants for F9312-3:**

Use a spray adjuvant from one of these classes for optimum performance for burndown or post applications.

**Non-ionic surfactant (NIS)** - must have a minimum of 80% of the constituents effective as spray adjuvant at the rate of 1 quart/100 gallons of spray volume (concentration of 0.25%).

**Crop Oil Concentrate (COC) or Methylated Seed oil (MSO)** - petroleum or vegetable-based oil containing not less than 12% emulsifier. Use 1-2 pts. /A and the concentration must not exceed 2.5% volume/volume. COC/MSO may improve performance under dry conditions and low relative humidity.

**Silicone-based surfactant** - apply at a rate of 1 qt/100 gallons or a spray volume concentration of 0.25% or as specified on the adjuvant label.

In addition to an adjuvant, urea ammonium nitrate (UAN) at 1-2 qts. /A or spray grade ammonium sulfate (AMS) at specified use rates may also be added to the spray solution.

#### **Adjuvants for F9312-3 in Tank Mixtures with Other Herbicides**

When tank mixing with other herbicides, use the adjuvant labeled for use with the tank mix partner. Follow all restrictions and precautions on the tank mix partner's label.

## **DRY FERTILIZER APPLICATION**

F9312-3 may be impregnated or coated onto dry bulk granular fertilizer carriers for fall and preplant surface and preplant incorporated applications for soil residual control of weeds prior to emergence. Dry fertilizer applications will not control emerged weeds. Follow all F9312-3 label restrictions, instructions and precautions.

All individual state regulations relating to dry granular fertilizer blending, registration, labeling and application are the responsibility of the individual and/or company selling the herbicide/ fertilizer mixture.

Select the F9312-3 application rate per acre from this label and determine the quantity of dry bulk fertilizer to be applied per acre (use a minimum of 200 pounds and a maximum of 750 pounds per acre). Higher fertilizer application rates allow for better fertilizer/herbicide distribution and may provide more consistent control. Use the equation below to determine the amount of F9312-3 needed per ton of fertilizer applied.

$(\text{fl oz. of F9312-3 per acre} \times 2000) / \text{Pounds fertilizer per acre} = \text{oz. of F9312-3 for 1 ton of fertilizer.}$

F9312-3 may be impregnated on many commonly used dry fertilizer but **DO NOT** impregnate on ammonium nitrate, fertilizers containing ammonium nitrate, potassium nitrate, sodium nitrate or powdered limestone.

To impregnate F9312-3 on bulk fertilizer, use a closed rotary drum mixer or other commonly used dry bulk fertilizer blender equipped with suitable spray equipment. Mix F9312-3 with sufficient water to form a sprayable slurry mixture. Spray nozzles be directed to provide uniform fertilizer coverage while avoiding spray contact with mixing equipment. Non uniform impregnation can cause crop injury or unsatisfactory performance.

Spray the herbicide mixture onto the fertilizer after blending has started. If necessary, include a suitable drying agent to ensure a spreadable herbicide impregnated fertilizer.

Apply treated fertilizer immediately after impregnation to avoid lump formulation and spreading difficulties. Accurate calibration of fertilizer application equipment and uniform fertilizer distribution is essential for satisfactory weed control. Apply the mixture uniformly to the soil with proper equipment immediately after blending and moisture is required for activation.

## **Ground Application**

Use sufficient spray pressure and spray volume for accurate and uniform application.

Refer to instructions for the spray equipment used to determine the actual minimum volume. The carrier may be either water or a sprayable fluid fertilizer. **DO NOT** apply this product without dilution in a spray carrier. For preplant, preplant incorporated, or preemergence applications, apply F9312-3 in a minimum of 5 gallons of water per acre or 10 or more gallons of sprayable fluid nitrogen fertilizer per treated acre for weed control preplant or preemergence applications. For postemergence applications where labeled for use in that crop or for preplant burndown applications, apply F9312-3 in a minimum of 10 gallons per acre of finished spray solution. If a dense crop and/or weed canopy is present, use up to 40 gallons of spray solution per acre.

## **Aerial Application**

Use nozzle types and arrangements that will provide optimum coverage. Apply at a minimum of 3 gallons of finished spray per acre. Spray volumes greater than 3 GPA may be needed for dense weed populations or with dense crop canopies.

## MANDATORY SPRAY DRIFT DIRECTIONS

### Aerial Applications

- **DO NOT** release spray at a height greater than 10 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety.
- For all applications, applicators are required to use a medium or coarser spray 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 ½ 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.

### Ground Applications

- Apply with the nozzle height recommended by the manufacturer, but no more than 3 feet above the ground or crop canopy.
- For all applications, applicators are required to use a medium or coarser spray 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.

### 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 Advisories

- THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.
- BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.
- F9312-3 contains a contact protoporphyrinogen oxidase (PPO) inhibitor herbicide. Avoid any drift conditions that would allow the product to contact desirable vegetation. The mist from spray drift may cause injury to sensitive plants.

#### • 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 ground or 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 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.

#### Handheld Technology Applications:

- Take precautions to minimize spray drift.

## CLEANING SPRAY EQUIPMENT

Many pesticides are very active at low rates, especially to sensitive crops. Residues left in mixing equipment, spray tanks, hoses, spray booms and nozzles can cause crop effects if they are not properly cleaned. As soon as possible after spraying F9312-3 and before using the sprayer equipment for any other applications, the sprayer equipment must be thoroughly cleaned using the following procedure. In addition, users must take appropriate steps to ensure proper equipment clean-out for any other products mixed with F9312-3 as required on the other product labels. More complete cleaning can be achieved if the spray system is cleaned immediately following the application.

1. Drain sprayer tank, hoses, spray boom and spray nozzles. Use a high-pressure detergent wash to remove physical sediment and residues from the inside of the sprayer tank and thoroughly rinse. Then, thoroughly flush sprayer hoses, spray boom and spray nozzles with a clean water rinse. Remove and clean spray tips and all filters and screens (tank, spray hose and spray tips) separately in the ammonia solution of Step 2.
2. Next, prepare a sprayer cleaning solution by adding three gallons of ammonia (containing at least 3% active) per 100 gallons of clean water or using a commercial tank cleaner. Prepare sufficient cleaning solution to allow the operation of the spray system for a minimum of 15 minutes to thoroughly flush hoses, spray boom and spray nozzles.



3. Convenient and thorough cleaning of the sprayer can be achieved if the ammonia solution or fresh water is left in the spray tank, hoses, spray booms and spray nozzles overnight or during storage.
4. Before using the sprayer, completely drain the sprayer system. Rinse the tank with clean water and flush through the hoses, spray boom, and spray nozzles with clean water.
5. Properly dispose of all cleaning solution and rinsate in accordance with Federal, State, and local regulations and guidelines.

**DO NOT** apply sprayer cleaning solutions or rinsate to sensitive crops.

**DO NOT** store the sprayer for any extended period of time with F9312-3 spray solution remaining in the tank, spray lines, spray boom plumbing, spray nozzles or strainers.

If the sprayer has been stored or idle, purge the spray boom and nozzles with clean water before beginning any application.

If small quantities of F9312-3 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.

When F9312-3 has been tank mixed refer to the label of the product used previously or tank mixed with F9312-3 for cleaning instructions.

## **WEEDS CONTROLLED**

### **F9312-3 Alone**

At the rates and timings listed, F9312-3 applied **early preplant, preplant-incorporated, preemergence and delayed preemergence** controls the weeds listed in **Table 1** when the product is used alone. F9312-3 can also control certain broadleaf weeds after they emerge (**Table 2**). Weeds larger than the size indicated in **Table 2** may only be partially controlled and may require a tankmix partner.

**Table 1. Preplant/ Preemergence Weed Control**  
**Common Name    Scientific Name**

<b>Annual Grasses Controlled</b>	
Barley, little	<i>Hordeum leporium</i>
Barnyardgrass	<i>Echinochloa crus-galli</i>
Bluegrass, annual	<i>Poa annua</i>
Canarygrass	<i>Phalaris canariensis</i>
Crabgrass, large	<i>Digitaria sanguinalis</i>
Crabgrass, smooth	<i>Digitaria ischaemum</i>
Fescue, rattail	<i>Vulpia myuros</i>
Foxtail, giant	<i>Setaria faberi</i>
Foxtail, green	<i>Setaria viridis</i>
Foxtail, yellow	<i>Setaria pumila</i>
Foxtail, bristly	<i>Setaria verticillata</i>
Goosegrass	<i>Eleusine indica</i>
Johnsongrass (seedling)	<i>Sorghum halepense</i>
Panicum, fall	<i>Panicum dichotomiflorum</i>
Rice, red	<i>Oryza sativa</i>
Ryegrass, Italian	<i>Lolium multiflorum</i>
Ryegrass, rigid	<i>Lolium rigidum</i>
Witchgrass	<i>Panicum capillare</i>
<b>Annual Grasses Suppressed</b>	
Brome, downy*	<i>Bromus tectorum</i>
Brome, Japanese*	<i>Bromus japonicas</i>
Cheat*	<i>Bromus secalinus</i>
Cupgrass, Southwestern	<i>Eriochloa acuminata</i>
Cupgrass, woolly	<i>Eriochloa villosa</i>
Millet, wild proso	<i>Panicum miliaceum</i>
Oat, wild*	<i>Avena fatua</i>
Panicum, Texas	<i>Panicum texanum</i>
Sandbur, longspine	<i>Cenchrus longispinus</i>
Shattercane	<i>Sorghum vulgare</i>
Signalgrass, broadleaf	<i>Brachiaria platyphylla</i>

\* These grass species are controlled when F9312-3 is used at 5.0 fl. Oz/A (0.146 lb ai/A of pyroxasulfone/0.010 lb ai/A of Carfentrazone-ethyl) or greater.

<b>Annual Broadleaves Controlled</b>	
Amaranth, Palmer	<i>Amaranthus palmeri</i>
Amaranth, Powell	<i>Amaranthus powellii</i>
Carpetweed	<i>Mollugo verticillata</i>
Pigweed, redroot	<i>Amaranthus retroflexus</i>
Pigweed, smooth	<i>Amaranthus hybridus</i>
Pigweed, tumble	<i>Amaranthus albus</i>
Purslane, common	<i>Portulaca oleracea</i>
Pusley, Florida	<i>Richardia scabra</i>
Sida, prickly (Teaweed)	<i>Sida spinosa</i>
Waterhemp, common	<i>Amaranthus rudis</i>
Waterhemp, tall	<i>Amaranthus tuberculatus</i>
<b>Annual Broadleaves Suppressed</b>	
Buckwheat, wild	<i>Polygonum convolvulus</i>
Chickweed, common	<i>Stellaria media</i>
Fleabane, hairy	<i>Conyza bonariensis</i>
Groundsel, common	<i>Senecio media</i>
Henbit	<i>Lamium amplexicaule</i>
Horseweed (maretail)* <i>*Emerging from seed. Not overwintering plants.</i>	<i>Conyza canadensis</i>
Kochia (including triazine and ALS resistant)	<i>Kochia scoparia</i>
Lambsquarters, common	<i>Chenopodium album</i>
Jimsonweed	<i>Datura stramonium</i>
Mayweed, chamomile	<i>Anthemis cotula</i>
Morningglory, entireleaf	<i>Ipomoea hederacea integruscula</i>
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>
Morningglory, pitted	<i>Ipomoea lacunosa</i>
Nightshade, black	<i>Solanum nigrum</i>
Nightshade, hairy	<i>Solanum physalifolium</i>
Nightshade, Eastern black	<i>Solanum ptycanthum</i>
Ragweed, common	<i>Ambrosia artemisiifolia</i>
Spreading orach	<i>Atriplex subspicata</i>
Velvetleaf	<i>Abutilon theophrasti</i>
<b>Sedges Suppressed</b>	
Nutsedge, yellow	<i>Cyperus esculentus</i>

Partial control (light gray) or suppression only. F9312-3 should be used in tank mixes and/or sequential applications with other herbicides for best results.

## Weeds Controlled – Postemergence / Burndown

F9312-3 can provide control of certain broadleaf weeds that are emerged at the time of application for preplant, preemergence, early postemergence, or post directed applications.

**Table 2.** When use as directed, F9312-3 will provide control of the listed weeds up to four (4) inches in height, or as specified.

Weeds Controlled* Common Names	F9312-3 fl oz./A (lb a.i./A)
Lambsquarters, common (up to 3 inches tall)	<b>2.73- 9.12 (0.080 – 0.266 lb ai/A of pyroxasulfone/0.006 – 0.019 lb ai/A of Carfentrazone-ethyl)</b>
Morningglory, ivyleaf (up to 3 leaves)	
Morningglory, pitted (up to 3 leaves)	
Nightshade, Eastern black	
Pigweed, redroot	
Velvetleaf	
Waterhemp (up to 2 inches tall)	

\* For labeled rates below 2.73 fl oz./A (0.080 lb ai/A of pyroxasulfone/0.006 lb ai/A of Carfentrazone-ethyl), only suppression of these weeds may occur.

- For control of emerged weeds, weeds larger than listed in Table 2 and weeds not listed on the label a tankmix partner is required.

## Application Timings

### Fall Applications for controlling weeds germinating in the fall or winter.

F9312-3 may be applied in the fall to control weeds in conventional, minimum tillage, or no-till production systems planted the following spring. This fall application program will typically need to be followed with a suitable at-plant preemergence or postemergence herbicide treatment. to provide yearlong control of the complete target weed spectrum.

F9312-3 may be applied in the fall for crops that are to be planted the following year (for applications to winter wheat in the fall, see the wheat section of this label for specific instructions). For control of emerged weeds in the fall use combinations with other burndown herbicides like Aim® EC herbicide (EPA Reg. No. 279-3241, Carfentrazone-ethyl), 2,4-D, dicamba, glyphosate, paraquat or glufosinate. Follow all directions, restrictions and precautions on the EPA-approved label for each product in the tank mixture. Use the highest rate within soil type. F9312-3 may be broadcast surface applied in the fall after crop harvest when soil temperatures at the 4-inch depth are sustained at less than 55° F and before the ground freezes to control weeds in minimum or no tillage fields planted the following spring.

### RESTRICTIONS:

- **DO NOT** exceed 2 inch incorporation depth if tilled after application
- **DO NOT** apply to frozen or snow covered soil.

### **Preplant, preemergence and early preplant applications**

F9312-3 may be applied prior to planting up to crop emergence. Cultivation or a labeled postemergence herbicide application may still be required under certain conditions for complete weed control.

If weeds are present at the time of application, use additional weed control methods such as tank mixes with an appropriate postemergence herbicide(s) to control emerged weeds and follow all label directions, rates, restrictions, and precautions on the tankmixture partner labeling.

### **Preplant incorporated (PPI) applications**

For PPI applications of F9312-3 incorporate into the upper (1-2") soil surface up to 14 days before planting. Deeper incorporation may increase the potential for crop injury and also may result in reduced weed control. Use appropriate equipment that provides uniform shallow incorporation, such as a field cultivator, harrow, rolling cultivator or finishing disc.

### **Delayed preemergence surface application in wheat**

Apply as a broadcast spray to the soil surface following wheat planting when 80 percent of germinated wheat seeds have a shoot at least ½ inch long until wheat spiking.

### **Early Postemergence**

F9312-3 can be applied broadcast early postemergence for post weed control and residual activity in some crops. See individual crop sections for further details. Activation by rainfall or irrigation is required prior to weed seedling emergence to provide soil residual weed control.

### **Post-directed applications in cotton**

In cotton, apply F9312-3 from minimum of 6 inches to beginning bloom stage. The amount of F9312-3 to apply and the degree of weed control resulting from a F9312-3 application depends upon a variety of factors such as weeds present, stage of growth of the weeds, environmental conditions, growing conditions and soil type.

### **Split applications in labeled crops**

F9312-3 can be applied in sequential programs, but **DO NOT** exceed the maximum use rate per year. Where weeds are emerged, use appropriate tank mixtures for control of the weed species present. Apply sequential applications a minimum of 14 days apart.

### **F9312-3 in Tank Mixtures in labeled crops**

For enhanced control of emerged weeds use F9312-3 in combination with other labeled burndown herbicide products such as Aim® EC herbicide (EPA Reg. No. 279-3241, Carfentrazone-ethyl) , 2,4-D, dicamba, glyphosate, paraquat and glufosinate may be applied prior to planting. Follow all plant-back and rotational restrictions for F9312 and partner herbicides. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

F9312-3 may be applied preemergence and postemergence with herbicides approved for use on cotton or wheat. Tank mixing F9312-3 with other postemergence herbicides may increase the speed of activity and provide control of the weeds listed in **Table 2**. F9312-3 may be tank-mixed with labeled insecticides for that crop such as Hero® Insecticide (EPA Reg. No. 279-3315, Bifenthrin + Zeta-Cypermethrin), or Mustang® Maxx (EPA Reg. No. 279-3426, Zeta-Cypermethrin) and with labeled fungicides. Follow all directions, restrictions and precautions on the EPA-approved label for each product in the tank mixture and follow the most restrictive requirements of the products being mixed.

## RATE SELECTION / SOIL TEXTURE

Unless a specific soil texture is mentioned, rate tables throughout this label refer to **Table 3** for soil texture groups: coarse, medium and fine. **Table 3** includes a complete listing of soil textures included in each of the soil texture grouping.

**Table 3.**

<b>Coarse</b>	<b>Medium</b>	<b>Fine</b>
Sand Loamy sand Sandy loam	Loam Silt loam Sandy clay loam Silt	Sandy clay Silty clay loam Silty clay Clay loam Clay

## ACTIVE INGREDIENT CONVERSION TABLE (FL OZ F9312-3 TO LB AI EQUIVALENT)

For the designated application rates of F9312-3 found in this label, refer to the table below for active ingredient equivalents.

Table 4.

F9312-3 Rate (oz/A)	ACTIVE INGREDIENT EQUIVALENT	
	Pyroxasulfone (Lb ai/A)	Carfentrazone-ethyl (Lb ai/A)
1.27	0.037	0.003
1.36	0.040	0.003
1.82	0.053	0.004
2.25	0.066	0.005
2.5	0.073	0.005
2.7	0.079	0.006
2.73	0.080	0.006
2.75	0.080	0.006
2.8	0.082	0.006
3	0.087	0.006
3.25	0.095	0.007
3.64	0.106	0.008
3.8	0.111	0.008
4	0.117	0.008
4.5	0.131	0.009
4.55	0.133	0.009
5	0.146	0.010
5.25	0.153	0.011
5.46	0.159	0.011
5.5	0.160	0.011
6	0.175	0.013
6.4	0.187	0.013
6.5	0.190	0.014
7.28	0.212	0.015
7.3	0.213	0.015
7.6	0.222	0.016
9.12	0.266	0.019



## CORN

### Fall and Early Preplant

**Table 5. F9312-3 application rates for fall or early preplant applications greater than 14 days ahead of planting in field corn (grown for grain, seed and silage).**

	F9312-3 fl oz./A		
Early preplant	Coarse	Medium	Fine
15-45 days prior to planting	3.5 – 4.5	4.5 – 5.5	5.0 – 7.28

### PREPLANT / PREEMEREGNCE APPLICATION RATES

**Table 6. F9312-3 application rates for field corn (grown for grain, seed and silage) sweet corn and popcorn including sweet corn and popcorn grown for seed. Apply from 14 days preplant up to prior to spike stage corn.**

	F9312-3 fl oz./A		
Organic Matter	Coarse (Excluding sweet corn)	Medium (Excluding sweet corn at 2.0% O.M or less)	Fine
Less than 1.0%	2.75 – 3.5	3.0 – 4.5	3.5 – 4.5
1% to 3%	3.0 – 4.0	3.5 – 5.5	4.5 – 6.0
Greater than 3%	4 – 5.0	4.5 – 6.0	5.5 – 7.28

- Use rates listed above are for control or suppression of weeds listed in Table 1.
- Before applying F9312-3 to sweet corn, popcorn, or seed corn, check with your local seed supplier to verify the selectivity on any inbred lines or hybrids to avoid any possible injury.
- For early preplant applications and/or in reduce tillage (i.e. no-till/ high residue) systems or heavy weed pressure use the higher labeled rate by the soil type.
- For preplant burndown of emerged weeds, tank-mix another herbicide such as 2,4-D, dicamba, glyphosate, atrazine or similar for increased levels of weed control.
- Corn seed must be planted a minimum of 1.5 inches deep. Shallow planting can lead to increased crop response risk.
- Early preplant surface applications are not advised for coarse textured soils, in areas where annual rainfall (or rainfall plus irrigation) typically exceeds 40 inches, or for popcorn or sweet corn.

For control/suppression of additional weed species or for increased control of troublesome weeds, F9312-3 herbicide may be used in combination with other labeled corn herbicides including:

Product	Weed species
Balance® Flexx (EPA Reg. No. 264-1067, Isoxaflutole)  Callisto (EPA Reg. No.100-1131, Mesotrione)	Velvetleaf, Kochia, Lambsquarters, Common and Giant Ragweed, Pigweeds, Waterhemp, Pennsylvania smartweed, Nightshade.
Atrazine	Cocklebur, Giant and Common ragweeds, Nightshade, Kochia (non-triazine resistant) Morningglory, Pigweeds, Russian thistle, Lambsquarters,

Hornet (EPA Reg. No. 62719-315, Clopyralid + Flumetsulam)	Cocklebur, Sunflower, Velvetleaf, Common and Giant Ragweed, Pennsylvania smartweed, Morningglory, Pigweeds, Lambsquarters
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- Under heavy weed pressure, a sequential program of F9312-3 followed by an effective post emergence herbicide treatment or cultivation may be required for satisfactory weed control.

## POSTEMERGENCE APPLICATION RATES

**Table 7. F9312-3 application rates for field corn (grown for grain, seed and silage), sweet corn and popcorn including sweet corn and popcorn grown for seed.**

F9312-3 fl oz./A		
Coarse (Excludes sweet corn)	Medium Excludes sweet corn at 2.0% O.M. or less	Fine
2.25 – 4.5	3.5 – 5.25	4.0 – 6.5

- Use rates listed above are for residual control on the weed control list (Table 1).
- Apply from emergence through V4 stage corn.
- For heavy weed densities and longer residual use the higher labeled rate by the soil type.
- For improved performance, F9312-3 may be tank-mixed with other herbicides such as atrazine, dicamba or other appropriate postemergence herbicides. Applications to weeds larger than specified in table 2 can result in unsatisfactory control.

## Crop-Specific Restrictions

- **On coarse textured soils -**
  - **DO NOT** apply more than a total of 5.0 fluid ounces of F9312-3 (containing 0.147 lb ai of pyroxasulfone and 0.011 lb ai of carfentrazone-ethyl) in a single application or as total per acre per year.
- **On medium soils -**
  - **DO NOT** apply more than 5.5 fluid ounces of F9312-3 (containing 0.160 lb ai of pyroxasulfone and 0.011 lb ai of carfentrazone-ethyl) in a single application.
  - **DO NOT** apply more than 9.12 fluid ounces of F9312-3 (containing 0.266 lb ai of pyroxasulfone and 0.019 lb ai of carfentrazone-ethyl) per acre per year.
- **On fine soils -**
  - **DO NOT** apply more than 7.28 fluid ounces of F9312-3 (containing 0.212 lb ai of pyroxasulfone and 0.015 lb ai of carfentrazone) in a single application.
  - **DO NOT** apply more than 9.12 fluid ounces of F9312-3 (containing 0.266 lb ai of pyroxasulfone and 0.019 lb ai of carfentrazone-ethyl) per acre per year.
- **DO NOT** apply F9312-3 for sweet corn on coarse textured soils or on any medium soils with less than 2.0% organic matter.
- **DO NOT** apply more than 0.266 lb ai/A of pyroxasulfone or 0.031 lb ai/A of carfentrazone-ethyl per acre in a year including preplant burndown. F9312-3 may be used prior to or after applications of other pyroxasulfone or carfentrazone-ethyl containing herbicides. When using F9312-3 in sequential programs,
- **DO NOT** exceed the maximum amount of either active ingredient per year for the soil textures as specified above.
- **DO NOT** apply F9312-3 more than two times in corn per year when using labeled rates less than the maximum total per year.

- **DO NOT** apply F9312-3 within 14 days of a previous application of F9312-3.
- **DO NOT** apply within 3 days of harvest.

## COTTON

### Application Rates

Application rates for **F9312-3** when applied alone, in tank mix, or sequentially in cotton are provided in **Table 8**.

**Table 8. Residual Rates of F9312-3 in Cotton**

Application Timing	Use Rate (oz./A) by Soil Texture <sup>1</sup> F9312-3 fl oz./A		
	Coarse <sup>2</sup>	Medium	Fine
Preplant Surface	1.365 – 1.82	1.82 – 2.73	2.73 – 3.80
Preplant Incorporated	1.365 – 1.82	1.82 – 2.73	2.73 – 3.80
Preemergence	1.365 – 1.82	1.82 – 2.73	2.73 – 3.80
Postemergence-Directed - Early and Lay-by	1.365 – 2.73	1.365 – 2.73	2.73 – 3.80

<sup>1</sup> Refer to **Table 3** for definitions of soil texture groups.

<sup>2</sup> **DO NOT** apply as a pre-plant or preemergent application on **Coarse** soils categorized as Sand or Loamy Sand.

### Crop-Specific Restrictions

- **On coarse and medium soils -**
  - **DO NOT** apply more than 2.73 fluid ounces of F9312-3 (containing 0.079 lb ai of pyroxasulfone and 0.006 lb ai of carfentrazone) in a single application.
  - **DO NOT** exceed 5.46 fluid ounces of F9312-3 (containing 0.158 lb ai of pyroxasulfone and 0.012 lb ai of carfentrazone) from all application timings in a year.
- **On fine soils –**
  - **DO NOT** apply more than 3.8 fluid ounces of F9312-3 (0.111 lb ai of pyroxasulfone and 0.008 lb ai of carfentrazone-ethyl) in a single application
  - **DO NOT** apply more than 7.6 fluid ounces of F9312-3 (containing 0.0223 lb ai of pyroxasulfone and 0.159 lb ai of carfentrazone-ethyl) per year cumulative from all applications.
  - **DO NOT** apply more than 0.025 lb active ingredient of carfentrazone-ethyl per application or 0.124 lb active ingredient per year.
- **DO NOT** apply more than 2 applications per year to cotton when using labeled rates less than the total maximum.
- **Seedling Depth:** Crop seeds must be planted a minimum of 1 in. deep.
- **Pre-harvest Interval: DO NOT** harvest for a minimum of 7 days after the last application.
- The minimum re-treatment interval is 14 days.

## Crop-Specific Instructions and Precautions

- Rainfall and/or irrigation totaling at least 0.5 inch prior to weed emergence may be necessary for herbicide activation and optimum weed control. If no rain occurs within 7 days after application, apply overhead irrigation if available, at 0.5 to 0.75 inches of precipitation. Use a maximum of 0.5 inch on coarse textured soils and a maximum of 1.0 inch on medium and fine textured soils.
- Excessive rainfall, irrigation, or prolonged cool and/or wet soil conditions after application of F9312-3 from seed germination through seedling emergence may increase the risk of cotton seedling injury and needs to be avoided if possible.
- Before applying to cotton, verification of F9312-3 selectivity on your variety must be confirmed to avoid injury to sensitive cotton varieties. Check with the local Cooperative Extension agent for information on potential F9312-3 varietal sensitivity. If variety sensitivity is unknown, such as with new varieties, apply F9312-3 on a small area to confirm variety safety before use on large acreage.

### Application Timings

**F9312-3** may be applied in a single application or in sequential applications.

### Preplant Surface or Preplant Incorporated Applications

(up to 45 days prior to planting)

Apply **F9312-3** at the use rates specified in **Table 8** as a broadcast or banded spray to the soil surface or incorporated up to 45 days before planting on all soil types.

### Preemergence Surface Application

Apply **F9312-3** at use rates specified in **Table 8** as a broadcast or banded spray to the soil surface after planting and before crop emergence.

**DO NOT** apply **F9312-3** directly to cotton as a broadcast postemergence spray after emergence (at-cracking) or injury may occur.

### Postemergence-Directed – Early and Lay-by Application

**F9312-3** is a contact plus residual herbicide for postemergence directed sprayer or hooded/shielded sprayer applications for the control of broadleaf weeds in cotton. Apply **F9312-3** alone or as a tank mixture with other herbicides to emerged and actively growing weeds. For specific mixing instructions, refer to the Mixing and Loading Instructions under the PRODUCT INFORMATION section. Applications of **F9312-3** must be made with directed sprayers or hooded sprayers to prevent contact of spray solution with foliage, green stem tissue, or blooms. **DO NOT** allow spray solution to contact cotton foliage, green stem tissue, or blooms. Directed spray equipment must position nozzles a minimum 3 to 4 inches above the soil, with nozzles directed beneath the crop canopy. **F9312-3** tank mix applications shall be made to cotton that is a minimum of 6 inches in height. Applications to cotton at 5 to 6 nodes or less must be made with hooded or shielded sprayer equipment to completely avoid contact with cotton plants. Apply lay-by applications of **F9312-3** or any tank mixtures at later growth stages of cotton when cotton plants have achieved a height of 12 inches or more with sufficient bark development and height differential between crop bottom leaves and the soil. Spray solution shall be directed at the base of cotton plants to avoid contact with green stem tissue or foliage while maintaining maximum contact with broadleaf weeds that are at appropriate treatment size. **DO NOT** apply when conditions favoring drift exist or wind is above 10 mph. For control of emerged weeds, weeds larger than listed in table 2, or for weeds not covered on this label, a tankmix partner is required. Coverage is essential for good control. The use of an adjuvant is advised for consistent control.

### Crop-Specific Post-Directed Precautions

Under high moisture conditions the crop may experience some temporary crop response. The crop will rapidly outgrow these effects and develop normally with no reduction in yield.

### FALLOW

F9312-3 may be used as a residual treatment to control weeds listed at any time of the year during the fallow period following crop harvest and before the following crop is planted.

Follow all rotational crop planting intervals listed on Table 18.

Apply F9312-3 as a broadcast spray at 2.5 - 7.28 fluid ounces per acre (0.073 – 0.212 lb ai/A of pyroxasulfone/0.005 – 0.015 lb ai/A of Carfentrazone-ethyl) .

The minimum re-treatment interval is 30 days, but **DO NOT** exceed the maximum annual cumulative amount of 9.12 fl. oz./A (0.285 lb active ingredient) of F9312-3 per year.

### Tank Mixes

For control of emerged weeds, weeds larger than listed on Table 2, and weeds not listed on the label, a tankmix partner is required. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

### FLAX

#### SPRING PREPLANT AND PREEMERGENCE APPLICATION RATES

Table 9. F9312-3 application rates for Flax

Organic Matter	F9312-3 fl oz./A		
	Coarse	Medium	Fine
Less than 3%	1.82 – 9.12	2.75 – 9.12	2.75 – 9.12
Greater than 3%	1.82 – 9.12	2.75 – 9.12	4.0 – 9.12

- Use rates listed above are for control or suppression of weeds listed in table 1.
- Applications may be made up to 30 days prior to planting on all soil types.
- For early preplant applications and reduced tillage (i.e. no-till/ high residue) systems use the higher labeled rate by the soil type.
- Ensure good seed furrow closure and soil coverage to avoid contact with F9312-3. Shallow planting and open seed furrow can lead to increased crop injury risk.
- Early preplant surface applications are not advised for coarse textured soils, in areas where annual rainfall (or rainfall plus irrigation) typically exceeds 40 inches.

For additional control of kochia, Russian thistle, common lambsquarter, nightshades, annual morningglories, Palmer amaranth and others, use preplant/preemergence tank mixes or sequential applications of Spartan® 4F herbicide (EPA Reg. No. 279-3220, Sulfentrazone), or Spartan® Charge herbicide (EPA Reg. No. 279-3337, Carfentrazone-ethyl + Sulfentrazone) at their labeled use rate. A sequential application of a postemergence herbicide labeled for control of these broadleaf weeds may also be used to for additional control during the growing season.

## Crop-Specific Restrictions

- **DO NOT** apply more than 9.12 fl oz. per acre (0.266 lb ai/A of pyroxasulfone/0.019 lb ai/A of Carfentrazone-ethyl) of F9312-3 in a single application.
- **DO NOT** apply more than 3 applications per year of F9312-3.
- The minimum re-treatment interval is 14 days.
- **DO NOT** apply more than a cumulative total of 0.266 lb ai/A of pyroxasulfone or 0.096 lb a.i./A of carfentrazone-ethyl to flax in a year including preplant burndown.
- F9312-3 may be used prior to or after applications of other pyroxasulfone or carfentrazone containing herbicides. When using F9312-3 in sequential programs, **DO NOT** exceed the maximum amount of either active ingredient per year for the soil textures as specified above.

## Crop-Specific Precautions

- The use of F9312-3 may result in temporary suppression of growth in flax if extreme conditions such as high rainfall and extended periods of water-saturated soil occur during sunflower germination or early seedling development.
- Prolonged periods of dry weather following applications of F9312-3 may reduce herbicide efficacy. If adequate rainfall is not received, weed emergence and escapes can occur. A post herbicide may be needed to control these weed escapes.
- The activity of F9312-3 may be reduced if heavy trash is present on the soil surface covering more than 25-50% of the soil. To improve performance, manage trash levels with uniform spreading with combine or light tillage. Application rates at the higher side of the rate ranges may also improve performance in heavy trash situations.

## PEANUT

### SPRING PREPLANT, PREPLANT INCORPORATED, PREEMERGENCE AND POSTEMERGENCE APPLICATION RATES

Table 10. F9312-3 application rates for Peanuts

Organic Matter	F9312-3 fl oz./A		
	Coarse	Medium	Fine
Less than 3%	2.7 – 4.0	2.7 – 4.0	2.7 – 4.0
Greater than 3%	2.7 – 4.0	2.7 – 4.0	2.7 – 4.0

- Use rates listed above are for control or suppression of weeds listed in Table 1.
- Applications may be made up to 14 days prior to planting on all soil types.
- Preemergence applications must be made prior to peanut cracking or emergence to avoid potential crop response.
- Peanut seed must be planted a minimum of 1.0 inches deep. Shallow planting can lead to increased crop injury risk.
- Check with your local seed company before applying F9312-3 to peanuts, regarding the sensitivity of that variety to F9312-3 to avoid potential injury.

### POSTEMERGENCE APPLICATIONS:

- F9312-3 may be applied postemergence to peanuts from “at cracking to first leaf stage through beginning pod development.
- Apply broadcast over top of the crop or directed to soil surface. The use of an adjuvant is advised for consistent postemergence control.
- Postemergence applications of F9312-3 are for residual control of weeds emerging later. F9312-3 can provide some postemergence activity on small, newly emerging seedling

broadleaf weeds listed in table 2, but weeds larger than listed in table 2 or other emerged weeds will require a tank-mix partner for adequate control.

- F9312-3 may be applied with other peanut postemergence herbicides for improved weed control. When tank-mixing F9312-3 with other products, follow the most restrictive precautions and instructions for all products used.

### Crop-Specific Restrictions

- **DO NOT** apply more than 4.0 fl oz. per acre (0.117 lb ai/A of pyroxasulfone/0.008 lb ai/A of carfentrazone-ethyl) of F9312-3 in a single application.
- **DO NOT** apply F9312-3 more than 3 times per year.
- **DO NOT** apply F9312-3 more than a total of 9.12 fluid ounces per acre per year (0.266 lb ai/A of pyroxasulfone/0.019 lb ai/A of carfentrazone-ethyl).
- The minimum re-treatment interval is 14 days.
- **DO NOT** apply more than 0.266 lb ai/A of pyroxasulfone or 0.096 lb a.i./A of carfentrazone-ethyl to peanuts in a year including preplant burndown. F9312-3 may be used prior to or after applications of other pyroxasulfone or carfentrazone-ethyl containing herbicides.
- When using F9312-3 in sequential programs, **DO NOT** exceed the maximum amount of either active ingredient per year for the soil textures as specified above.

### Crop-Specific Precautions

- The use of F9312-3 may result in temporary suppression of growth in peanut if extreme conditions such as high rainfall and extended periods of water-saturated soil occur during peanut germination or early seedling development.
- Before applying to peanut, verify with your local seed company (supplier) the selectivity of F9312-3 on your variety to avoid potential crop injury.
- Prolonged periods of dry weather following applications of F9312-3 may reduce herbicide efficacy. If adequate rainfall is not received, weed emergence and escapes can occur. A postemergence herbicide may be needed to control these weed escapes. Under high moisture conditions and/or extremely cool environmental conditions, the crop may experience some temporary crop response. The crop will rapidly outgrow these effects and develop normally with no reduction in yield.

## PEA AND BEAN, DRIED SHELLLED, (EXCEPT SOYBEAN), SUBGROUP 6C

### FALL/SPRING PREPLANT AND PREEMERGENCE APPLICATION RATES

Table 11. F9312-3 Application Rates:

Organic Matter	F9312-3 fl oz./A		
	Coarse	Medium	Fine
Less than 3%	-	2.75 – 3.25	3.5 – 4.5
Greater than 3%	-	3.0 – 4.5	4.0 – 5.0

- Use rates listed above are for control or suppression of weeds listed in table 1.
- For early preplant applications and reduced tillage (i.e. no-till/ high residue) systems use the higher labeled rate by the soil type.
- For additional burndown of emerged weeds, F9312-3 can be tank-mixed with other herbicides such as glyphosate, glufosinate and others.
- Spring preplant applications may be made up to 30 days prior to planting.
- Preemergence applications must be made prior to cracking or emergence to avoid potential crop response.



- Dry Peas/Bean seed must be planted a minimum of 1.0 inches deep and ensure furrow is closed and there is good soil coverage. Shallow planting can lead to increased crop injury risk.

For additional control of kochia, Russian thistle, common lambsquarter, nightshades, annual morningglories, Palmer amaranth and others, use preplant/preemergence tank mixes at their labeled use rate. A sequential application of a postemergence herbicide labeled for control of broadleaf weeds may also be used to for additional control during the growing season.

### Crop-Specific Restrictions

- **DO NOT** apply more than 5.0 fl oz. per acre (0.146 lb ai/A of pyroxasulfone/0.010 lb ai/A of Carfentrazone-ethyl) of F9312-3 in a single application.
- **DO NOT** apply F9312-3 more than 3 times per year.
- The minimum re-treatment interval is 14 days.
- **DO NOT** apply more than 0.266 lb ai/A of pyroxasulfone or 0.096 lb a.i./A of carfentrazone-ethyl to dry peas and beans in year including preplant burndown. F9312-3 may be used prior to or after applications of other pyroxasulfone or carfentrazone containing herbicides.
- When using F9312-3 in sequential programs, **DO NOT** exceed the maximum amount of either active ingredient per year for the soil textures as specified above.
- Vegetable, foliage of legume, except soybean, subgroup 7A may be fed or grazed by livestock.

### Crop-Specific Precautions

- The use of F9312-3 may result in temporary suppression of growth in of dry peas and dry beans if extreme conditions such as high rainfall and extended periods of water-saturated soil occur during dry pea and bean germination or early seedling development.
- Prolonged periods of dry weather following applications of F9312-3 may reduce herbicide efficacy. If adequate rainfall is not received, weed emergence and escapes can occur. A post herbicide may be needed to control these weed escapes.
- The activity of F9312-3 may be reduced if heavy trash is present on the soil surface covering more than 25-50% of the soil. To improve performance, manage trash levels with uniform spreading with combine or light tillage. Application rates at the higher side of the rate ranges may also improve performance in heavy trash situations.
- **DO NOT** apply Sharpen® powered by Kixor® herbicide (EPA Reg No 7969-278, Saflufenacil) or any other saflufenacil containing product with, before, or after any F9312-3 herbicide application to lentils.

## SOYBEAN

Fall and spring early preplant applications greater than 14 days ahead of planting in soybeans.

Table 12. F9312-3 Application rates

Early preplant	F9312-3 fl oz./A		
	Coarse	Medium	Fine
15-45 days prior to planting	2.75 - 3.8	4.0 – 5.0	5.0 – 6.4

## PREPLANT, PREPLANT INCORPORATED AND PREEMERGENCE APPLICATION RATES

**Table 13. F9312-3 Application Rates**

	F9312-3 fl oz./A		
Organic Matter	Coarse	Medium	Fine
Less than 1%	2.25 – 2.75	2.75 – 4.0	4.0 – 5.50
1 to 3%	2.25 – 3.8	2.75 – 5.5	4.5 – 6.4
Greater than 3%	3.8	4.0 – 5.5	4.5 – 6.4

- Use rates listed above are for control or suppression of weeds listed in table 1.
- For early preplant applications and reduced tillage (i.e. no-till/ high residue) systems use the higher side of labeled rate by the soil type.
- Preemergence applications must be made prior to soybean cracking and emergence to avoid potential crop injury response.
- Soybean seed must be planted a minimum of 1.0 inches deep and furrow is closed with good soil coverage. Shallow planting can lead to increased crop injury risk.
- Early preplant surface applications are not advised for coarse textured soils, in areas where annual rainfall (or rainfall plus irrigation) typically exceeds 40 inches.

For additional control of morningglory, common ragweed, Palmer amaranth and giant ragweed, velvetleaf, sunflower and others, use preplant/preemergence tank mixes or sequential applications of Authority® herbicides (Authority® Assist Herbicide EPA Reg No 279-3330, Sulfentrazone + Imazethapyr, Authority® Elite Herbicide EPA Reg No 279-3442, S-Metolachlor + Sulfentrazone, Authority® First DF Herbicide EPA Reg No 279-3246, Sulfentrazone + Cloransulam-Methyl, Authority® Maxx Herbicide EPA Reg No 279-9560, Sulfentrazone + Chlorimuron Ethyl, Authority® MTZ DF Herbicide EPA Reg No 279-3340, Metribuzin + Sulfentrazone, Authority® Supreme Herbicide EPA Reg No 279-3601, Pyroxasulfone + Sulfentrazone, Authority® XL Herbicide EPA Reg No 279-3413, Sulfentrazone + Chlorimuron Ethyl), Spartan® 4F herbicide (EPA Reg. No. 279-3220, Sulfentrazone), or Spartan® Charge herbicide (EPA Reg. No. 279-3337, Carfentrazone-ethyl + Sulfentrazone) or other suitable herbicides at their labeled use rate. A sequential application of a postemergence herbicide labeled for control of these broadleaf weeds may also be used to for additional control during the growing season.

## POSTEMERGENCE APPLICATION RATES

**Table 14. F9312-3 application rates.**

F9312-3 fl oz./A		
Coarse	Medium	Fine
2.25 – 3.8	2.75 – 5	3.75 – 6.4

- Rates listed above are for residual control on the weed control list (Table 1).
- For heavy weed densities, longer residual or resistant weed populations, use the higher labeled rate by the soil type.
- Apply from emergence to the third trifoliate (V3) leaf stage.
- Applications to weeds larger than specified in Table 2 can result in unsatisfactory control

For improved performance, broader spectrum, or control of weeds not on the label, F9312-3 herbicide may be tank mixed with other postemergence herbicides for soybeans. Postemergence tankmixes can increase the level of crop response observed, but soybeans should recover and not result in any yield reduction.

## Crop-Specific Restrictions

- **On coarse soils -**
  - **DO NOT** apply more than 3.8 fl. oz/A (containing 0.111 lb ai of pyroxasulfone and 0.008 lb ai of carfentrazone-ethyl) in a single application.
  - **DO NOT** exceed a maximum cumulative of 3.8 ozs/A of F9312-3 (containing 0.111 lb ai of pyroxasulfone and 0.008 lb ai of carfentrazone-ethyl) per year.
- **On medium soils -**
  - **DO NOT** apply more than 5.45 fl. oz/A (containing 0.159 lb ai of pyroxasulfone and 0.011) lb ai of carfentrazone-ethyl) in a single application.
  - **DO NOT** exceed a maximum cumulative total of 6.4 ozs/A of F9312-3 (containing 0.186 lb ai of pyroxasulfone and 0.0134 lb ai of carfentrazone-ethyl) per year.
- **On fine soils -**
  - **DO NOT** apply more than 6.4 fl oz/A (containing 0.187 lb ai of pyroxasulfone and 0.013 lb ai of carfentrazone-ethyl) in a single application.
  - **DO NOT** exceed a maximum cumulative total of 6.4 fl.oz/A of F9312-3 (containing 0.187 lb ai of pyroxasulfone and 0.013 lb ai of carfentrazone-ethyl) per year.
- **DO NOT** apply F9312-3 more than twice per year using labeled rates less than the maximum single application.
- The minimum re-treatment interval is 14 days.
- **DO NOT** apply more than 0.023 lb ai/A of carfentrazone-ethyl or 0.186 lb ai/A of pyroxasulfone per acre on soybeans in a year including preplant burndown. F9312-3 may be used prior to or after applications of other pyroxasulfone or carfentrazone-ethyl containing herbicides.
- When using F9312-3 in sequential programs, **DO NOT** exceed the maximum amount of either active ingredient per year for the soil textures as specified above.

## SUNFLOWERS (subgroup 20b)

### FALL, SPRING PREPLANT, PREPLANT INCORPORATED AND PREEMERGENCE APPLICATION RATES

Table 15. F9312-3 application rates for Sunflower (subgroup 20b)

Organic Matter	F9312-3 fl oz./A		
	Coarse	Medium	Fine
Less than 3%	2 – 2.8	2.8 – 4.5	4.5 – 7.3
Greater than 3%	2.0 – 3.0	3.0 – 5.5	5.0 – 7.3

- Use rates listed above are for control or suppression of weeds listed in Table 1.
- For early preplant applications (15-45 days before planting) and reduced tillage (i.e. no-till/ high residue) systems use the higher labeled rate by the soil type.
- Preemergence applications must be made prior to sunflower cracking or emergence to avoid potential crop injury response.
- Sunflower seed must be planted a minimum of 1.0 inches deep and the seed furrow closed with good soil coverage of the seed. Shallow planting can lead to increased crop injury risk.
- Early preplant surface applications are not advised for coarse textured soils, in areas where annual rainfall (or rainfall plus irrigation) typically exceeds 40 inches.

For additional control of kochia, Russian thistle, common lambsquarter, nightshades, annual morningglories, Palmer amaranth and others, use preplant/preemergence tank mixes or sequential applications of Spartan® 4F herbicide (EPA Reg. No. 279-3220, Sulfentrazone), or Spartan® Charge herbicide (EPA Reg. No. 279-3337, Carfentrazone-ethyl + Sulfentrazone) at their labeled use rate. A sequential application of a postemergence herbicide labeled for control of these broadleaf weeds may also be used to for additional control during the growing season.

### Crop-Specific Restrictions

- **DO NOT** apply more than 7.3 fl oz. per acre (0.213 lb ai/A of pyroxasulfone/0.015 lb ai/A of carfentrazone-ethyl) of F9312-3 to sunflower (subgroup 20b) in a single application.
- **DO NOT** apply more than a cumulative of 9.12 fl oz/A (0.266 lb ai/A of pyroxasulfone/0.019 lb ai/A of carfentrazone-ethyl) of F9312-3 per year from all sequential applications.
- **DO NOT** apply F9312-3 more than 3 times per year.
- The minimum re-treatment interval is 14 days.
- **DO NOT** apply more than 0.266 lb ai/A of pyroxasulfone or 0.096 lb a.i./A of carfentrazone-ethyl to sunflowers in a year including preplant burndown. F9312-3 may be used prior to or after applications of other pyroxasulfone or carfentrazone containing herbicides. When using F9312-3 in sequential programs, **DO NOT** exceed the maximum amount of either active ingredient per year for the soil textures as specified above.

### Crop-Specific Precautions

- The use of F9312-3 may result in temporary suppression of growth in sunflower if extreme conditions such as high rainfall and extended periods of water-saturated soil occur during sunflower germination or early seedling development.
- Prolonged periods of dry weather following applications of F9312-3 may reduce herbicide efficacy. If adequate rainfall is not received, weed emergence and escapes can occur. A post herbicide may be needed to control these weed escapes.
- The activity of F9312-3 may be reduced if heavy trash is present on the soil surface covering more than 25-50% of the soil. To improve performance, manage trash levels with uniform spreading with combine or light tillage. Application rates at the higher side of the rate ranges may also improve performance in heavy trash situations.

### WHEAT (Spring and Winter) \*

\*(Spring and Winter Wheat except in WA, OR, ID and MT) See section below for use in WA, OR, ID, and MT.

#### Application Rates

Application rates for F9312-3 when applied alone, in tank mix, or sequentially are provided in **Table 16**.

**Table 16. Residual Rates of F9312-3 in Spring and Winter Wheat**

Application Timing	Use Rate (oz./A) by Soil Texture <sup>1</sup> F9312-3 fl oz./A		
	Coarse	Medium	Fine
Preplant Surface	1.27 – 2.73	1.82 – 3.64	2.73 – 4.55
Preemergence	1.27 – 2.73	1.82 – 3.64	2.73 – 4.55
Delayed	2.0 – 2.73	2.75 – 3.64	3.5 – 4.55

Preemergence			
Early Postemergence	2.0 – 2.73	2.75 – 3.64	2.73 – 4.55

<sup>1</sup> Refer to **Table 3** for definitions of soil texture groups.

### Crop-Specific Restrictions

- **On coarse soils –**
  - **DO NOT** apply more than 2.73 fl. oz/A (0.080 lb ai/A of pyroxasulfone and 0.006 lb ai/A of carfentrazone-ethyl) in a single application.
- **On medium soils –**
  - **DO NOT** apply more than 3.64 fl. oz/A (0.106 lb ai/A of pyroxasulfone and 0.008 lb ai/A of carfentrazone-ethyl) in a single application.
- **On fine soils –**
  - **DO NOT** apply more than 4.55 fl. oz/A (0.133 lb ai/A of pyroxasulfone and 0.009 lb ai/A of carfentrazone-ethyl) in a single application.
- **DO NOT** exceed a maximum cumulative amount of 4.55 fl. oz/A (0.133 lb ai of pyroxasulfone and 0.0095 lb ai of carfentrazone-ethyl) of F9312-3 per year from all sequential applications.
- **DO NOT** apply more than 0.133 lb ai/A total of pyroxasulfone to wheat per year.
- **DO NOT** apply more than a total of 0.031 lb ai/A of carfentrazone-ethyl to wheat per year.
- **DO NOT** apply more than twice in wheat per year when using labeled rates less than the single maximum application rate.
- The minimum re-treatment interval is 14 days.
- **DO NOT** apply to durum wheat
- **DO NOT** apply preplant incorporated in wheat
- **DO NOT** apply preplant, preemergence, or delayed preemergence to broadcast seeded wheat
- **DO NOT** apply preemergence if ¼ inch. or more of rain is expected within 48 hours of application.
- **DO NOT** seed wheat deeper than 1.5 inch. after a preplant application or before a preemergence or delayed preemergence application
- **DO NOT** irrigate fields after a preemergence or delayed preemergence application until wheat spikes.
- **DO NOT** harvest, feed, or graze within 7 days after application.

### Specific Spring and Winter Wheat Use Instructions and Precautions

- Rainfall and/or irrigation totaling at least 0.5 inch prior to weed emergence may be necessary for herbicide activation and optimum weed control. If no rain occurs within 7 days after application, apply overhead irrigation if available. -Use a maximum of 0.5 inch on coarse textured soils and a maximum of 1.0 inch on medium and fine textured soils.
- Excessive rainfall, irrigation, or prolonged wet soil conditions after application of F9312-3 from seed germination through seedling emergence may increase the risk of wheat seedling injury and needs to be avoided if possible.
- Before applying to wheat, verification of F9312-3 selectivity on your variety must be confirmed to avoid injury to sensitive wheat varieties. Check with the local Cooperative Extension agent for information on potential F9312-3 varietal sensitivity. If variety sensitivity is unknown, such as with new varieties, apply F9312-3 on a small area to confirm variety safety before use on large acreage.

### Application Timings

F9312-3 may be applied in a single application or in sequential applications.

### **Preplant Surface and Applications**

Apply F9312-3 at the use rates specified in **Table 16** as a broadcast spray to the soil surface no more than 14 days prior to planting on all soil types. If rainfall or irrigation is not received within 7 days, weed control may be erratic.

Apply preplant only to soils with a CEC greater than 15, pH less than 7.5 with an OM greater than 2% to reduce the risk of crop response.

### **Preemergence Surface Application**

Apply F9312-3 at use rates specified in **Table 16** after planting and before wheat spiking as a broadcast spray to the soil surface with uniform seedbed which is firm and free of clods. Rainfall or irrigation of at least 0.5 inch prior to weed emergence is required for optimum herbicide activation and weed control. If rainfall or irrigation is not received within 7 days, weed control may be erratic. Complete seed furrow closure and adequate soil coverage must occur to prevent seed contact with F9312-3.

Apply preemergent only to soils with a CEC greater than 15, pH less than 7.5 and with an OM greater than 2% to reduce the risk of crop response.

### **Delayed Preemergence Application**

Apply F9312-3 at use rates specified in **Table 16** as a broadcast spray to the soil surface following wheat planting when 80 percent of germinated wheat seeds have a shoot at least ½ inch long until wheat spiking to the soil surface with uniform seedbed which is firm and free of clods. Rainfall or irrigation of at least 0.5 inch prior to weed emergence is required for optimum herbicide activation and weed control. If rainfall or irrigation is not received within 7 days, weed control may be erratic.

### **Early Postemergence Application**

Apply F9312-3 at use rates specified in **Table 16** as a broadcast spray to wheat at spiking up to the 4<sup>th</sup> tiller growth stage. F9312-3 will provide residual preemergence control of susceptible weeds after F9312-3 is activated by rainfall or irrigation. F9312-3 may be tank-mixed or applied as a sequential application with a labeled postemergence herbicide(s) for control of emerged weeds. Read and follow the most restrictive tank-mix partner label prior to application. For optimum postemergence performance of small emerged susceptible broadleaf weeds, apply F9312-3 to actively growing weeds up to 2 inches tall and rosettes less than 2 inches across. Thorough coverage is essential for control. The use of an adjuvant is advised for consistent postemergence control.

Under high moisture conditions the crop may experience some temporary crop response. The crop will rapidly outgrow these effects and develop normally with no reduction in yield.

### **Tank Mixes**

For control of emerged weeds, weeds larger than listed in Table 2, and weeds not listed on the label a tankmix partner is required. It is the pesticide user's responsibility to ensure all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixes. Users must follow the most restrictive directions for use and precautionary statements for each product in the tank mixture.

## WHEAT (Spring and Winter) WA, OR, ID, & MT ONLY

### Application Rates

Application rates for F9312-3 when applied alone, in tank mix, or sequentially are provided in **Table 17**.

**Table 17. Residual Rates of F9312-3 in Spring and Winter Wheat (WA, OR, ID and MT)**

Application Timing	Use Rate (oz./A) by Soil Texture <sup>1</sup> F9312-3 fl oz./A		
	Coarse	Medium	Fine
Preplant Surface	2.5 – 2.73	2.75 – 3.64	3.5 – 4.55
Preemergence	2.0 – 2.73	2.75 – 3.64	3.5 – 4.55
Delayed Preemergence	1.27 – 2.73	1.82 – 3.64	2.73 – 4.55
Early Postemergence	2.0 – 2.73	2.75 – 3.64	2.73 – 4.55

<sup>1</sup> Refer to **Table 3** for definitions of soil texture groups.

### Crop-Specific Restrictions

- **On coarse soils –**
  - **DO NOT** apply more than 2.73 fl. oz/A (0.080 lb ai/A of pyroxasulfone and 0.006 lb ai/A of carfentrazone-ethyl) in a single application.
- **On medium soils –**
  - **DO NOT** apply more than 3.64 fl. oz/A (0.106 lb ai/A of pyroxasulfone and 0.008 lb ai/A of carfentrazone-ethyl) in a single application.
- **On fine soils –**
  - **DO NOT** apply more than 4.55 fl. oz/A (0.133 lb ai/A of pyroxasulfone and 0.009 lb ai/A of carfentrazone-ethyl) in a single application.
- **DO NOT** exceed a maximum cumulative amount of 4.55 fl. oz/A (0.133 lb ai of pyroxasulfone and 0.0095 lb ai of carfentrazone-ethyl) of F9312-3 per year from all sequential applications.
- **DO NOT** apply more than 0.133 lb ai/A total of pyroxasulfone to wheat per year.
- **DO NOT** apply more than a total of 0.031 lb ai/A of carfentrazone-ethyl to wheat per year.
- **DO NOT** apply more than twice in wheat per year when using labeled rates less than the single maximum application rate.
- The minimum re-treatment interval is 14 days apart
- **DO NOT** apply to durum wheat
- **DO NOT** apply preplant incorporated in wheat
- **DO NOT** apply preplant, preemergence, or delayed preemergence to broadcast seeded wheat
- **DO NOT** apply preemergence if ¼ inch. or more of rain is expected within 48 hours of application.
- **DO NOT** seed wheat deeper than 1.5 inch. after a preplant application or before a preemergence or delayed preemergence application
- **DO NOT** irrigate fields after a preemergence or delayed preemergence application until wheat spikes.
- **DO NOT** harvest, feed, or graze within 7 days after application.



### **Specific Spring and Winter Wheat Use Instructions and Precautions**

- Rainfall and/or irrigation totaling at least 0.5 inch prior to weed emergence may be necessary for herbicide activation and optimum weed control. If no rain occurs within 7 days after application, apply overhead irrigation if available.-Use a maximum of 0.5 inch on coarse textured soils and a maximum of 1.0 inch on medium and fine textured soils.
- Excessive rainfall, irrigation, or prolonged wet soil conditions after application of F9312-3 from seed germination through seedling emergence may increase the risk of wheat seedling injury and needs to be avoided if possible.
- Before applying to wheat, verification of F9312-3 selectivity on your variety must be confirmed to avoid injury to sensitive wheat varieties. Check with the local Cooperative Extension agent for information on potential F9312-3 varietal sensitivity. If variety sensitivity is unknown, such as with new varieties, apply F9312-3 on a small area to confirm variety safety before use on large acreage.

### **Application Timings**

F9312-3 may be applied in a single application or in sequential applications.

### **Preplant Surface and Applications**

Apply F9312-3 at the use rates specified in **Table 17** as a broadcast spray to the soil surface no more than 30 days prior to planting on all soil types. If rainfall or irrigation is not received within 7 days, weed control may be erratic.

Apply preplant only to soils with a CEC greater than 15, pH less than 7.5 and with an OM greater than 2% to reduce the risk of crop response.

### **Preemergence Surface Application**

Apply F9312-3 at use rates specified in **Table 17** after planting and before wheat spiking as a broadcast spray to the soil surface with uniform seedbed which is firm and free of clods. Rainfall or irrigation of at least 0.5 inch prior to weed emergence is required for optimum herbicide activation and weed control. If rainfall or irrigation is not received within 7 days, weed control may be erratic. Complete seed furrow closure and adequate soil coverage must occur to prevent seed contact with F9312-3.

Apply preemergent only to soils with a CEC greater than 15, pH less than 7.5 and with an OM greater than 2% to reduce the risk of crop response.

### **Delayed Preemergence Application**

Apply F9312-3 at use rates specified in **Table 17** as a broadcast spray to the soil surface following wheat planting when 80 percent of germinated wheat seeds have a shoot at least ½ inch long until wheat spiking to the soil surface with uniform seedbed which is firm and free of clods. Rainfall or irrigation of at least 0.5 inch prior to weed emergence is required for optimum herbicide activation and weed control. If rainfall or irrigation is not received within 7 days, weed control may be erratic.

### **Early Postemergence Application**

Apply F9312-3 at use rates specified in **Table 17** as a broadcast spray to wheat at spiking up to the 4<sup>th</sup> tiller growth stage. F9312-3 will provide residual preemergence control of susceptible weeds after F9312-3 is activated by rainfall or irrigation. F9312-3 may be tank-mixed or applied as a sequential application with a labeled postemergence herbicide(s) for control of emerged weeds. Read and follow the most restrictive tank-mix partner label prior to application. For optimum postemergence performance of small emerged susceptible broadleaf weeds, apply F9312-3 to actively growing weeds up to 2 inches tall and rosettes less than 2 inches across. Thorough coverage is essential for control. The use of an adjuvant is advised for consistent postemergence control. Under high moisture conditions the crop may experience some temporary crop response. The crop will rapidly outgrow these effects and develop normally with no reduction in yield.

**Early Postemergence Weed Control in Wheat**

When used as directed in a postemergence application on wheat, F9312-3 will provide control of the listed weeds

**Tank Mixes**

For control of emerged weeds, weeds larger than listed in Table 2 and weeds not listed on the label a tankmix partner is required. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

**Sequential Applications**

If a sequential application program of F9312-3 is used (e.g., preplant or preemergence application followed by early postemergence application), the maximum combined rate of F9312-3 that may be applied in a year is 4.5 oz./A (0.142 lb ai/A containing 0.133 lb ai of pyroxasulfone and 0.0095 lb ai of carfentrazone-ethyl).

**Replanting Instructions**

If a labeled crop treated with F9312-3 is lost due to a natural catastrophe such as hail or frost, cotton, wheat, corn, and soybeans can be replanted immediately, provided this is not restricted on the label of a product used previously or by a product applied in a tank mixture with F9312-3.

## ROTATIONAL CROPS

Table 18.

Crop	F9312-3 Use Rate – fl Oz/A				
	1.82	3.64	5.46	7.28	9.12
	Rotational Crop Interval (months after application)				
Alfalfa	10	10	10	10	10
Bulb Onion	2	4	4	4	4
Canola (rapeseed)	12	12	15	18	18
Celery	0	0	0	0	4
Chickpea	0	0	0	2	4
Corn	0	0	0	0	0
Cotton	1	2	4	4	4
Bean, edible dry	9	9	9	9	11
Edamame	0	0	0	4	4
Edible Succulent Peas, succulent edible beans,	9	9	11	11	11
Garlic	0	0	4	4	4
Flax	2	4	6	8	8
Grain Sorghum	6	6	10	10	12
Cool-season grasses grown for seed*	11**	11**	18	18	18
Warm-season grasses grown for seed	18	18	18	18	18
Green onion	4	6	8	12	12
Lentils	0	0	0	4	4
Mint	4	4	4	4	4
Peanut	1	2	4	4	4
Peas, field (dry)	0	0	0	4	4
Potato	0	0	0	0	0
Rice	10	12	18	24	24
Small grains (other than wheat)	11	11	11	18	18
Soybean	0	0	0	4	4
Sugarbeet	12	12	15	15	15
Safflower	1	1	1	2	4
Sunflower	0	0	0	2	4

Other group 20B crops	4	4	4	4	4
Sweet Potato	4	4	4	4	9
Tobacco	9	9	9	9	9
Wheat	0	1	4	6	6
Other crops	18	18	18	18	18

NOTE: For rotational crop restrictions when F9312-3 is used in tank mixtures or sequentially with other products, refer to the rotation intervals on the other product label for possible additional restrictions.

\*Only when grown in states of Idaho, Oregon, and Washington. For all other states, see rotational crop interval for "Other Crops".

\*\* An 11-month rotational crop interval only when greater than 15 inches of precipitation (rainfall/irrigation) has occurred from time of application to planting of grasses grown for seed. If less than 15 inches of precipitation has occurred, the rotational interval is 18 months.

### **LABEL TRACKING INFORMATION**

Label Code: Master D-4337 030420 xxxxxx

Replaces Label Code: 08-03-18

EPA Approval Date:

FMC Corporation  
2929 Walnut Street  
Philadelphia, PA 19104  
215-299-6000

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**ACCEPTED**

03/06/2020

Under the Federal Insecticide, Fungicide  
and Rodenticide Act as amended, for the  
pesticide registered under  
EPA Reg. No. 279-3464

# Supplemental Labeling

F9312-3

EPA Reg. No. 279-3464

This supplemental label expires on 3/4/2023 and must not be used or distributed after this date.

For weed control in corn, cotton, dry shelled pea and bean (crop group 6c), fallow, flax, peanut, soybean, sunflower (subgroup 20B), and wheat.

## DIRECTIONS FOR USE

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN A MANNER INCONSISTENT WITH ITS LABELING. ALL APPLICABLE DIRECTIONS, RESTRICTIONS AND PRECAUTIONS ON THE EPA REGISTERED LABEL ARE TO BE FOLLOWED.

This Supplemental labeling must be in the possession of the user at the time of pesticide application. Read the label affixed to the container before applying. Carefully follow all precautionary statements and application use directions.

### ACTIVE INGREDIENT CONVERSION TABLE (FL OZ F9312-3 TO LB AI EQUIVALENT)

For the designated application rates of F9312-3 found in this label, refer to the table below for active ingredient equivalents.

Table 4.

F9312-3 Rate (oz/A)	ACTIVE INGREDIENT EQUIVALENT	
	Pyroxasulfone (Lb ai/A)	Carfentrazone-ethyl (Lb ai/A)
1.27	0.037	0.003
1.36	0.040	0.003
1.82	0.053	0.004
2.25	0.066	0.005
2.5	0.073	0.005
2.7	0.079	0.006
2.73	0.080	0.006
2.75	0.080	0.006
2.8	0.082	0.006
3	0.087	0.006
3.25	0.095	0.007

3.64	0.106	0.008
3.8	0.111	0.008
4	0.117	0.008
4.5	0.131	0.009
4.55	0.133	0.009
5	0.146	0.010
5.25	0.153	0.011
5.46	0.159	0.011
5.5	0.160	0.011
6	0.175	0.013
6.4	0.187	0.013
6.5	0.190	0.014
7.28	0.212	0.015
7.3	0.213	0.015
7.6	0.222	0.016
9.12	0.266	0.019

## CORN

### Fall and Early Preplant

**Table 5. F9312-3 application rates for fall or early preplant applications greater than 14 days ahead of planting in field corn (grown for grain, seed and silage).**

Early preplant	F9312-3 fl oz./A		
	Coarse	Medium	Fine
15-45 days prior to planting	3.5 – 4.5	4.5 – 5.5	5.0 – 7.28

### PREPLANT / PREEMEREGNCE APPLICATION RATES

**Table 6. F9312-3 application rates for field corn (grown for grain, seed and silage) sweet corn and popcorn including sweet corn and popcorn grown for seed. Apply from 14 days preplant up to prior to spike stage corn.**

Organic Matter	F9312-3 fl oz./A		
	Coarse (Excluding sweet corn)	Medium (Excluding sweet corn at 2.0% O.M or less)	Fine
Less than 1.0%	2.75 – 3.5	3.0 – 4.5	3.5 – 4.5
1% to 3%	3.0 – 4.0	3.5 – 5.5	4.5 – 6.0
Greater than 3%	4 – 5.0	4.5 – 6.0	5.5 – 7.28

- Use rates listed above are for control or suppression of weeds listed in Table 1.
- Before applying F9312-3 to sweet corn, popcorn, or seed corn, check with your local seed supplier to verify the selectivity on any inbred lines or hybrids to avoid any possible injury.
- For early preplant applications and/or in reduce tillage (i.e. no-till/ high residue) systems or heavy weed pressure use the higher labeled rate by the soil type.

- For preplant burndown of emerged weeds, tank-mix another herbicide such as 2,4-D, dicamba, glyphosate, atrazine or similar for increased levels of weed control.
- Corn seed must be planted a minimum of 1.5 inches deep. Shallow planting can lead to increased crop response risk.
- Early preplant surface applications are not advised for coarse textured soils, in areas where annual rainfall (or rainfall plus irrigation) typically exceeds 40 inches, or for popcorn or sweet corn.

For control/suppression of additional weed species or for increased control of troublesome weeds, F9312-3 herbicide may be used in combination with other labeled corn herbicides including:

<b>Product</b>	<b>Weed species</b>
Balance® Flexx (EPA Reg. No. 264-1067, Isoxaflutole)  Callisto (EPA Reg. No.100-1131, Mesotrione)	Velvetleaf, Kochia, Lambsquarters, Common and Giant Ragweed, Pigweeds, Waterhemp, Pennsylvania smartweed, Nightshade.
Atrazine	Cocklebur, Giant and Common ragweeds, Nightshade, Kochia (non-triazine resistant) Morningglory, Pigweeds, Russian thistle, Lambsquarters,
Hornet (EPA Reg. No. 62719-315, Clopyralid + Flumetsulam)	Cocklebur, Sunflower, Velvetleaf, Common and Giant Ragweed, Pennsylvania smartweed, Morningglory, Pigweeds, Lambsquarters

- Under heavy weed pressure, a sequential program of F9312-3 followed by an effective post emergence herbicide treatment or cultivation may be required for satisfactory weed control.

#### POSTEMERGENCE APPLICATION RATES

**Table 7. F9312-3 application rates for field corn (grown for grain, seed and silage), sweet corn and popcorn including sweet corn and popcorn grown for seed.**

<b>F9312-3 fl oz./A</b>		
<b>Coarse</b> (Excludes sweet corn)	<b>Medium</b> Excludes sweet corn at 2.0% O.M. or less	<b>Fine</b>
2.25 – 4.5	3.5 – 5.25	4.0 – 6.5

- Use rates listed above are for residual control on the weed control list (Table 1).
- Apply from emergence through V4 stage corn.
- For heavy weed densities and longer residual use the higher labeled rate by the soil type.
- For improved performance, F9312-3 may be tank-mixed with other herbicides such as atrazine, dicamba or other appropriate postemergence herbicides. Applications to weeds larger than specified in table 2 can result in unsatisfactory control.



## Crop-Specific Restrictions

- **On coarse textured soils -**
  - **DO NOT** apply more than a total of 5.0 fluid ounces of F9312-3 (containing 0.147 lb ai of pyroxasulfone and 0.011 lb ai of carfentrazone-ethyl) in a single application or as total per acre per year.
- **On medium soils -**
  - **DO NOT** apply more than 5.5 fluid ounces of F9312-3 (containing 0.160 lb ai of pyroxasulfone and 0.011 lb ai of carfentrazone-ethyl) in a single application.
  - **DO NOT** apply more than 9.12 fluid ounces of F9312-3 (containing 0.266 lb ai of pyroxasulfone and 0.019 lb ai of carfentrazone-ethyl) per acre per year.
- **On fine soils -**
  - **DO NOT** apply more than 7.28 fluid ounces of F9312-3 (containing 0.212 lb ai of pyroxasulfone and 0.015 lb ai of carfentrazone) in a single application.
  - **DO NOT** apply more than 9.12 fluid ounces of F9312-3 (containing 0.266 lb ai of pyroxasulfone and 0.019 lb ai of carfentrazone-ethyl) per acre per year.
- **DO NOT** apply F9312-3 for sweet corn on coarse textured soils or on any medium soils with less than 2.0% organic matter.
- **DO NOT** apply more than 0.266 lb ai/A of pyroxasulfone or 0.031 lb ai/A of carfentrazone-ethyl per acre in a year including preplant burndown. F9312-3 may be used prior to or after applications of other pyroxasulfone or carfentrazone-ethyl containing herbicides. When using F9312-3 in sequential programs,
- **DO NOT** exceed the maximum amount of either active ingredient per year for the soil textures as specified above.
- **DO NOT** apply F9312-3 more than two times in corn per year when using labeled rates less than the maximum total per year.
- **DO NOT** apply F9312-3 within 14 days of a previous application of F9312-3.
- **DO NOT** apply within 3 days of harvest.

## COTTON

### Application Rates

Application rates for **F9312-3** when applied alone, in tank mix, or sequentially in cotton are provided in **Table 8**.

**Table 8. Residual Rates of F9312-3 in Cotton**

Application Timing	Use Rate (oz./A) by Soil Texture <sup>1</sup> F9312-3 fl oz./A		
	Coarse <sup>2</sup>	Medium	Fine
Preplant Surface	1.365 – 1.82	1.82 – 2.73	2.73 – 3.80
Preplant Incorporated	1.365 – 1.82	1.82 – 2.73	2.73 – 3.80
Preemergence	1.365 – 1.82	1.82 – 2.73	2.73 – 3.80
Postemergence-Directed - Early and Lay-by	1.365 – 2.73	1.365 – 2.73	2.73 – 3.80

<sup>1</sup> Refer to **Table 3** for definitions of soil texture groups.

<sup>2</sup> **DO NOT** apply as a pre-plant or preemergent application on **Coarse** soils categorized as Sand or Loamy Sand.

### Crop-Specific Restrictions

- **On coarse and medium soils -**
  - **DO NOT** apply more than 2.73 fluid ounces of F9312-3 (containing 0.079 lb ai of pyroxasulfone and 0.006 lb ai of carfentrazone) in a single application.
  - **DO NOT** exceed 5.46 fluid ounces of F9312-3 (containing 0.158 lb ai of pyroxasulfone and 0.012 lb ai of carfentrazone) from all application timings in a year.
- **On fine soils –**
  - **DO NOT** apply more than 3.8 fluid ounces of F9312-3 (0.111 lb ai of pyroxasulfone and 0.008 lb ai of carfentrazone-ethyl) in a single application.
  - **DO NOT** apply more than 7.6 fluid ounces of F9312-3 (containing 0.0223 lb ai of pyroxasulfone and 0.159 lb ai of carfentrazone-ethyl) per year cumulative from all applications.
  - **DO NOT** apply more than 0.025 lb active ingredient of carfentrazone-ethyl per application or 0.124 lb active ingredient per year.
- **DO NOT** apply more than 2 applications per year to cotton when using labeled rates less than the total maximum.
- **Seedling Depth:** Crop seeds must be planted a minimum of 1 in. deep.
- **Pre-harvest Interval: DO NOT** harvest for a minimum of 7 days after the last application.
- The minimum re-treatment interval is 14 days.

### Crop-Specific Instructions and Precautions

- Rainfall and/or irrigation totaling at least 0.5 inch prior to weed emergence may be necessary for herbicide activation and optimum weed control. If no rain occurs within 7 days after application, apply overhead irrigation if available, at 0.5 to 0.75 inches of precipitation. Use a maximum of 0.5 inch on coarse textured soils and a maximum of 1.0 inch on medium and fine textured soils.
- Excessive rainfall, irrigation, or prolonged cool and/or wet soil conditions after application of F9312-3 from seed germination through seedling emergence may increase the risk of cotton seedling injury and needs to be avoided if possible.
- Before applying to cotton, verification of F9312-3 selectivity on your variety must be confirmed to avoid injury to sensitive cotton varieties. Check with the local Cooperative Extension agent for information on potential F9312-3 varietal sensitivity. If variety sensitivity is unknown, such as with new varieties, apply F9312-3 on a small area to confirm variety safety before use on large acreage.

### Application Timings

**F9312-3** may be applied in a single application or in sequential applications.

### Preplant Surface or Preplant Incorporated Applications

#### (up to 45 days prior to planting)

Apply **F9312-3** at the use rates specified in **Table 8** as a broadcast or banded spray to the soil surface or incorporated up to 45 days before planting on all soil types.

### Preemergence Surface Application

Apply **F9312-3** at use rates specified in **Table 8** as a broadcast or banded spray to the soil surface after planting and before crop emergence.

**DO NOT** apply **F9312-3** directly to cotton as a broadcast postemergence spray after emergence (at-cracking) or injury may occur.

### Postemergence-Directed – Early and Lay-by Application

**F9312-3** is a contact plus residual herbicide for postemergence directed sprayer or hooded/shielded sprayer applications for the control of broadleaf weeds in cotton. Apply **F9312-3** alone or as a tank mixture with other herbicides to emerged and actively growing weeds. For specific mixing instructions, refer to the Mixing and Loading Instructions under the PRODUCT INFORMATION section. Applications of **F9312-3** must be made with directed sprayers or hooded sprayers to prevent contact of spray solution with foliage, green stem tissue, or blooms. **DO NOT** allow spray solution to contact cotton foliage, green stem tissue, or blooms. Directed spray equipment must position nozzles a minimum 3 to 4 inches above the soil, with nozzles directed beneath the crop canopy. **F9312-3** tank mix applications shall be made to cotton that is a minimum of 6 inches in height. Applications to cotton at 5 to 6 nodes or less must be made with hooded or shielded sprayer equipment to completely avoid contact with cotton plants. Apply lay-by applications of **F9312-3** or any tank mixtures at later growth stages of cotton when cotton plants have achieved a height of 12 inches or more with sufficient bark development and height differential between crop bottom leaves and the soil. Spray solution shall be directed at the base of cotton plants to avoid contact with green stem tissue or foliage while maintaining maximum contact with broadleaf weeds that are at appropriate treatment size. **DO NOT** apply when conditions favoring drift exist or wind is above 10 mph. For control of emerged weeds, weeds larger than listed in table 2, or for weeds not covered on this label, a tank mix partner is required. Coverage is essential for good control. The use of an adjuvant is advised for consistent control.

### Crop-Specific Post-Directed Precautions

Under high moisture conditions the crop may experience some temporary crop response. The crop will rapidly outgrow these effects and develop normally with no reduction in yield.

### FALLOW

F9312-3 may be used as a residual treatment to control weeds listed at any time of the year during the fallow period following crop harvest and before the following crop is planted.

Follow all rotational crop planting intervals listed on Table 18.

Apply F9312-3 as a broadcast spray at 2.5 - 7.28 fluid ounces per acre (0.073 – 0.212 lb ai/A of pyroxasulfone/0.005 – 0.015 lb ai/A of Carfentrazone-ethyl) .

The minimum re-treatment interval is 30 days, but **DO NOT** exceed the maximum annual cumulative amount of 9.12 fl. oz./A (0.285 lb active ingredient) of F9312-3 per year.

### Tank Mixes

For control of emerged weeds, weeds larger than listed on Table 2, and weeds not listed on the label, a tank mix partner is required. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

### FLAX

#### SPRING PREPLANT AND PREEMERGENCE APPLICATION RATES

Table 9. F9312-3 application rates for Flax

Organic Matter	F9312-3 fl oz./A		
	Coarse	Medium	Fine

Less than 3%	1.82 – 9.12	2.75 – 9.12	2.75 – 9.12
Greater than 3%	1.82 – 9.12	2.75 – 9.12	4.0 – 9.12

- Use rates listed above are for control or suppression of weeds listed in table 1.
- Applications may be made up to 30 days prior to planting on all soil types.
- For early preplant applications and reduced tillage (i.e. no-till/ high residue) systems use the higher labeled rate by the soil type.
- Ensure good seed furrow closure and soil coverage to avoid contact with F9312-3. Shallow planting and open seed furrow can lead to increased crop injury risk.
- Early preplant surface applications are not advised for coarse textured soils, in areas where annual rainfall (or rainfall plus irrigation) typically exceeds 40 inches.

For additional control of kochia, Russian thistle, common lambsquarter, nightshades, annual morningglories, Palmer amaranth and others, use preplant/preemergence tank mixes or sequential applications of Spartan® 4F herbicide (EPA Reg. No. 279-3220, Sulfentrazone), or Spartan® Charge herbicide (EPA Reg. No. 279-3337, Carfentrazone-ethyl + Sulfentrazone) at their labeled use rate. A sequential application of a postemergence herbicide labeled for control of these broadleaf weeds may also be used to for additional control during the growing season.

### Crop-Specific Restrictions

- **DO NOT** apply more than 9.12 fl oz. per acre (0.266 lb ai/A of pyroxasulfone/0.019 lb ai/A of Carfentrazone-ethyl) of F9312-3 in a single application.
- **DO NOT** apply more than 3 applications per year of F9312-3.
- The minimum re-treatment interval is 14 days.
- **DO NOT** apply more than a cumulative total of 0.266 lb ai/A of pyroxasulfone or 0.096 lb a.i./A of carfentrazone-ethyl to flax in a year including preplant burndown.
- F9312-3 may be used prior to or after applications of other pyroxasulfone or carfentrazone containing herbicides. When using F9312-3 in sequential programs, **DO NOT** exceed the maximum amount of either active ingredient per year for the soil textures as specified above.

### Crop-Specific Precautions

- The use of F9312-3 may result in temporary suppression of growth in flax if extreme conditions such as high rainfall and extended periods of water-saturated soil occur during sunflower germination or early seedling development.
- Prolonged periods of dry weather following applications of F9312-3 may reduce herbicide efficacy. If adequate rainfall is not received, weed emergence and escapes can occur. A post herbicide may be needed to control these weed escapes.
- The activity of F9312-3 may be reduced if heavy trash is present on the soil surface covering more than 25-50% of the soil. To improve performance, manage trash levels with uniform spreading with combine or light tillage. Application rates at the higher side of the rate ranges may also improve performance in heavy trash situations.

## PEANUT SPRING PREPLANT, PREPLANT INCORPORATED, PREEMERGENCE AND POSTEMERGENCE APPLICATION RATES

Table 10. F9312-3 application rates for Peanuts

Organic Matter	F9312-3 fl oz./A		
	Coarse	Medium	Fine
Less than 3%	2.7 – 4.0	2.7 – 4.0	2.7 – 4.0
Greater than 3%	2.7 – 4.0	2.7 – 4.0	2.7 – 4.0

- Use rates listed above are for control or suppression of weeds listed in Table 1.
- Applications may be made up to 14 days prior to planting on all soil types.
- Preemergence applications must be made prior to peanut cracking or emergence to avoid potential crop response.
- Peanut seed must be planted a minimum of 1.0 inches deep. Shallow planting can lead to increased crop injury risk.
- Check with your local seed company before applying F9312-3 to peanuts, regarding the sensitivity of that variety to F9312-3 to avoid potential injury.

#### **POSTEMERGENCE APPLICATIONS:**

- F9312-3 may be applied postemergence to peanuts from “at cracking to first leaf stage through beginning pod development.
- Apply broadcast over top of the crop or directed to soil surface. The use of an adjuvant is advised for consistent postemergence control.
- Postemergence applications of F9312-3 are for residual control of weeds emerging later. F9312-3 can provide some postemergence activity on small, newly emerging seedling broadleaf weeds listed in table 2, but weeds larger than listed in table 2 or other emerged weeds will require a tank-mix partner for adequate control.
- F9312-3 may be applied with other peanut postemerge herbicides for improved weed control. When tank-mixing F9312-3 with other products, follow the most restrictive precautions and instructions for all products used.

#### **Crop-Specific Restrictions**

- **DO NOT** apply more than 4.0 fl oz. per acre (0.117 lb ai/A of pyroxasulfone/0.008 lb ai/A of Carfentrazone-ethyl) of F9312-3 in a single application.
- **DO NOT** apply F9312-3 more than 3 times per year.
- **DO NOT** apply F9312-3 more than a total of 9.12 fluid ounces per acre per year (0.266 lb ai/A of pyroxasulfone/0.019 lb ai/A of carfentrazone-ethyl).
- The minimum re-treatment interval is 14 days.
- **DO NOT** apply more than 0.266 lb ai/A of pyroxasulfone or 0.096 lb a.i./A of carfentrazone-ethyl to peanuts in a year including preplant burndown. F9312-3 may be used prior to or after applications of other pyroxasulfone or carfentrazone-ethyl containing herbicides.
- When using F9312-3 in sequential programs, **DO NOT** exceed the maximum amount of either active ingredient per year for the soil textures as specified above.

#### **Crop-Specific Precautions**

- The use of F9312-3 may result in temporary suppression of growth in peanut if extreme conditions such as high rainfall and extended periods of water-saturated soil occur during peanut germination or early seedling development.
- Before applying to peanut, verify with your local seed company (supplier) the selectivity of F9312-3 on your variety to avoid potential crop injury.
- Prolonged periods of dry weather following applications of F9312-3 may reduce herbicide efficacy. If adequate rainfall is not received, weed emergence and escapes can occur. A postemergence herbicide may be needed to control these weed escapes. Under high moisture conditions and/or extremely cool environmental conditions, the crop may experience some temporary crop response. The crop will rapidly outgrow these effects and develop normally with no reduction in yield.

## PEA AND BEAN, DRIED SHELLLED, (EXCEPT SOYBEAN), SUBGROUP 6C

### FALL/SPRING PREPLANT AND PREEMERGENCE APPLICATION RATES

**Table 11. F9312-3 Application Rates:**

Organic Matter	F9312-3 fl oz./A		
	Coarse	Medium	Fine
Less than 3%	-	2.75 – 3.25	3.5 – 4.5
Greater than 3%	-	3.0 – 4.5	4.0 – 5.0

- Use rates listed above are for control or suppression of weeds listed in table 1.
- For early preplant applications and reduced tillage (i.e. no-till/ high residue) systems use the higher labeled rate by the soil type.
- For additional burndown of emerged weeds, F9312-3 can be tank-mixed with other herbicides such as glyphosate, glufosinate and others.
- Spring preplant applications may be made up to 30 days prior to planting.
- Preemergence applications must be made prior to cracking or emergence to avoid potential crop response.
- Dry Peas/Bean seed must be planted a minimum of 1.0 inches deep and ensure furrow is closed and there is good soil coverage. Shallow planting can lead to increased crop injury risk.

For additional control of kochia, Russian thistle, common lambsquarter, nightshades, annual morningglories, Palmer amaranth and others, use preplant/preemergence tank mixes at their labeled use rate. A sequential application of a postemergence herbicide labeled for control of broadleaf weeds may also be used to for additional control during the growing season.

#### Crop-Specific Restrictions

- **DO NOT** apply more than 5.0 fl oz. per acre (0.146 lb ai/A of pyroxasulfone/0.010 lb ai/A of Carfentrazone-ethyl) of F9312-3 in a single application.
- **DO NOT** apply F9312-3 more than 3 times per year.
- The minimum re-treatment interval is 14 days.
- **DO NOT** apply more than 0.266 lb ai/A of pyroxasulfone or 0.096 lb a.i./A of carfentrazone-ethyl to dry peas and beans in year including preplant burndown. F9312-3 may be used prior to or after applications of other pyroxasulfone or carfentrazone containing herbicides.
- When using F9312-3 in sequential programs, **DO NOT** exceed the maximum amount of either active ingredient per year for the soil textures as specified above.
- Vegetable, foliage of legume, except soybean, subgroup 7A may be fed or grazed by livestock.

#### Crop-Specific Precautions

- The use of F9312-3 may result in temporary suppression of growth in of dry peas and dry beans if extreme conditions such as high rainfall and extended periods of water-saturated soil occur during dry pea and bean germination or early seedling development.
- Prolonged periods of dry weather following applications of F9312-3 may reduce herbicide efficacy. If adequate rainfall is not received, weed emergence and escapes can occur. A post herbicide may be needed to control these weed escapes.
- The activity of F9312-3 may be reduced if heavy trash is present on the soil surface covering more than 25-50% of the soil. To improve performance, manage trash levels with uniform spreading with combine or light tillage. Application rates at the higher side of the rate ranges may also improve performance in heavy trash situations.



- **DO NOT** apply Sharpen® powered by Kixor® herbicide (EPA Reg No 7969-278, Saflufenacil) or any other saflufenacil containing product with, before, or after any F9312-3 herbicide application to lentils.

## SOYBEAN

Fall and spring early preplant applications greater than 14 days ahead of planting in soybeans.

**Table 12. F9312-3 Application rates**

Early preplant	F9312-3 fl oz./A		
	Coarse	Medium	Fine
15-45 days prior to planting	2.75 - 3.8	4.0 – 5.0	5.0 – 6.4

## PREPLANT, PREPLANT INCORPORATED AND PREEMERGENCE APPLICATION RATES

**Table 13. F9312-3 Application Rates**

Organic Matter	F9312-3 fl oz./A		
	Coarse	Medium	Fine
Less than 1%	2.25 – 2.75	2.75 – 4.0	4.0 – 5.50
1 to 3%	2.25 – 3.8	2.75 – 5.5	4.5 – 6.4
Greater than 3%	3.8	4.0 – 5.5	4.5 – 6.4

- Use rates listed above are for control or suppression of weeds listed in table 1.
- For early preplant applications and reduced tillage (i.e. no-till/ high residue) systems use the higher side of labeled rate by the soil type.
- Preemergence applications must be made prior to soybean cracking and emergence to avoid potential crop injury response.
- Soybean seed must be planted a minimum of 1.0 inches deep and furrow is closed with good soil coverage. Shallow planting can lead to increased crop injury risk.
- Early preplant surface applications are not advised for coarse textured soils, in areas where annual rainfall (or rainfall plus irrigation) typically exceeds 40 inches.

For additional control of morningglory, common ragweed, Palmer amaranth and giant ragweed, velvetleaf, sunflower and others, use preplant/preemergence tank mixes or sequential applications of Authority® herbicides (Authority® Assist Herbicide EPA Reg No 279-3330, Sulfentrazone + Imazethapyr, Authority® Elite Herbicide EPA Reg No 279-3442, S-Metolachlor + Sulfentrazone, Authority® First DF Herbicide EPA Reg No 279-3246, Sulfentrazone + Cloransulam-Methyl, Authority® Maxx Herbicide EPA Reg No 279-9560, Sulfentrazone + Chlorimuron Ethyl, Authority® MTZ DF Herbicide EPA Reg No 279-3340, Metribuzin + Sulfentrazone, Authority® Supreme Herbicide EPA Reg No 279-3601, Pyroxasulfone + Sulfentrazone, Authority® XL Herbicide EPA Reg No 279-3413, Sulfentrazone + Chlorimuron Ethyl), Spartan® 4F herbicide (EPA Reg. No. 279-3220, Sulfentrazone), or Spartan® Charge herbicide (EPA Reg. No. 279-3337, Carfentrazone-ethyl + Sulfentrazone) or other suitable herbicides at their labeled use rate. A sequential application of a postemergence herbicide labeled for control of these broadleaf weeds may also be used to for additional control during the growing season.



## POSTEMERGENCE APPLICATION RATES

Table 14. F9312-3 application rates.

F9312-3 fl oz./A		
Coarse	Medium	Fine
2.25 – 3.8	2.75 – 5	3.75 – 6.4

- Rates listed above are for residual control on the weed control list (Table 1).
- For heavy weed densities, longer residual or resistant weed populations, use the higher labeled rate by the soil type.
- Apply from emergence to the third trifoliolate (V3) leaf stage.
- Applications to weeds larger than specified in Table 2 can result in unsatisfactory control

For improved performance, broader spectrum, or control of weeds not on the label, F9312-3 herbicide may be tank mixed with other postemergence herbicides for soybeans. Postemergence tank mixes can increase the level of crop response observed, but soybeans should recover and not result in any yield reduction.

### Crop-Specific Restrictions

- **On coarse soils -**
  - **DO NOT** apply more than 3.8 fl. oz/A (containing 0.111 lb ai of pyroxasulfone and 0.008 lb ai of carfentrazone-ethyl) in a single application.
  - **DO NOT** exceed a maximum cumulative of 3.8 ozs/A of F9312-3 (containing 0.111 lb ai of pyroxasulfone and 0.008 lb ai of carfentrazone-ethyl) per year.
- **On medium soils -**
  - **DO NOT** apply more than 5.45 fl. oz/A (containing 0.159 lb ai of pyroxasulfone and 0.011) lb ai of carfentrazone-ethyl) in a single application.
  - **DO NOT** exceed a maximum cumulative total of 6.4 ozs/A of F9312-3 (containing 0.186 lb ai of pyroxasulfone and 0.0134 lb ai of carfentrazone-ethyl) per year.
- **On fine soils -**
  - **DO NOT** apply more than 6.4 fl oz/A (containing 0.187 lb ai of pyroxasulfone and 0.013 lb ai of carfentrazone-ethyl) in a single application.
  - **DO NOT** exceed a maximum cumulative total of 6.4 fl.oz/A of F9312-3 (containing 0.187 lb ai of pyroxasulfone and 0.013 lb ai of carfentrazone-ethyl) per year.
- **DO NOT** apply F9312-3 more than twice per year using labeled rates less than the maximum single application.
- The minimum re-treatment interval is 14 days.
- **DO NOT** apply more than 0.023 lb ai/A of carfentrazone-ethyl or 0.186 lb ai/A of pyroxasulfone per acre on soybeans in a year including preplant burndown. F9312-3 may be used prior to or after applications of other pyroxasulfone or carfentrazone-ethyl containing herbicides.
- When using F9312-3 in sequential programs, **DO NOT** exceed the maximum amount of either active ingredient per year for the soil textures as specified above.

## SUNFLOWERS (subgroup 20b)

### FALL, SPRING PREPLANT, PREPLANT INCORPORATED AND PREEMERGENCE APPLICATION RATES

Table 15. F9312-3 application rates for Sunflower (subgroup 20b)

Organic Matter	F9312-3 fl oz./A		
	Coarse	Medium	Fine
Less than 3%	2 – 2.8	2.8 – 4.5	4.5 – 7.3
Greater than 3%	2.0 – 3.0	3.0 – 5.5	5.0 – 7.3

- Use rates listed above are for control or suppression of weeds listed in Table 1.
- For early preplant applications (15-45 days before planting) and reduced tillage (i.e. no-till/ high residue) systems use the higher labeled rate by the soil type.
- Preemergence applications must be made prior to sunflower cracking or emergence to avoid potential crop injury response.
- Sunflower seed must be planted a minimum of 1.0 inches deep and the seed furrow closed with good soil coverage of the seed. Shallow planting can lead to increased crop injury risk.
- Early preplant surface applications are not advised for coarse textured soils, in areas where annual rainfall (or rainfall plus irrigation) typically exceeds 40 inches.

For additional control of kochia, Russian thistle, common lambsquarter, nightshades, annual morningglories, Palmer amaranth and others, use preplant/preemergence tank mixes or sequential applications of Spartan® 4F herbicide (EPA Reg. No. 279-3220, Sulfentrazone), or Spartan® Charge herbicide (EPA Reg. No. 279-3337, Carfentrazone-ethyl + Sulfentrazone) at their labeled use rate. A sequential application of a postemergence herbicide labeled for control of these broadleaf weeds may also be used to for additional control during the growing season.

#### Crop-Specific Restrictions

- **DO NOT** apply more than 7.3 fl oz. per acre (0.213 lb ai/A of pyroxasulfone/0.015 lb ai/A of Carfentrazone-ethyl) of F9312-3 to sunflower (subgroup 20b) in a single application.
- **DO NOT** apply more than a cumulative of 9.12 fl oz/A (0.266 lb ai/A of pyroxasulfone/0.019 lb ai/A of carfentrazone-ethyl) of F9312-3 per year from all sequential applications.
- **DO NOT** apply F9312-3 more than 3 times per year.
- The minimum re-treatment interval is 14 days.
- **DO NOT** apply more than 0.266 lb ai/A of pyroxasulfone or 0.096 lb a.i./A of carfentrazone-ethyl to sunflowers in a year including preplant burndown. F9312-3 may be used prior to or after applications of other pyroxasulfone or carfentrazone containing herbicides. When using F9312-3 in sequential programs, **DO NOT** exceed the maximum amount of either active ingredient per year for the soil textures as specified above.

#### Crop-Specific Precautions

- The use of F9312-3 may result in temporary suppression of growth in sunflower if extreme conditions such as high rainfall and extended periods of water-saturated soil occur during sunflower germination or early seedling development.
- Prolonged periods of dry weather following applications of F9312-3 may reduce herbicide efficacy. If adequate rainfall is not received, weed emergence and escapes can occur. A post herbicide may be needed to control these weed escapes.
- The activity of F9312-3 may be reduced if heavy trash is present on the soil surface covering more than 25-50% of the soil. To improve performance, manage trash levels with uniform spreading with combine or light tillage. Application rates at the higher side of the rate ranges may also improve performance in heavy trash situations.

## WHEAT (Spring and Winter) \*

\*(Spring and Winter Wheat except in WA, OR, ID and MT) See section below for use in WA, OR, ID, and MT.

### Application Rates

Application rates for F9312-3 when applied alone, in tank mix, or sequentially are provided in **Table 16**.

**Table 16. Residual Rates of F9312-3 in Spring and Winter Wheat**

Application Timing	Use Rate (oz./A) by Soil Texture <sup>1</sup> F9312-3 fl oz./A		
	Coarse	Medium	Fine
Preplant Surface	1.27 – 2.73	1.82 – 3.64	2.73 – 4.55
Preemergence	1.27 – 2.73	1.82 – 3.64	2.73 – 4.55
Delayed Preemergence	2.0 – 2.73	2.75 – 3.64	3.5 – 4.55
Early Postemergence	2.0 – 2.73	2.75 – 3.64	2.73 – 4.55

<sup>1</sup> Refer to **Table 3** for definitions of soil texture groups.

### Crop-Specific Restrictions

- **On coarse soils –**
  - **DO NOT** apply more than 2.73 fl. oz/A (0.080 lb ai/A of pyroxasulfone and 0.006 lb ai/A of carfentrazone-ethyl) in a single application.
- **On medium soils –**
  - **DO NOT** apply more than 3.64 fl. oz/A (0.106 lb ai/A of pyroxasulfone and 0.008 lb ai/A of carfentrazone-ethyl) in a single application.
- **On fine soils –**
  - **DO NOT** apply more than 4.55 fl. oz/A (0.133 lb ai/A of pyroxasulfone and 0.009 lb ai/A of carfentrazone-ethyl) in a single application.
- **DO NOT** exceed a maximum cumulative amount of 4.55 fl. oz/A (0.133 lb ai of pyroxasulfone and 0.0095 lb ai of carfentrazone-ethyl) of F9312-3 per year from all sequential applications.
- **DO NOT** apply more than 0.133 lb ai/A total of pyroxasulfone to wheat per year.
- **DO NOT** apply more than a total of 0.031 lb ai/A of carfentrazone-ethyl to wheat per year.
- **DO NOT** apply more than twice in wheat per year when using labeled rates less than the single maximum application rate.
- The minimum re-treatment interval is 14 days.
- **DO NOT** apply to durum wheat
- **DO NOT** apply preplant incorporated in wheat
- **DO NOT** apply preplant, preemergence, or delayed preemergence to broadcast seeded wheat
- **DO NOT** apply preemergence if ¼ inch. or more of rain is expected within 48 hours of application.
- **DO NOT** seed wheat deeper than 1.5 inch. after a preplant application or before a preemergence or delayed preemergence application
- **DO NOT** irrigate fields after a preemergence or delayed preemergence application until wheat spikes.
- **DO NOT** harvest, feed, or graze within 7 days after application.

### Specific Spring and Winter Wheat Use Instructions and Precautions

- Rainfall and/or irrigation totaling at least 0.5 inch prior to weed emergence may be necessary for herbicide activation and optimum weed control. If no rain occurs within 7

days after application, apply overhead irrigation if available. -Use a maximum of 0.5 inch on coarse textured soils and a maximum of 1.0 inch on medium and fine textured soils.

- Excessive rainfall, irrigation, or prolonged wet soil conditions after application of F9312-3 from seed germination through seedling emergence may increase the risk of wheat seedling injury and needs to be avoided if possible.
- Before applying to wheat, verification of F9312-3 selectivity on your variety must be confirmed to avoid injury to sensitive wheat varieties. Check with the local Cooperative Extension agent for information on potential F9312-3 varietal sensitivity. If variety sensitivity is unknown, such as with new varieties, apply F9312-3 on a small area to confirm variety safety before use on large acreage.

### **Application Timings**

F9312-3 may be applied in a single application or in sequential applications.

### **Preplant Surface and Applications**

Apply F9312-3 at the use rates specified in **Table 16** as a broadcast spray to the soil surface no more than 14 days prior to planting on all soil types. If rainfall or irrigation is not received within 7 days, weed control may be erratic.

Apply preplant only to soils with a CEC greater than 15, pH less than 7.5 with an OM greater than 2% to reduce the risk of crop response.

### **Preemergence Surface Application**

Apply F9312-3 at use rates specified in **Table 16** after planting and before wheat spiking as a broadcast spray to the soil surface with uniform seedbed which is firm and free of clods. Rainfall or irrigation of at least 0.5 inch prior to weed emergence is required for optimum herbicide activation and weed control. If rainfall or irrigation is not received within 7 days, weed control may be erratic. Complete seed furrow closure and adequate soil coverage must occur to prevent seed contact with F9312-3.

Apply preemergent only to soils with a CEC greater than 15, pH less than 7.5 and with a OM greater than 2% to reduce the risk of crop response.

### **Delayed Preemergence Application**

Apply F9312-3 at use rates specified in **Table 16** as a broadcast spray to the soil surface following wheat planting when 80 percent of germinated wheat seeds have a shoot at least ½ inch long until wheat spiking to the soil surface with uniform seedbed which is firm and free of clods. Rainfall or irrigation of at least 0.5 inch prior to weed emergence is required for optimum herbicide activation and weed control. If rainfall or irrigation is not received within 7 days, weed control may be erratic.

### **Early Postemergence Application**

Apply F9312-3 at use rates specified in **Table 16** as a broadcast spray to wheat at spiking up to the 4<sup>th</sup> tiller growth stage. F9312-3 will provide residual preemergence control of susceptible weeds after F9312-3 is activated by rainfall or irrigation. F9312-3 may be tank-mixed or applied as a sequential application with a labeled postemergence herbicide(s) for control of emerged weeds. Read and follow the most restrictive tank-mix partner label prior to application. For optimum postemergence performance of small emerged susceptible broadleaf weeds, apply F9312-3 to actively growing weeds up to 2 inches tall and rosettes less than 2 inches across. Thorough coverage is essential for control. The use of an adjuvant is advised for consistent postemergence control.

Under high moisture conditions the crop may experience some temporary crop response. The crop will rapidly outgrow these effects and develop normally with no reduction in yield.

### **Tank Mixes**

For control of emerged weeds, weeds larger than listed in Table 2, and weeds not listed on the label a tank mix partner is required. It is the pesticide user's responsibility to ensure all products are registered for the intended use. Read and follow the applicable restrictions and

limitations and directions for use on all product labels involved in tank mixes. Users must follow the most restrictive directions for use and precautionary statements for each product in the tank mixture.

## **WHEAT (Spring and Winter) WA, OR, ID, & MT ONLY**

### **Application Rates**

Application rates for F9312-3 when applied alone, in tank mix, or sequentially are provided in **Table 17**.

**Table 17. Residual Rates of F9312-3 in Spring and Winter Wheat (WA, OR, ID and MT)**

Application Timing	Use Rate (oz./A) by Soil Texture <sup>1</sup> F9312-3 fl oz./A		
	Coarse	Medium	Fine
Preplant Surface	2.5 – 2.73	2.75 – 3.64	3.5 – 4.55
Preemergence	2.0 – 2.73	2.75 – 3.64	3.5 – 4.55
Delayed Preemergence	1.27 – 2.73	1.82 – 3.64	2.73 – 4.55
Early Postemergence	2.0 – 2.73	2.75 – 3.64	2.73 – 4.55

<sup>1</sup> Refer to **Table 3** for definitions of soil texture groups.

### **Crop-Specific Restrictions**

- **On coarse soils –**
  - **DO NOT** apply more than 2.73 fl. oz/A (0.080 lb ai/A of pyroxasulfone and 0.006 lb ai/A of carfentrazone-ethyl) in a single application.
- **On medium soils –**
  - **DO NOT** apply more than 3.64 fl. oz/A (0.106 lb ai/A of pyroxasulfone and 0.008 lb ai/A of carfentrazone-ethyl) in a single application.
- **On fine soils –**
  - **DO NOT** apply more than 4.55 fl. oz/A (0.133 lb ai/A of pyroxasulfone and 0.009 lb ai/A of carfentrazone-ethyl) in a single application.
- **DO NOT** exceed a maximum cumulative amount of 4.55 fl. oz/A (0.133 lb ai of pyroxasulfone and 0.0095 lb ai of carfentrazone-ethyl) of F9312-3 per year from all sequential applications.
- **DO NOT** apply more than 0.133 lb ai/A total of pyroxasulfone to wheat per year.
- **DO NOT** apply more than a total of 0.031 lb ai/A of carfentrazone-ethyl to wheat per year.
- **DO NOT** apply more than twice in wheat per year when using labeled rates less than the single maximum application rate.
- The minimum re-treatment interval is 14 days apart
- **DO NOT** apply to durum wheat
- **DO NOT** apply preplant incorporated in wheat
- **DO NOT** apply preplant, preemergence, or delayed preemergence to broadcast seeded wheat
- **DO NOT** apply preemergence if ¼ inch. or more of rain is expected within 48 hours of application.
- **DO NOT** seed wheat deeper than 1.5 inch. after a preplant application or before a preemergence or delayed preemergence application
- **DO NOT** irrigate fields after a preemergence or delayed preemergence application until wheat spikes.
- **DO NOT** harvest, feed, or graze within 7 days after application.

### **Specific Spring and Winter Wheat Use Instructions and Precautions**

- Rainfall and/or irrigation totaling at least 0.5 inch prior to weed emergence may be necessary for herbicide activation and optimum weed control. If no rain occurs within 7 days after application, apply overhead irrigation if available. Use a maximum of 0.5 inch on coarse textured soils and a maximum of 1.0 inch on medium and fine textured soils.
- Excessive rainfall, irrigation, or prolonged wet soil conditions after application of F9312-3 from seed germination through seedling emergence may increase the risk of wheat seedling injury and needs to be avoided if possible.
- Before applying to wheat, verification of F9312-3 selectivity on your variety must be confirmed to avoid injury to sensitive wheat varieties. Check with the local Cooperative Extension agent for information on potential F9312-3 varietal sensitivity. If variety sensitivity is unknown, such as with new varieties, apply F9312-3 on a small area to confirm variety safety before use on large acreage.

### **Application Timings**

F9312-3 may be applied in a single application or in sequential applications.

### **Preplant Surface and Applications**

Apply F9312-3 at the use rates specified in **Table 17** as a broadcast spray to the soil surface no more than 30 days prior to planting on all soil types. If rainfall or irrigation is not received within 7 days, weed control may be erratic.

Apply preplant only to soils with a CEC greater than 15, pH less than 7.5 and with an OM greater than 2% to reduce the risk of crop response.

### **Preemergence Surface Application**

Apply F9312-3 at use rates specified in **Table 17** after planting and before wheat spiking as a broadcast spray to the soil surface with uniform seedbed which is firm and free of clods. Rainfall or irrigation of at least 0.5 inch prior to weed emergence is required for optimum herbicide activation and weed control. If rainfall or irrigation is not received within 7 days, weed control may be erratic. Complete seed furrow closure and adequate soil coverage must occur to prevent seed contact with F9312-3.

Apply preemergent only to soils with a CEC greater than 15, pH less than 7.5 and with an OM greater than 2% to reduce the risk of crop response.

### **Delayed Preemergence Application**

Apply F9312-3 at use rates specified in **Table 17** as a broadcast spray to the soil surface following wheat planting when 80 percent of germinated wheat seeds have a shoot at least ½ inch long until wheat spiking to the soil surface with uniform seedbed which is firm and free of clods. Rainfall or irrigation of at least 0.5 inch prior to weed emergence is required for optimum herbicide activation and weed control. If rainfall or irrigation is not received within 7 days, weed control may be erratic.

### **Early Postemergence Application**

Apply F9312-3 at use rates specified in **Table 17** as a broadcast spray to wheat at spiking up to the 4<sup>th</sup> tiller growth stage. F9312-3 will provide residual preemergence control of susceptible weeds after F9312-3 is activated by rainfall or irrigation. F9312-3 may be tank-mixed or applied as a sequential application with a labeled postemergence herbicide(s) for control of emerged weeds. Read and follow the most restrictive tank-mix partner label prior to application. For optimum postemergence performance of small emerged susceptible broadleaf weeds, apply F9312-3 to actively growing weeds up to 2 inches tall and rosettes less than 2 inches across. Thorough coverage is essential for control. The use of an adjuvant is advised for consistent postemergence control.

Under high moisture conditions the crop may experience some temporary crop response. The crop will rapidly outgrow these effects and develop normally with no reduction in yield.

**Early Postemergence Weed Control in Wheat**

When used as directed in a postemergence application on wheat, F9312-3 will provide control of the listed weeds

**Tank Mixes**

For control of emerged weeds, weeds larger than listed in Table 2 and weeds not listed on the label a tank mix partner is required. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

**Sequential Applications**

If a sequential application program of F9312-3 is used (e.g., preplant or preemergence application followed by early postemergence application), the maximum combined rate of F9312-3 that may be applied in a year is 4.5 oz./A (0.142 lb ai/A containing 0.133 lb ai of pyroxasulfone and 0.0095 lb ai of carfentrazone-ethyl).

**Replanting Instructions**

If a labeled crop treated with F9312-3 is lost due to a natural catastrophe such as hail or frost, cotton, wheat, corn, and soybeans can be replanted immediately, provided this is not restricted on the label of a product used previously or by a product applied in a tank mixture with F9312-3.



## ROTATIONAL CROPS

Table 18.

Crop	F9312-3 Use Rate – fl Oz/A				
	1.82	3.64	5.46	7.28	9.12
	Rotational Crop Interval (months after application)				
Alfalfa	10	10	10	10	10
Bulb Onion	2	4	4	4	4
Canola (rapeseed)	12	12	15	18	18
Celery	0	0	0	0	4
Chickpea	0	0	0	2	4
Corn	0	0	0	0	0
Cotton	1	2	4	4	4
Bean, edible dry	9	9	9	9	11
Edamame	0	0	0	4	4
Edible Succulent Peas, succulent edible beans,	9	9	11	11	11
Garlic	0	0	4	4	4
Flax	2	4	6	8	8
Grain Sorghum	6	6	10	10	12
Cool-season grasses grown for seed*	11**	11**	18	18	18
Warm-season grasses grown for seed	18	18	18	18	18
Green onion	4	6	8	12	12
Lentils	0	0	0	4	4
Mint	4	4	4	4	4
Peanut	1	2	4	4	4
Peas, field (dry)	0	0	0	4	4
Potato	0	0	0	0	0
Rice	10	12	18	24	24
Small grains (other than wheat)	11	11	11	18	18
Soybean	0	0	0	4	4
Sugarbeet	12	12	15	15	15
Safflower	1	1	1	2	4
Sunflower	0	0	0	2	4

Other group 20B crops	4	4	4	4	4
Sweet Potato	4	4	4	4	9
Tobacco	9	9	9	9	9
Wheat	0	1	4	6	6
Other crops	18	18	18	18	18

NOTE: For rotational crop restrictions when F9312-3 is used in tank mixtures or sequentially with other products, refer to the rotation intervals on the other product label for possible additional restrictions.

\*Only when grown in states of Idaho, Oregon, and Washington. For all other states, see rotational crop interval for "Other Crops".

\*\* An 11-month rotational crop interval only when greater than 15 inches of precipitation (rainfall/irrigation) has occurred from time of application to planting of grasses grown for seed. If less than 15 inches of precipitation has occurred, the rotational interval is 18 months.

## LABEL TRACKING INFORMATION

Label Code: Supplemental D-4338 030420 xxxxxx

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