

62719-569

5/28/2009

10/19 File



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

28 MAY 2009

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

Diego Fonseca  
Dow AgroSciences  
9330 Zionsville Road  
Indianapolis, IN 46268-1054

Dear Mr. Fonseca:

Subject: Revised Label and Rotational Crop Intervals  
PowerFlex  
EPA Registration No. 62719-569  
Your Submission Dated April 15, 2009

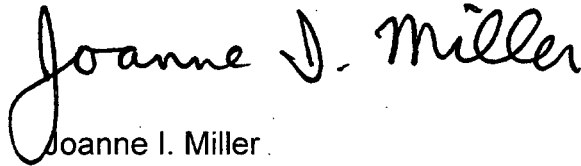
The amendment referred to above, submitted in connection with registration under section 3(c)(7)(A) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), is acceptable provided that you:

1. Submit/cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) or 4(a) when the Agency requires all registrants of similar products to submit such data.
2. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:
  - Delete the terms "recommends" and "recommended" in the directions for use. These statements are vague and unenforceable.
3. Submit one (1) copy of your final printed labeling before you release the product for shipment. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

If you have any questions concerning this letter please contact Mr. James Stone at 703-305-7391.

Sincerely yours,

A handwritten signature in black ink that reads "Joanne I. Miller". The signature is written in a cursive style with a large initial 'J'.

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

Enclosure

Q9F / PowerFlex / MSTR Amend / 04-14-09  
file: PowerFlex-569 MSTR 14Apr09d.doc

E-SUBMISSION

**PowerFlex™**  
EPA Reg. No.: 62719-569

**Registration Notes:**

Source label text based on EPA accepted label dated October 6, 2008 and notification dated January 30, 2009. Following are changes by amendment:

1. Revised Storage and Disposal per PR Notice 2007-4
2. Crop Rotation Intervals: added VA, DE, MD, OH, PA, and NJ to list of states for 3 month soybean rotation; added footnotes allowing cotton and sorghum rotation intervals of 3 months for certain timings and locations; added camelina to the list of crops with a 9 month rotation interval
3. Weeds Controlled or Suppressed: added sentence about PowerFlex not controlling ALS resistant biotypes; changed rescuegrass from control to suppression for a fall application; added pests cutleaf evening primrose and plains coreopsis and claimed suppression for fall and spring applications
4. Adjuvants: added statement about CPDA certified adjuvants
5. Winter wheat: added "liquid" in front of "fertilizer" in the third paragraph

™Trademark of Dow AgroSciences LLC

(Base label):

# PowerFlex™

## Herbicide

For postemergent control of annual grass and broadleaf weeds in winter wheat.

Group	2	HERBICIDE
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Active Ingredient:

pyroxsulam: N-(5,7-dimethoxy[1,2,4]triazolo  
 [1,5-a]pyrimidin-2-yl)-2-methoxy-  
 4-(trifluoromethyl)-3-pyridinesulfonamide ..... 7.5%

Other Ingredients ..... 92.5%

Total ..... 100.0%

Contains 0.075 lb of active ingredient per pound of product.

Keep Out of Reach of Children

### CAUTION

**ACCEPTED**  
with **COMMENTS**  
In EPA Letter Dated:

**MAY 28 2009**

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

62719-569

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### Precautionary Statements

#### Hazards to Humans and Domestic Animals

Causes moderate eye irritation. Avoid contact with eyes or clothing.

#### Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### User Safety Recommendations

Users should:

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

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**First Aid**

**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. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 day or night, for emergency treatment information.

**Environmental Hazards**

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

This product may contaminate surface water due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow ground water.

This product is classified as having high potential for runoff for several days 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 for contamination of water from runoff of rainwater. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

**Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

**Nonrefillable rigid containers 50 lb or less:****Storage and Disposal**

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

**Pesticide Storage:** Store in original container only.

**Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site according to label use directions or at an approved waste disposal facility.

**Container Handling:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. 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. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**Nonrefillable nonrigid containers:****Storage and Disposal**

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

**Pesticide Storage:** Store in original container only.

**Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site according to label use directions or at an approved waste disposal facility.

**Container Handling:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

**Refillable rigid containers larger than 50 lb:**

**Storage and Disposal**

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

**Pesticide Storage:** Store in original container only.

**Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site according to label use directions or at an approved waste disposal facility.

**Container Handling:** Refillable container. 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 from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

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**Refer to label booklet for Directions for Use.**

**Notice:** Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-569

EPA Est. \_\_\_\_\_

™Trademark of Dow AgroSciences LLC

**Produced for**

7 of 19

**Dow AgroSciences LLC**  
9330 Zionsville Road  
Indianapolis, IN 46268

**Net Weight** \_\_\_\_\_

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(cover):

# PowerFlex™

Herbicide

For postemergent control of annual grass and broadleaf weeds in winter wheat.

Group	2	HERBICIDE
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Active Ingredient:

pyroxsulam: N-(5,7-dimethoxy[1,2,4]triazolo  
 [1,5-a]pyrimidin-2-yl)-2-methoxy-  
 4-(trifluoromethyl)-3-pyridinesulfonamide ..... 7.5%

Other Ingredients ..... 92.5%

Total ..... 100.00%

Contains 0.075 lb of active ingredient per pound of product.

**Keep Out of Reach of Children**

## CAUTION

Refer to inside of label booklet for Directions for Use.

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Produced for  
**Dow AgroSciences LLC**  
 9330 Zionsville Road  
 Indianapolis, IN 46268

Net Weight \_\_\_\_\_



(Page 1 through end):

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## Precautionary Statements

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### Hazards to Humans and Domestic Animals

## CAUTION

Causes moderate eye irritation. Avoid contact with eyes or clothing.

### Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

### Engineering Controls

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Users should:

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

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Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 day or night, for emergency treatment information.

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### Directions for Use

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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.

**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 the label about personal protective equipment, restricted-entry interval, and notification to workers (as applicable). The requirements in this box 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.

For early entry into 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, wear:

- Coveralls
- Chemical resistant gloves made of any waterproof material
- Shoes plus socks

**Storage and Disposal**

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

**Pesticide Storage:** Store in original container only.

**Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site according to label use directions or at an approved waste disposal facility.

**Nonrefillable rigid containers 50 lb or less:**

**Container Handling:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. 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. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**Nonrefillable nonrigid containers:**

**Container Handling:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

**Refillable rigid containers larger than 50 lb:**

**Container Handling:** Refillable container. 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 from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

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### General Information

Use PowerFlex™ herbicide as a postemergence herbicide for the control of annual grass and broadleaf weeds in winter wheat.

PowerFlex rapidly stops growth of susceptible weeds. However, typical symptoms (discoloration) of controlled or suppressed weeds may not be noticeable for 1 to 2 weeks after application, depending upon growing conditions and weed susceptibility. Degree of control and duration of effect are dependent upon weed sensitivity, weed size, crop competition, growing conditions at and following treatment, and spray coverage.

### Use Precautions and Restrictions

When applying this product in tank mix combination, follow all applicable use directions, precautions, and limitations on each manufacturer's label.

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

Do not apply PowerFlex directly to, or otherwise permit it to come into direct contact with, susceptible crops or desirable plants including alfalfa, barley, canola, beans, cotton, flowers, grapes, lettuce, lentils, mustard, oats, peas, potatoes, radishes, soybeans, sugar beets, sunflowers, tobacco, tomatoes, vegetables, or other desirable broadleaf crops or ornamental plants. Do not permit spray mists containing PowerFlex to drift onto such plants.

Do not apply to crops under seeded with legumes.

### Crop Rotation Intervals

The following rotational crops may be planted at the indicated interval following application of PowerFlex.

Numbers in parentheses (-) refer to Specific Crop Rotation Information.

Crop	Rotation Interval (1) (Months)
wheat	1
soybean (3)	5
barley, field corn, grasses, millet, oats, popcorn, seed corn, sweet corn, sorghum (4)	9
alfalfa, camelina, canola, chickpea, cotton (5), dry bean, pea (dry and succulent), flax, lentil, mustard,	9

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peanuts, potato (2), safflower, sugar beet, sunflower	
other crops not listed	12

**Specific Crop Rotation Information:**

- (1) Minimum number of months that must elapse before planting other crops after application of PowerFlex.
- (2) In Idaho, the interval for rotation to potato is 16 months.
- (3) Minimum rotation interval for soybeans planted after winter wheat harvest is 3 months for a PowerFlex application made in the following states: AL, AR, DE, GA, IL, IN, KS, KY, LA, MD, MO, MS, NC, NE, NJ, OH, OK, PA, SC, TN, TX and VA.
- (4) Minimum rotation interval for sorghum planted after winter wheat harvest is 3 months for a PowerFlex application made in the following states: AL, AR, DE, GA, IL, IN, KS, KY, LA, MD, MO, MS, NC, NE, NJ, OH, OK, PA, SC, TN, TX, and VA.
- (5) Minimum rotation interval for cotton planted after winter wheat harvest is 3 months for a PowerFlex application made in the following states: AL, AR, GA, KS, KY, LA, MO, MS, NC, OK, SC, TN, TX, and VA.

**Note:** PowerFlex is degraded primarily by microbial activity and breaks down more rapidly under favorable soil moisture and temperature conditions. Correspondingly, the rate of degradation may be slower under extreme conditions of drought or cold temperatures. When soil moisture conditions are abnormally dry during the interval between application of PowerFlex and planting the next crop, conduct a field bio-assay by planting test strips of the desired rotational crop. Monitor the test strips during germination and emergence for any abnormal growth to determine if the rotational crop can be grown successfully.

**Avoiding Injurious Spray Drift**

This product can affect broadleaf plants directly through foliage and indirectly by root uptake from treated soil. Do not apply PowerFlex directly to, or allow spray drift to come into contact with, broadleaf crops including, but not limited to, alfalfa, barley, canola, beans, cotton, flowers, grapes, lettuce, lentils, mustard, oats, peas, potatoes, radishes, soybeans, sugar beets, sunflowers, tobacco, tomatoes, vegetables, or other desirable broadleaf crops or ornamental plants or soil where sensitive crops will be planted the same season. (See Crop Rotation Intervals section.)

Make applications only when there is little or no hazard from spray drift. Very small quantities of spray, which may not be visible, may seriously injure crops, whether dormant or actively growing. When applying PowerFlex, use low pressure equipment capable of producing sprays of uniform droplet size with a minimum of fine spray droplets. Under adverse weather conditions, fine spray droplets that do not settle rapidly onto target vegetation may be carried a considerable distance from the treatment area. A drift control or spray thickening agent may be used with this product to improve spray deposition and minimize the potential for spray drift. If used, follow all use recommendations and precautions on the product label.

**Ground Applications:** To minimize spray drift, apply PowerFlex in a total spray volume of 10 gallons or more per acre using spray equipment designed to produce large-droplet, low pressure sprays. Refer to the spray equipment manufacturer's recommendations for detailed information on nozzle types, arrangement, spacing and operating height and pressure. Spot treatments should be applied only with a calibrated boom to prevent over application. Operate equipment at spray pressures no greater than is necessary to produce a uniform spray pattern. Operate the spray boom no higher than is necessary to produce a uniformly overlapping pattern between spray nozzles. Do not apply with hollow cone-type insecticide nozzles or other nozzles that produce a fine-droplet spray.

**Aerial Application:** To minimize spray drift, apply PowerFlex in a total spray volume of 5 gallons or more per acre. Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application

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should be avoided below 2 mph due to variable wind direction and high potential for temperature inversion. Spray drift from aerial application can be minimized by applying a coarse spray at spray boom pressure no greater than 30 psi; by using straight-stream nozzles directed straight back; and by using a spray boom no longer than 3/4 the rotor or wing span of the aircraft. Spray pattern and droplet size distribution can be evaluated by applying sprays containing a water-soluble dye marker or appropriate drift control agents over a paper tape (adding machine tape). Mechanical flagging devices may also be used.

Do not apply under conditions of a low level air temperature inversion. A temperature inversion is characterized by little or no wind and lower air temperature near the ground than at higher levels. The behavior of smoke generated by an aircraft-mounted device or continuous smoke column released at or near site of application will indicate the direction and velocity of air movement. A temperature inversion is indicated by layering of smoke at some level above the ground and little or no lateral movement.

**Spray Drift Management**

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The distance of the outer most operating nozzles on the boom must not exceed 75% of wingspan or 90% of rotor diameter.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

The applicator should be familiar with and take into account the information covered in the following Aerial Drift Reduction Advisory. [This information is advisory in nature and does not supersede mandatory label requirements.]

**Aerial Drift Reduction Advisory**

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

**Controlling Droplet Size:**

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the air stream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

**Boom Length:** For some use patterns, reducing the effective boom length to less than 75% of the wingspan or 90% of rotor length may further reduce drift without reducing swath width.

**Application Height:** Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

**Swath Adjustment:** When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

**Wind:** Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

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

**Temperature Inversions:** Applications should not occur during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the 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.

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

## Mixing

### Mixing PowerFlex Alone

1. Fill the tank with 1/2 of the total amount of water.
2. Start agitation.
3. Add the required amount of PowerFlex.
4. Add the required amount of adjuvant (Refer to "Adjuvants" section).
5. Continue agitation while filling the spray tank to the required volume.
6. To ensure a uniform spray mixture, continuous agitation is required during application. If product is allowed to settle, thoroughly agitate to resuspend the mixture before spraying. Apply mixture immediately after it is prepared.

### PowerFlex Applied in Tank Mix Combination

If a broader spectrum of weed control is needed, PowerFlex may be tank mixed with labeled rates of other herbicides provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated; and (2) tank mixing is not prohibited by the label of the tank mix product.

### Tank Mixing Precautions:

- Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels.
- Do not mix with products containing dicamba or amine formulations of 2,4-D or MCPA as these products may reduce grass control provided by PowerFlex.
- Do not tank mix with organo-phosphate insecticides as these mixtures may result in unacceptable crop injury.
- Do not exceed recommended application rates for respective products or maximum allowable application rates for any active ingredient in the tank mix.
- Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

**Tank Mix Compatibility Testing:** A jar test is recommended prior to tank mixing to ensure compatibility of PowerFlex and other pesticides. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Vigorous, continuous agitation during mixing, filling and throughout application is required for all tank mixes. Sparger pipe agitators generally provide the most effective agitation in spray tanks. To prevent foaming in the spray tank, avoid stirring or splashing air into the spray mixture.

**Mixing Order for Tank Mixes:**

1. Fill the spray tank to 3/4 of the total spray volume required with water.
2. Start agitation.
3. Add PowerFlex and agitate for 2 to 3 minutes
4. After adding PowerFlex, add different formulation types in the following order: (1) dry flowables; (2) wettable powders; (3) aqueous suspensions, flowables and liquids. Maintain agitation and add: (4) emulsifiable concentrates; (5) solutions; and (6) adjuvants. Allow time for complete mixing and dispersion after each addition.
5. Finish filling the spray tank. Maintain continuous agitation during mixing and throughout application. If product is allowed to settle, thoroughly agitate to resuspend the mixture before spraying. Apply mixture immediately after it is prepared.

If application or agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be resuspended before spraying is resumed. A sparger agitator is particularly useful for this purpose. Settled material may be more difficult to resuspend than when originally mixed.

**Clean-Out Procedures for Spray Equipment**

1. Drain any remaining spray mixture from the application equipment.
2. Hose down the interior surfaces of the tank while filling the tank 1/2 full of water.
3. Add household ammonia at a rate of 1 gallon per 100 gallons of water. Recirculate for 5 minutes and spray out part of this mixture for 5 minutes through the boom. Drain tank.
4. Remove all spray nozzles and screens and clean separately.
5. If spray equipment will be used for pesticide application to crops sensitive to PowerFlex, steps 1-3 should be repeated. Exterior surfaces of spray equipment should also be thoroughly cleaned.

**Note:** Rinsate may be disposed of on site according to label use directions or at an approved waste disposal facility.

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**Weeds Controlled (C) or Suppressed (S) by PowerFlex**

Best results are obtained when grass weeds are treated at the 2-leaf to 2-tiller stage of growth and before broadleaf weeds are larger than 2 inches tall or 2 inches in diameter. Best control is achieved when applications are made to actively growing weeds. Control may be reduced when weeds are exposed to drought or extreme temperatures. PowerFlex will not control known ALS (Group 2) resistant biotypes of labeled weeds.

Common name	Scientific Name	Fall Application	Spring Application
<b>Grass</b>			
blackgrass	<i>Alopecurus myosuroides</i>	C	C
brome, downy	<i>Bromus tectorum</i>	C	S
brome, Japanese	<i>Bromus japonicus</i>	C	C
brome, ripgut	<i>Bromus rigidum</i>	C	C
canarygrass, hood	<i>Phalaris paradoxa</i>	C	C
canarygrass, littleseed	<i>Phalaris minor</i>	C	C
cheat	<i>Bromus secalinus</i>	C	C
foxtail barley	<i>Hordeum jubatum</i>	S	S
foxtail, green	<i>Setaria viridis</i>		S
foxtail, yellow	<i>Pennisetum glaucum</i>		C <sup>4</sup>
hairy chess	<i>Bromus commutatus</i>	C	C
quackgrass	<i>Elytrigia repens</i>	S	S
rescuegrass	<i>Bromus catharticus</i>	S	S
ryegrass, Italian	<i>Lolium multiflorum</i>	C	C
wild oat	<i>Avena fatua</i>	C	C
windgrass	<i>Apera spica-venti</i>	C	C
<b>Broadleaf</b>			
buckwheat, wild	<i>Polygonum convolvulus</i>		S
bushy wallflower <sup>1</sup>	<i>Erysimum repandum</i>	C	C
canola, volunteer (wild turnip) <sup>2</sup>	<i>Brassica rapa</i>	C	C
Carolina geranium	<i>Geranium carolinianum</i>	C	C
chickweed, common	<i>Stellaria media</i>	C	C
chickweed, mouseear	<i>Cerastium vulgatum</i>	C	C
catchweed bedstraw (cleavers)	<i>Galium aparine</i>	S	C
coast fiddleneck	<i>Amsinckia intermedia</i>	C	C
corn gromwell	<i>Lithospermum arvense</i>	C	C
cutleaf evening primrose	<i>Oenothera laciniata</i>	S	S
flixweed <sup>2</sup>	<i>Descurainia sophia</i>	C	C
hairy bittercress	<i>Cardamine hirsuta</i>	C	C
hairy vetch	<i>Vicia villosa</i>		C
hempnettle, common	<i>Galeopsis tetrahit</i>		C
henbit	<i>Lamium amplexicaule</i>	C	S
lambquarters, common	<i>Chenopodium album</i>		C <sup>3</sup>
mustard, black	<i>Brassica nigra</i>	C	C
mustard, blue <sup>1</sup>	<i>Chorispora tenella</i>	C	C
mustard, tumble <sup>1</sup>	<i>Sisymbrium altissimum</i>	C	C
mustard, wild	<i>Sinapis arvensis</i>	C	C
mustard, wormseed <sup>1</sup>	<i>Erysimum cheiranthoides</i>	C	C
pennycress, field <sup>2</sup>	<i>Thlaspi arvense</i>	C	C
pinnate tansymustard <sup>1</sup>	<i>Descurainia pinnata</i>	C	C
pigweed, redroot	<i>Amaranthus retroflexus</i>		C



plains coreopsis	<i>Coreopsis tinctoria</i>	S	S
shepherdspurse <sup>1</sup>	<i>Capsella bursa-pastoris</i>	C	C
small-flowered buttercup	<i>Ranunculus abortivus</i>	C	C
smallseed falseflax <sup>1</sup>	<i>Camelina microcarpa</i>	C	C
smartweed, annual	<i>Polygonum sp.</i>		C
spotted burclover	<i>Medicago arabica</i>	C	C
thistle, Russian	<i>Salsola iberica</i>		C <sup>3</sup>
white clover	<i>Trifolium repens</i>	C	C
Virginia pepperweed	<i>Lepidium virginicum</i>	C	C

<sup>1</sup>Control may be reduced when application is made after bolting

<sup>2</sup>Including herbicide-tolerant canola varieties except Clearfield (imidazolinone-tolerant) canola.

<sup>3</sup>Less than 2 inches tall. For control of lambsquarters over 2 inches tall, tank mix with 0.25 lb ae 2,4-D ester or MCPA ester. For control of Russian thistle over 2 inches tall, tank mix with 0.25 lb ae 2,4-D ester.

<sup>4</sup>One to four-leaf stage of growth.

**Resistance Management Recommendations**

PowerFlex is an ALS mode of action (Group 2) herbicide. Any weed population may contain or develop plants naturally resistant to this product and other ALS herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. PowerFlex will not control known ALS (Group 2) resistant biotypes of labeled weeds. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance management strategies should be followed.

To delay herbicide resistance:

- Where possible, rotate the use of PowerFlex or other ALS herbicides with different herbicide groups that control the same weeds in a field.
- For best resistance management stewardship, do not use more than once per season.
- Use tank mixtures with herbicides from a different group when such use is permitted.
- Herbicide use should be based on an IPM program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical), cultural, biological and other chemical control practices.
- Monitor treated weed populations for resistance development.
- Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment and planting clean seed.
- Contact your local extension specialist or certified crop advisers for any additional pesticide resistance management and/or integrated weed management recommendations for specific crops and weed biotypes.

**Application Directions**

**Application Timing**

Apply PowerFlex postemergence to the main flush of actively growing weeds according to the target weed stage shown in the above table. Extreme growing conditions such as drought, temperatures near or below freezing prior to, at, or following time of application may reduce weed control and increase the risk of crop injury at all stages of growth.

Warm, moist growing conditions promote active weed growth and enhance the activity of PowerFlex by allowing maximum foliar uptake and contact activity. Weeds hardened off by cold weather or drought stress may not be adequately controlled or suppressed and re-growth may occur. For best results, ensure thorough spray coverage of target weeds.

If foliage is wet at the time of application, control may be decreased. Applications of PowerFlex are rainfast within 4 hours after application.

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### **Spray Coverage**

Use sufficient spray volume to provide thorough coverage and a uniform spray pattern. Do not broadcast apply in less than 5 gallons of total spray volume per acre. For best results and to minimize spray drift, apply in a spray volume of 10 gallons or more per acre. As vegetative canopy and weed density increase, spray volume should be increased to obtain equivalent weed control. Use only nozzle types and spray equipment designed for herbicide application. To reduce spray drift, follow precautions under Avoiding Injurious Spray Drift.

### **Adjuvants**

When PowerFlex is applied alone, use one of the following surfactants or adjuvants:

- Non-ionic surfactant with at least 80% active ingredient at 0.25% to 0.50% v/v (1 to 2 qt per 100 gal. spray solution); for best results under dry or low humidity environments a rate of 0.50% v/v is recommended. Addition of spray quality urea ammonium nitrogen fertilizer (28-0-0 to 32-0-0 at 1-2 qt/acre) or ammonium sulfate fertilizer (21-0-0-24 at 1.5 – 3 lbs/acre) may be added to non-ionic surfactant to enhance control.
- Crop oil concentrate adjuvant at 1.0 to 1.25% v/v (1 to 1.25 gal. per 100 gal. spray solution)
- Methylated seed oil adjuvant at 1.0% v/v (1 gal. per 100 gal. spray solution).

Potential for crop response is increased with the use of oil adjuvants versus non-ionic surfactants. Do not use oil adjuvants with spray solutions containing nitrogen fertilizer.

Do not use additives that lower the spray solution below a pH of 6.0.

Dow AgroSciences recommends the use of a CPDA certified surfactant or adjuvant when used with PowerFlex.

### **Application in Fluid Fertilizer**

PowerFlex may be applied in spray solutions containing liquid nitrogen. The spray solution should not be composed of more than 50% liquid nitrogen and should not exceed 30 pounds of actual nitrogen per acre. When PowerFlex is applied in spray solutions containing liquid nitrogen, use a non-ionic surfactant at a maximum of 0.25% v/v, instead of crop oil concentrate or methylated seed oil. Temporary crop injury may result when liquid nitrogen is used as the spray carrier. Foliar applied liquid nitrogen may cause foliar leaf burn, yellowing or reduced growth due to the activity of the liquid fertilizer on the crop.

### **Winter wheat**

Apply 3.5 oz of PowerFlex per acre in either fall or spring to actively growing winter wheat from the 3-leaf to jointing stage (Zadoks scale 31) according to the application timings shown in the table entitled "Weeds Controlled (C) or Suppressed (S) by PowerFlex" (above). Treat after the majority of weeds have emerged. Best results are obtained when application is made to weeds that are actively growing.

Occasionally slight yellowing or height reduction may be observed in the treated crop. These transient symptoms disappear within 14 days with no reduction to yield. Do not apply to crops suffering from drought, water-logged soils, nutrient deficiency or exposed to frost or other agronomic factors affecting plant growth. Do not use on wheat varieties that are sensitive to ALS herbicides.

**An independent liquid ammonium nitrogen fertilizer application made 7 days before or after a PowerFlex application may result in transient leaf burn or stunting. Do not make a liquid fertilizer application during this period unless the risk of crop response is acceptable.**

### **Tank Mixtures:**

PowerFlex may be applied in tank mix combination with labeled rates of other products registered for postemergence application in winter wheat. See Tank Mixing Precautions under Mixing. When tank

mixing, do not exceed recommended application rates and use only in accordance with the most restrictive precautions and limitations on the respective product labels.

**Crop Specific Use Restrictions:**

- Do not apply more than 3.5 oz of PowerFlex per acre per growing season.
- Do not graze the treated crop within 7 days following application.
- Do not cut the treated crop for hay within 28 days following application.
- **Preharvest Interval:** Do not harvest the treated crop within 60 days after application.

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