63588-92

6/20/2014

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

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

Ms. Lisa Ayn Setliff
K-I Chemical U.S.A, Inc.
c/o Landis International, Inc.
P.O. Box 5126
Valdosta, GA 31603-5126

JUN 20 2014

Subject: R350 label amendment to remove restrictions for use of adjuvant in corn applications; associated with R292 tolerance amendment to corn, field, forage and corn, field, grain (petition #3F8196)
Product Name: Pyroxasulfone 85WG
Decision Number (EPA Reg. No.): 464409 (tech. 63588-91); 464410 (end-use 63588-92); and 482174 (petition #3F8196)

Dear Ms. Setliff:

The labeling referred to above, submitted in connection with registration in accordance with FIFRA section 3(C)(5), as amended, is acceptable, provided that you submit and/or cite all data required for reregistration/registration review of your product under FIFRA when the Agency requires all registrants of similar products to submit such data.

NOTE: 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.

Continued on page 2

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. The next label printing of this product must use this labeling unless subsequent changes have been approved. You must submit one (1) 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. If you have questions or concerns regarding this letter, please contact Beth Benbow at (703) 347-8072 or email at benbow.bethany@epa.gov.

Sincerely,

Kathryn V. Montague

Kathryn V. Montague
Product Manager 23
Herbicide Branch
Registration Division (7505P)

Pyroxasulfone 85 WG Herbicide

Group 15 Herbicide

For weed control in corn, cotton, soybeans and wheat

Active Ingredient:
Pyroxasulfone: 3-[[[5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1*H*-pyrazol-4-yl]methyl]sulfonyl]-4,5-dihydro-5,5-dimethylisoxazole 85.00%
Other Ingredients:.....15.00%
Total:.....100.00%

Contains 0.85 pound of pyroxasulfone per pound formulated as a water-dispersible granule (WG)
CAS No. 447399-55-5

EPA Reg. No.: 63588-92 EPA Establishment No.:

KEEP OUT OF REACH OF CHILDREN

CAUTION/PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See inside for complete **First Aid, Precautionary Statements, Directions For Use, Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).

Net Contents: 5 Pounds

ACCEPTED
JUN 20 2014
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 63588-92

FIRST AID	
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.
If Inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. For emergency information on, call the National Pesticides Information Center at 1-800-858-7378 6:30 AM to 4:30 PM PACIFIC TIME (PT), seven days a week. During other times, call the poison control center 1-800-424-9300	

See back panel for additional precautionary statements and directions for use.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION. Harmful if absorbed through skin. Harmful if swallowed. Avoid contact with skin, eyes or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

When handlers use closed systems or enclosed cabs that meet the requirements listed in the Worker Protection Standards (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.

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are listed below. For more options, refer to category A on an EPA chemical-resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material such as barrier laminate, butyl rubber ≥14 mils, nitrile rubber ≥14 mils, neoprene rubber ≥14 mils, natural rubber ≥14 mils, polyethylene, polyvinyl chloride ≥14 mils, or viton ≥14 mils.
- Shoes plus socks.

For aerial application, mixers and loaders must also wear a PF5 respirator.

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

clothing before reuse. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. **DO NOT** reuse them.

User Safety Recommendations

Users should:

- Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- 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

Do not apply directly to water, 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.

Do not discharge effluent containing this product 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 to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

Ground Water Advisory: This chemical has 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.

The product may impact surface water quality 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 a high potential for reaching surface water via runoff for several months or more after application. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce potential loading of pyroxasulfone and its degradation product, [5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl]methanesulfonic 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 have sufficient capacity to contain all product spills, equipment or container leaks, equipment washwaters and rainwater that may fall on the pad. The containment capacity does not apply to vehicles delivering pesticide shipments to the mixing/loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.

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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.

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DIRECTIONS FOR USE

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

READ ENTIRE LABEL, USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

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 directions and precautions on this label may result in crop injury, poor weed control, and/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, greenhouses and handlers of agricultural insecticides. 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 made of any waterproof material such as barrier laminate, butyl rubber ≥14 mils, nitrile rubber ≥14 mils, neoprene rubber ≥14 mils, natural rubber ≥14 mils, polyethylene, polyvinyl chloride ≥14 mils, or viton ≥14 mils.
- Shoes plus socks

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

Pesticide Storage:. **DO NOT** use or store near heat or open flame. Store in original container only, in cool, dry, and well-ventilated area, separately from fertilizer, feed, or foodstuffs and away from other pesticides. **DO NOT** store this product under wet conditions. Avoid cross-contamination with other pesticides.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of federal law. If these wastes cannot be disposed of according to label instructions, contact the state agency responsible for pesticide regulation or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Handling
Nonrefillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake (capacity ≤ 50 pounds) 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

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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 mix tank and continue to drain for 10 seconds after the flow begins to drip. 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.

In Case of Emergency

In case of large-scale spillage regarding this product, call:

- CHEMTREC 1-800-424-9300
- 1-800-832-HELP (4357)

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- 1-800-832-HELP (4357)

Steps to be taken in case material is released or spilled:

- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing and wash affected skin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

PRODUCT INFORMATION

Pyroxasulfone 85 WG is a selective rate-dependent preemergence herbicide for control of annual grassweeds, sedges and annual broadleaf weeds, including biotypes resistant to ACCase inhibitors, ALS inhibitors and glyphosate, that infest corn, cotton, and soybean listed in **Table 1** and wheat listed in **Table 2**. Refer to **Crop-specific Information** section for recommendations on herbicide tank mixtures or sequential programs.

Periods of dry weather following applications of **Pyroxasulfone 85 WG** may reduce herbicidal effectiveness. **Pyroxasulfone 85WG** must be applied and be activated by at least ½ inch of rainfall or irrigation prior to weed germination and emergence. When **Pyroxasulfone 85 WG** is not activated and weeds emerge, a labeled postemergence herbicide or shallow cultivation may be needed to control weed escapes.

Table 1. Weeds Controlled with a Residual Application of Pyroxasulfone 85 WG in Corn, Cotton and Soybean

Common Name	Genus and Species Name
ANNUAL GRASSES	
Barley, hare	*Hordeum murinum ssp. leporinum*
Barnyardgrass	*Echinochloa crus-galli*
Brome, downy[1]	*Bromus tectorum*
Brome, Japanese[1]	*Bromus japonicus*
Bluegrass, annual	*Poa annua*
Canarygrass	*Phalaris canariensis*
Cheat[1]	*Bromus secalinus*
Crabgrass, smooth	*Digitaria ischaemum*
Crabgrass, large	*Digitaria sanguinalis*
Crowfoot grass	*Dactyloctenium aegyptium*
Cupgrass, southwestern	*Eriochloa gracilis*
Cupgrass, woolly[1]	*Eriochloa villosa*
Foxtail, giant	*Setaria faberi*
Foxtail, green	*Setaria viridis*
Foxtail, yellow	*Setaria glauca*
Goosegrass	*Eleusine indica*
Johnsongrass (seedling)	*Sorghum halepense*
Millet, wild proso[1]	*Panicum miliaceum*
Oat, Wild[1]	*Avena fatua*
Panicum, fall	*Panicum dichotomiflorum*
Panicum, Texas[1]	*Panicum texanum*
Red Rice	*Oryza sativa*
Ryegrass, Italian	*Lolium multiflorum*
Ryegrass, rigid	*Lolium rigidum*
Sandbur, longspine[1]	*Cenchrus longispinus*
Shattercane[1]	*Sorghum vulgare*
Signalgrass, broadleaf	*Brachiaria platyphylla*
SEDGES	
Nutsedge, yellow[1]	*Cyperus esculentus*
ANNUAL BROADLEAF WEEDS	
Amaranth, Palmer	*Amaranthus palmeri*
Amaranth, Powell	*Amaranthus powellii*
Buckwheat, wild[1]	*Polygonum convolvulus*
Carpetweed	*Mollugo verticillata*
Chickweed, common[1]	*Stelleria media*
Fleabane, hairy[1]	*Conyza bonariensis*
Groundsel, common[1]	*Senecio vulgaris*
Henbit[1]	*Lamium amplexicaule*
Horseweed (marestail)[1]	*Conyza canadensis*
Jimsonweed[1]	*Datura stramonium*
Kochia[1]	*Kochia scoparia*
Lambsquarters, common[1]	*Chenopodium album*

Common Name	Genus and Species Name
Morningglory, entireleaf[1]	*Ipomoea hederacea*
Morningglory, pitted[1]	*Ipomoea lacunosa*
Nightshade, black	*Solanum sarrachoides*
Nightshade, Eastern black	*Solanum ptychanthum*
Pigweed	*Amaranthus spp.*
Pigweed, redroot	*Amaranthus retroflexus*
Pigweed, smooth	*Amaranthus hybridus*
Pigweed, tumble	*Amaranthus albus*
Purslane, common	*Portulaca oleracea*
Pusley, Florida	*Richardia scabra*
Ragweed, common[1]	*Ambrosia artemisiifolia*
Shepherdspurse[1]	*Capsella bursa-pastoris*
Sida, prickly (teaweed)	*Sida spinosa*
Velvetleaf[1]	*Abutilon theophrasti*
Waterhemp,	*Amaranthus tuberculatus*

[1] Partial control or suppression only. **Pyroxasulfone 85 WG** should be used in tank mixes or sequential applications with other labeled herbicides that provide additional control of noted weeds.

Table 2. Weeds Controlled[1] or Suppressed[2] with a Residual Application of Pyroxasulfone 85 WG herbicide in Wheat.

Common Name	Genus and Species Name	**C** = controlled only at the maximum application rate per soil texture. **S** = suppression (See **Crop-specific Information** section for specific rates)
Annual Grass Weeds		
Barley, hare	*Hordeum murinum* spp. *leporinum*	S
Barnyardgrass	*Echinochloa crus-galli*	S
Bluegrass, annual	*Poa annua*	C
Brome, downy	*Bromus tectorum*	S
Brome, Japanese	*Bromus japonicus*	S
Canarygrass	*Phalaris canariensis*	C
Cheat	*Bromus secalinus*	S
Foxtail, giant	*Setaria faberi*	S
Foxtail, green	*Setaria viridis*	S
Foxtail, yellow	*Setaria pumila*	S
Oats, wild	*Avena fatua*	S
Ryegrass, Italian	*Lolium perenne* spp. *multiflorum*	C

Ryegrass, rigid	*Lolium rigidum*	S
Annual Broadleaf Weeds		
Buckwheat, wild	*Polygonum convolvulus*	S
Carpetweed	*Mollugo verticillata*	S
Chickweed, common	*Stelleria media*	S
Flixweed		S
Horseweed (marestail)	*Conyza canadensis*	S
Groundsel, common	*Senecio vulgaris*	S
Henbit	*Lamium amplexicaule*	S
Kochia	*Kochia scoparia*	S
Lambsquarters, common	*Chenopodium album*	S
Mustard, wild		S
Pigweed spp.	*Amaranthus* spp.	S
Ragweed, common	*Ambrosia artemisiifolia*	S
Shepherdspurse	*Capsella bursa-pastoris*	S

[1] Weeds such as annual bluegrass and Italian ryegrass have the ability to adapt to several different herbicide sites of action. Even though **Pyroxasulfone 85 WG** will control these species, some weed escapes are possible. Multiple herbicides with multiple different effective sites of action **MUST** be used in tank mixtures **or** sequentially to limit these weed escapes to prevent or delay the onset of herbicide resistant weed biotypes.
[2] For control of these weeds, a tank mix partner or a sequentially applied herbicide partner is needed.

Mode of Action

Pyroxasulfone 85WG acts to inhibit very long chain fatty acid synthesis as a **Group 15 (WSSA)/Group K_3 (HRAC).** herbicide. It is a root and shoot growth inhibitor that controls susceptible germinating seedlings before or soon after they emerge from the soil.

Resistance Management

Pyroxasulfone 85 WG is a **Group 15/Group K_3** herbicide. Any weed population may contain or develop plants naturally resistant to **Pyroxasulfone 85 WG** and other **Group 15** herbicides. Weed species with resistance to **Group 15** may eventually dominate the weed population if **Group 15** herbicides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by **Pyroxasulfone 85 WG** or other **Group 15** herbicides.

To delay herbicide resistance consider:

- Avoiding the consecutive use of **Pyroxasulfone 85 WG** or other target site of action Group 15 herbicides that have a similar target site of action, on the same weed species.
- Using tank-mixtures or premixes with herbicides from different target site of action Groups as long as the involved products are all registered for the same use, have different sites of action, and are both effective at the

tank mix or prepack rate on the weed(s) of concern.

- Basing herbicide use on a comprehensive IPM (Integrated Pest Management) program including cultural and mechanical methods.
- Monitoring treated weed populations for loss of field efficacy, and control of escapes with effective alternative herbicides or mechanical methods.
- Contacting your local extension specialist, certified crop advisors, and/or manufacturer for herbicide resistance management and/or integrated weed management recommendations for specific crops and resistant weed biotypes.

Crop Tolerance

Crops are tolerant to **Pyroxasulfone 85 WG** when applied according to label directions and under normal environmental conditions. Applications to crops under stress because of inadequate or excess of moisture for normal crop development, cool and hot temperatures, sodic soils, poorly drained soils, hail damage, flooding, pesticide injury, mechanical injury or widely fluctuating temperatures may result in crop injury.

APPLICATION INSTRUCTIONS

Application rates of **Pyroxasulfone 85 WG** may vary depending on soil texture. Refer to **Table 3** for soil texture groups used in this label, unless a specific soil texture is mentioned. When use rates are in ranges, apply the lower rate for soils with coarser texture or lower organic matter, and apply the higher rates for finer soil textures, higher organic matter, heavy soil surface plant residue or heavy weed pressure.

Table 3. Soil Texture Groups

Coarse	Medium	Fine
Sand	Loam	Sandy clay
Loamy sand	Silt loam	Silty clay loam
Sandy loam	Silt	Silty clay
	Sandy clay loam	Clay loam
		Clay

DO NOT use on peat or muck soils or mineral soils with 10% or more organic matter content unless described within the **Crop-specific Information** section for a particular crop.

Refer to the **Crop-specific Information** section for specific application rates, timings, and the restrictions and limitations by crop and use pattern.

APPLICATION TIMINGS

Pyroxasulfone 85 WG may be applied preplant surface, preplant incorporated, preemergence, early postemergence, postemergence layby, or in the fall.

Preplant Surface Applications: Apply **Pyroxasulfone 85 WG** alone, or in tank mixes, up to 45 days before planting. If weeds are present at the time of application, use of additional weed control methods such as tank mixes with an appropriate postemergence herbicide(s) to control emerged weeds.

Preplant Incorporated (PPI) Applications: Incorporate **Pyroxasulfone 85 WG** 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.

Preemergence Surface Applications: After planting and before crop emergence, apply a uniform broadcast treatment to the soil surface. If weeds are present, apply the **Pyroxasulfone 85 WG** in tank mixture with an appropriate postemergence herbicide such as a glyphosate containing product.

Early Postemergence Applications: Pyroxasulfone 85 WG must be applied and activated prior to weed seedling emergence or in a tank mixture that controls the emerged weeds. Refer **to Crop-Specific Information** for postemergence application instructions by crop.

Postemergence Layby Applications. Pyroxasulfone 85 WG must be applied as a directed spray between crop rows and activated before weed seedling emergence or in a tank mixture that controls emerged weeds. Refer to **Crop-specific Information** for postemergence layby application instructions by crop.

Fall Applications for controlling weeds germinating the following spring: Pyroxasulfone 85 WG 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. Fall applications must be made after October 1. **DO NOT** apply to frozen or snow covered soil. Tillage operations may be conducted before or after applying **Pyroxasulfone 85 WG**. If tillage is used following an application, tillage should be shallow and no more than 2-inches to uniformly incorporate the herbicide into the upper soil surface. Refer **to Crop-Specific Information** for fall application instructions by crop as some state and/or geographic restrictions may occur.

Fall / Winter Applications for controlling weeds germinating in the fall or winter weeds: Pyroxasulfone 85 WG may be broadcast surface applied in the fall or winter after crop harvest. **DO NOT** apply to frozen or snow covered soil. Tillage operations may be conducted before or after applying **Pyroxasulfone 85 WG**. If tillage is used following an application, tillage should be shallow and no more than 2-inches deep to uniformly incorporate the herbicide into the upper soil surface.

APPLICATION METHODS AND EQUIPMENT

Pyroxasulfone 85 WG may be applied by aerial or ground application. **DO NOT** apply through any type of irrigation system.

Thorough spray coverage is required for optimum weed control and can be improved with proper nozzle and spray volume selection. Use and configure application equipment to provide an adequate spray volume, an accurate and uniform distribution of spray droplets over the treated area, and to avoid spray drift to nontarget areas. Equipment should be adjusted to maintain continuous agitation during spraying with good mechanical or bypass agitation. Avoid overlaps that will increase rates above the use rates specified in this label.

Pyroxasulfone 85 WG may be applied using water or sprayable fluid nitrogen fertilizer solutions as the spray carrier. **DO NOT** apply this product without dilution in a spray carrier. Additionally, **Pyroxasulfone 85 WG** may be impregnated on and applied with dry bulk fertilizer.

Spray Mix Preparation Advisory:

Always pre-dissolve **Pyroxasulfone 85 WG** before adding it into the spray tank. When dissolving **Pyroxasulfone 85 WG** for a spray mix, use a minimum of 4 gallons water per container of **Pyroxasulfone 85 WG** (40 ounces) in the induction system with constant agitation. **DO NOT** pour **Pyroxasulfone 85 WG** straight into the inductor system without minimum water and agitation.

Aerial Application Requirements

Spray Carrier Volume. Use 3 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

The following measures must be followed to reduce the potential of spray drift to nontarget areas from aerial applications:

1. The distance of the outermost nozzles on the boom must not exceed ¾-the length of the wingspan or 90% of rotor blade diameter.
2. Use low-drift nozzles such as straight-stream nozzles (D-4 or larger). **DO NOT** use nozzles producing a mist droplet spray.
3. Nozzles must always point backward parallel with the airstream and never be pointed downward more than 45 degrees.
4. Without compromising aircraft safety, application should be made at a height of 10 feet or less above the crop canopy or tallest plants. Applicators must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.
5. **DO NOT** apply during periods of temperature inversions or stable atmospheric conditions.

Avoid potential adverse effects to nontarget areas by maintaining a 30-feet buffer between the application area and the **closest downwind edge** of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas, shrub lands, and crop lands).

Ground Application Requirements

Spray Carrier Volume. Use 5 or more gallons of water per treated acre or 20 or more gallons of sprayable fluid nitrogen fertilizer per treated acre for weed control applications.

The following measures must be followed to reduce the potential of spray drift to nontarget areas from ground applications:

1. Apply this product using nozzles which deliver **medium to ultra coarse spray droplets** as defined by ASABE standard S-572.1 and as shown in nozzle manufacturer's catalogs. Flood-jet or Air Induction type nozzles are recommended for residual soil surface applications. Nozzles that deliver coarse spray droplets may be used to reduce spray drift provided spray volume per acre (GPA) is increased to maintain coverage of target (i.e. soil surface). **DO NOT** use nozzles that produce fine (e.g. cone) spray droplets.
2. Apply this product only when the potential for drift to adjacent nontarget areas is minimal (e.g. when the wind is **10 MPH or less and is blowing away** from sensitive areas). **DO NOT** apply during periods of temperature inversions or stable atmospheric conditions.
3. Avoid potential adverse effects to nontarget areas by maintaining a 10-foot buffer between the application area and the **closest downwind edge** of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas, shrub lands, and crop lands).

Boom length: For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Ground Boom Application Height: Applications should not be made at a height greater than 4 feet above the top of the largest plants. Making applications at the lowest possible height reduces exposure of droplets to evaporation and wind.

Ground Application (Dry Bulk Fertilizer)

Pyroxasulfone 85 WG may be impregnated or coated onto dry bulk granular fertilizer carriers for residual soil surface (fall, preplant surface, preplant incorporated) applications. Impregnation or coating may be conducted by either in-plant bulk or on-board systems. Perform the mixing operation in well-ventilated areas.

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

Pyroxasulfone 85 WG may be impregnated on many commonly used dry fertilizers but **DO NOT** impregnate on ammonium nitrate, fertilizers containing ammonium nitrate, potassium nitrate, sodium nitrate or powdered limestone.

Generally, fertilizer application rates of at least 200 lbs to 700 lbs per acre of herbicide and fertilizer blend will provide adequate distribution or coverage of **Pyroxasulfone 85 WG** across the soil surface. Application of impregnated fertilizer must be made uniformly to the soil to prevent possible crop injury and offer satisfactory weed control. Impregnated fertilizer spread at half rate and overlapped to obtain a full rate will offer a more uniform

distribution. A shallow (< 2 inches) incorporation is desirable for improved weed control. Deeper incorporation will dilute the herbicide layer near the soil surface and may result in unsatisfactory weed control.

Use the following formula to calculate the herbicide rate when using dry bulk fertilizer applications:

[oz. of **Pyroxasulfone 85 WG** per acre X 2000] / Pounds fertilizer per acre = oz. of **Pyroxasulfone 85 WG** for 1 ton of fertilizer

To impregnate **Pyroxasulfone 85 WG** on bulk fertilizer, use a closed rotary-drum mixer or other commonly used dry bulk fertilizer blender equipped with suitable spray equipment. Mix **Pyroxasulfone 85 WG** with sufficient water to form a sprayable slurry mixture. Spray nozzles must 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. Addition of a suitable drying agent may be necessary if the fertilizer and herbicide blend is too wet for uniform application due to high humidity, high urea concentration, or low fertilizer use rate. Slowly add the drying agent to the blend until a flowable mixture is obtained. Drying agents are not recommended for use with on-board impregnation systems.

Under some conditions, fertilizer impregnated with **Pyroxasulfone 85 WG** may clog air tubes or deflector plates on pneumatic application systems. Mineral oil may be added to **Pyroxasulfone 85 WG** before blending with fertilizer to reduce plugging. **DO NOT** use drying agents when mineral oil is used. To avoid separation of **Pyroxasulfone 85 WG** and mineral oil mixes in cold temperatures, either keep mixture heated or agitated prior to blending with fertilizer. Mineral oil may be used with inplant blending stations or with on-board injection systems.

Uniformly apply the treated fertilizer with accurately calibrated and proper equipment immediately after impregnation to avoid lump formation and spreading difficulties.

Accurate calibration of fertilizer application equipment and uniform fertilizer distribution is essential for satisfactory weed control.

Cleaning Spray Equipment

Clean application equipment thoroughly by using a strong detergent or commercial sprayer cleaner according to the manufacturer's directions. Triple rinse the equipment before and after applying **Pyroxasulfone 85 WG**.

Spray Drift Management

The interaction of many equipment and weather related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all factors involved in minimizing drift potential.

Droplet Size

The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Use nozzle types and nozzle arrangements that will provide maximum coverage and minimize the potential for off target movement of spray particles. Droplet size for both ground and air applications must be in the "medium" size category as defined in the August 1999 ASAE S572 publication entitled, "Spray Nozzle Classification by Drop Spectra". Refer to that publication for additional information. Regardless of droplet size, if applications are made improperly or under unfavorable environmental conditions off target movement will occur. (see Wind, Temperature and Humidity, and Temperature Inversion sections in this label).

Controlling Droplet Size

Volume: Use high flow rate nozzles that produce medium droplets to apply the highest practical spray volume.
Pressure: Use the lower spray pressures recommended for the nozzle and do not exceed the manufacturer's recommended pressure. Higher pressure reduces droplet size and does not improve canopy penetration. 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 backwards parallel to the air-stream will produce larger droplets than other orientations. Significant deflection from the horizontal will reduce droplet size and increase drift potential.

Nozzle type: Use a nozzle type that is designed for the intended application. Do not use air inducting or flood type nozzles.

Swath Adjustment
When applications are made with a cross wind, 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
Variable wind speeds with changing directions may pose the largest potential for drift damage if crops other than rice are adjacent to the field to be sprayed. Drift potential is lowest between wind speeds of 2 to 8 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application must be avoided if wind speed is 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 drift.

Temperature and Humidity
When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation, but they still should remain within the medium droplet size category. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions
Do not spray at times when spray particles may be entrained into a temperature inversion layer. If inversion conditions are suspected, consult with local weather services before making an application. Applications must not occur during 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 smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a connected cloud (under low wind conditions) indicates an inversion, while smoke that moves upwards and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas
The pesticide must 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 (*i.e.*, when wind is blowing away from the sensitive areas).

ADDITIVES

Pyroxasulfone 85 WG has been formulated to provide optimal preemergence weed control. However, several tank mixes with **Pyroxasulfone 85 WG** may require adjuvants to improve burndown of emerged weeds. Therefore, adjuvant may be used with **Pyroxasulfone 85 WG** tank mixes that are applied fall, preplant, preemergence, or early postemergence to corn, soybeans, applications to wheat, and applications to cotton. Follow the adjuvant recommendation for the tank mix partner of **Pyroxasulfone 85 WG.**

TANK MIXING INFORMATION

Pyroxasulfone 85 WG can be mixed with one or more registered herbicide products according to the specific tank mixing instructions in this label and respective product labels. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Always follow the most restrictive label use directions. Refer to **Crop-specific Information** section for tank mixing details for each crop.

Physical incompatibility, reduced weed control, or crop injury may result from mixing **Pyroxasulfone 85 WG** with other pesticides, additives, or fertilizers.

Compatibility Test for Tank Mix Products

Before mixing components, always perform a compatibility jar test.

1. For 20 gallons per acre spray volume, use 3.3 cups (800 ml) of water. For other spray volumes, adjust rates accordingly. Only use water from the intended source at the source temperature.
2. Add components in the sequence indicated in the mixing order using 2 teaspoons for each pound or 1 teaspoon for each pint of label rate per acre.
3. Always cap the jar and invert 10 cycles between component additions.
4. When the components have all been added to the jar, let the solution stand for 15 minutes.
5. Evaluate the solution for uniformity and stability. The spray solution should not have free oil on the surface, or fine particles that precipitate to the bottom, or thick (clabbered) texture. If the spray solution is not compatible, repeat the compatibility test with the addition of a suitable compatibility agent. If the solution is then compatible, use the compatibility agent as directed on its label. If the solution is still incompatible, **DO NOT** mix the ingredients in the same tank.

Mixing Order

1. **Water** - Fill tank 1/2 to 3/4 full with clean water and start agitation.
2. **Agitation** - Maintain agitation throughout mixing.
3. **Inductor** - If an inductor is used, rinse it thoroughly after each component has been added.
4. **Products in PVA bags** - Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
5. **Water-soluble additives** (including dry and liquid fertilizers such as ammonium sulfate or urea ammonium nitrate).
6. **Water-dispersible products** (such as dry flowables, wettable powders, suspension concentrates, or suspoemulsions). Add **Pyroxasulfone 85 WG** at this point in the mixing process.
7. **Water-soluble products**
8. **Emulsifiable concentrates** (including methylated seed oil adjuvants)
9. **Remaining quantity of water**

Maintain agitation throughout application until spraying is completed. If the spray mixture is allowed to settle for any period of time, thorough agitation is essential to resuspend the mixture before spraying is resumed. Continue agitation while spraying.

USE RESTRICTIONS AND PRECAUTIONS

- **Maximum seasonal use rate:** Refer to **Crop-specific Information** section for maximum cropping seasonal application use rates of **Pyroxasulfone 85 WG** in each crop and use pattern. A cropping season is defined as the period following harvest of the preceding crop through the harvest of the planned or current crop.
- **Application: DO NOT** apply through any type of irrigation system.
- **DO NOT** contaminate irrigation ditches or water used for domestic purposes.
- **Irrigation: DO NOT** use flood irrigation to apply, activate or incorporate **Pyroxasulfone 85 WG.**
- See crop-specific information for additional corn and soybean restrictions
- **Emergency Replanting Intervals:** If a labeled crop treated with **Pyroxasulfone 85 WG** is lost to crop failure (because of environmental factors such as drought, frost, hail, etc.), the crop may be replanted immediately. However, **DO NOT** repeat application of **Pyroxasulfone 85 WG** after crop failure. A sequential application can be made as long as the maximum cumulative rate for the crop and soil type per season is not exceeded.
- ***Crop Rotation Intervals:*** *Use the table following to determine the proper interval between* **Pyroxasulfone 85 WG** application and the planting of rotational crops. Be sure to determine the rotational crop interval for tank mix products and utilize the most restrictive interval of all products applied.

Crop	**Pyroxasulfone 85 WG Use Rate** (oz/A)			
	1.0	2.0	3.0	4.0
	Rotational Crop Interval (months after application)			
Alfalfa	10	10	10	10
Canola (rapeseed)	12	12	15	18
Corn	0	0	0	0
Cotton	0	2	4	4
Edible Peas, succulent edible beans and other edible beans	11	11	11	11
Grain sorghum	6	6	10	12
Grasses grown for seed	18	18	18	18
Lentils	6	6	6	8
Peanut	4	4	4	4
Peas, field (dry)	4	6	6	8
Potato	4	4	4	4
Rice	10	12	18	24
Small grains (other than wheat)	11	11	11	18
Soybean	0	0	0	4
Sugarbeet	12	12	15	15

Sunflower	4	4	4	4
Wheat	0	1	4	6
Other Crops	18	18	18	18

CROP-SPECIFIC INFORMATION

Read product information, mixing, application, weeds controlled and additive instructions in preceding sections of the label. Read and follow tank mix product labels for restrictions, precautions, instructions, and rotational crop restrictions.

Corn

Pyroxasulfone 85 WG may be applied preplant surface, preplant incorporated, preemergence or early postemergence to corn for residual preemergence control of listed weeds (**Table 1**). Corn in this label refers to field corn (grown for grain, seed, or silage), popcorn, and sweet corn (grown for fresh, processing or seed). Before applying to seed corn, sweet corn or popcorn, verify with your local seed company (supplier) the selectivity of **Pyroxasulfone 85 WG** on your inbred line or hybrid to avoid potential injury.

Application Rates

Pyroxasulfone 85 WG can be applied as part of a one-pass or planned sequential (two-pass) weed control program. A one-pass weed control program should be used where no cultivation or postemergence herbicide application is anticipated. One-pass application rates for **Pyroxasulfone 85 WG** when applied alone, in tank mix, or sequentially are provided in **Table 4** for corn. See RESTRICTIONS AND PRECAUTIONS for maximum seasonal use rates and other application restrictions.

Table 4. Residual Rates of Pyroxasulfone 85 WG in Corn

Application Timing	Use Rate (oz/A) by Soil Texture[1]		
	Coarse	Medium	Fine
Preplant Surface	1.5 – 2.75	2.0 – 3.0	2.5 – 4.0
Preplant Incorporated	1.5 – 2.75	2.0 – 3.0	2.5 – 4.0
Preemergence	1.5 – 2.75	2.0 – 3.0	2.5 – 4.0
Early Postemergence	1.0 – 2.75	1.5 - 3.0	2.0 – 4.0

[1] Refer to **Table 3** for definitions of soil texture groups.

Pyroxasulfone 85 WG use rates applied as the residual component of a planned sequential (two-pass) program (see **Table 5**) will provide control or suppression of listed weeds (**Table 1**) through early to mid season. For full season weed control, apply a labeled postemergence treatment such as **Status herbicide** + glyphosate (in glyphosate tolerant field corn) as the sequential component.

Table 5. Residual Rates of Pyroxasulfone 85 WG in a Planned Sequential Program in Corn

Application Timing	Use Rate (oz/A) by Soil Texture[1]		
	Coarse	Medium	Fine
Preplant Surface	1.0 – 2.0	1.5 – 3.0	2.0 – 4.0
Preplant Incorporated	1.0 – 2.0	1.5 – 3.0	2.0 – 4.0
Preemergence	1.0 – 2.0	1.5 – 3.0	2.0 – 4.0

[1] Refer to **Table 3** for definitions of soil texture groups.

Corn Restrictions

- **On coarse soils - DO NOT** apply more than a maximum cumulative amount of 2.75 ozs/A of **Pyroxasulfone 85 WG** (0.146 lb ai/A of pyroxasulfone) per cropping season.

- **On medium to fine textured soils - DO NOT** apply more than a maximum cumulative amount of 5.0 ozs/A of **Pyroxasulfone 85 WG** (0.266 lb ai/A of pyroxasulfone) per cropping season.
- **Seeding Depth:** Crop seeds must be planted a minimum 1 inch deep.**DO NOT** harvest sweet corn ears for human consumption less than 37 days after application of **Pyroxasulfone 85 WG**.

Application Timings

Pyroxasulfone 85 WG may be applied in a single application or in sequential applications.

Fall Applications for controlling weeds germinating the following spring

For use only in Iowa, Minnesota, North Dakota, South Dakota, Wisconsin , north of highway 136 in Illinois and north of highway 91 in Nebraska. Pyroxasulfone 85 WG may be applied in the fall to control weeds in conventional, minimum tillage, or no-till corn production systems planted the following spring. This fall application program will typically need to be followed with a suitable in-season postemergence herbicide treatment to provide season long control of the complete target weed spectrum. Use only on medium or fine soils and at a use rate of 2.5 to 3.5 ounces (medium soil) and 3.5 to 4.0 ounces (fine soil) of **Pyroxasulfone 85 WG** per acre. See the main **Application Timings** section (within APPLICATION INSTRUCTIONS) of this label for restrictions and recommendations.

Fall / Winter Applications for controlling weeds germinating in the fall or winter annual weeds

Pyroxasulfone 85 WG may be broadcast surface applied in the fall or winter to control winter annual weeds and other weeds germinating in the fall. Use on coarse, medium or fine soils at rates listed for the Preplant Surface timing. A sequential preemergence or postemergence application can be made but do not exceed the maximum cumulative rate allowed by soil type per season. See the main **Application Timings** section of this label for restrictions and recommendations.

Preplant Surface Application (15 to 45 days prior to planting)

Application rates in **Table 4** should be used when making preplant surface applications, using the highest application rate for a given soil texture. Preplant surface applications are not recommended on coarse soils, in areas where average annual rainfall (or rainfall + irrigation) typically exceeds 40 inches, or for popcorn or sweet corn. Cultivation or a labeled postemergence herbicide application may still be required under certain conditions for complete weed control.

Preplant Surface and Preplant Incorporated Applications (up to 14 days prior to planting)

Apply **Pyroxasulfone 85 WG** at the use rates specified in **Table 4** or **Table 5** as a broadcast spray to the soil surface or incorporated up to 14 days before planting on all soil types.

Preemergence Surface Application

Apply **Pyroxasulfone 85 WG** at use rates specified in **Table 4** or **Table 5** as a broadcast spray to the soil surface after planting and before crop emergence.

Early Postemergence Application

Apply **Pyroxasulfone 85 WG** at use rates specified in **Table 4** as a broadcast spray to corn at spiking up to the V4 stage (visible 4th leaf collar).

Sequential Applications

If a sequential application program of **Pyroxasulfone 85 WG** is used (e.g., fall application followed by spring application, or sequential applications in the spring), the maximum combined rate of **Pyroxasulfone 85 WG** that may be applied in a cropping season is 2.75 oz/A on coarse soils or 5.0 oz/A on all medium to fine soils.

Tank Mixtures:

Pyroxasulfone 85 WG may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products for a broader spectrum of control and/or control of emerged weeds. Refer to the tank mix product labels to confirm that the respective tank mix products are registered for use on specific corn types; not

all corn products are registered for use on field corn, popcorn, and sweet corn. Read and follow the label directions and restrictions for the all products involved in tank mixing. Carefully observe all application precautions, rotational crop restrictions and replanting instructions of each product's label:

atrazine
Balance® Pro
Callisto®
Outlook® Herbicide
Prowl® H_2O Herbicide
Python® WDG Herbicide
Sharpen® Powered by KIXOR® Herbicide
Status® Herbicide
Verdict® Powered by KIXOR® Herbicide
glyphosate[1]

[1]Includes postemergence tank mixes on glyphosate tolerant corn hybrids.
Always follow the most restrictive label use directions when mixing herbicide products. Follow the adjuvant recommendation for the tank mix partner of **Pyroxasulfone 85WG.**

Soybean

Pyroxasulfone 85 WG may be applied preplant surface, preplant incorporated, preemergence or early postemergence, or in the fall to soybean for residual preemergence weed control. Before applying to soybean, verify with your local seed company (supplier) the selectivity of **Pyroxasulfone 85 WG** on your variety to avoid potential injury .

Application Rates

Apply **Pyroxasulfone 85 WG** alone, in tank mix, or sequentially in soybeans at the residual rates in **Table 6**.

Table 6. Residual Rates of Pyroxasulfone 85 WG in Soybean

Application Timing	Use Rate (oz/A) by Soil Texture[1]		
	Coarse	Medium	Fine
Preplant Surface	1.5 – 2.1	2.0 – 3.0	2.5 – 3.5
Preplant Incorporated	1.5 – 2.1	2.0 – 3.0	2.5 – 3.5
Preemergence	1.5 – 2.1	2.0 – 3.0	2.5 – 3.5
Early Postemergence	1.0 – 2.1	1.5 - 3.0	2.0 – 3.5

[1] Refer to **Table 3** for definitions of soil texture groups.

Soybean Restrictions

- **On coarse soils - DO NOT** apply more than a maximum cumulative amount of 2.1 ozs/A of **Pyroxasulfone 85 WG** (0.112 lb ai/A of pyroxasulfone) per cropping season.
- **On medim to fine textured soils - DO NOT** apply more than a maximum cumulative amount of 3.5 ozs/A of **Pyroxasulfone 85 WG** (0.186 lb ai/A of pyroxasulfone) per cropping season.
- **Seeding Depth:** Crop seeds must be planted a minimum 1 inch deep.• There is no required (preharvest) interval between a preplant, preemergence, or early postemergence application of **Pyroxasulfone 85 WG** and the harvest of soybean grain.
- The use of **Pyroxasulfone 85 WG** may result in temporary growth suppression in soybean if extreme conditions of high rainfall and extended periods of water-saturated soil occur during soybean germination or early seedling development.

Application Timings

Pyroxasulfone 85 WG may be applied in a single application or in sequential applications.

Fall Applications for controlling weeds germinating the following spring

For use only in Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin, north of highway 136 in Illinois and north of highway 91 in Nebraska. Pyroxasulfone 85 WG may be applied in the fall to control weeds in conventional, minimum tillage, or no-till soybean production systems planted the following spring. This fall application program will typically need to be followed with a suitable in-season postemergence herbicide treatment to provide season long control of the complete target weed spectrum. Use only on medium or fine soils and at a use rate of 2.5 to 3.5 ounces (medium soil) and 3.5 ounces (fine soil) of **Pyroxasulfone 85 WG** per acre. See the main **Application Timings** section of this label for restrictions and recommendations.

Fall / Winter Applications for controlling weeds germinating in the fall or winter annual weeds

Pyroxasulfone 85 WG may be broadcast surface applied in the fall or winter to control winter annual weeds and other weeds germinating in the fall. Use on coarse, medium or fine soils at rates listed for the preplant surface timing. Sequential preemergence and/or postemergence applications can be made, but **Do NOT** exceed the maximum cumulative rate allowed by soil type per season. See the main **Application Timings** section of this label for restrictions and recommendations.

Early Preplant Surface Application (15 to 45 days prior to planting)

Use the higher application rate listed for preplant surface applications when applied earlier (15 to 45 days) before planting. A lower rate within the list range could be used if a later sequential application is planned. Preplant surface applications are not recommended on coarse soils or in areas where average annual rainfall (or rainfall + irrigation) typically exceeds 40 inches. Cultivation or a labeled postemergence herbicide application may still be required under certain conditions for complete weed control.

Preplant Surface or Preplant Incorporated Applications (up to 14 days prior to planting)

Apply **Pyroxasulfone 85 WG** at the use rates specified in **Table 6** as a broadcast spray to the soil surface or incorporated up to 14 days before planting on all soil types.

Preemergence Surface Application

Apply **Pyroxasulfone 85 WG** at use rates specified in **Table 6** as a broadcast spray to the soil surface after planting and before crop emergence.

Early Postemergence Application

Apply **Pyroxasulfone 85 WG** at use rates specified in **Table 6** as a broadcast spray to soybean at first-trifoliate leaf stage to third-trifoliate leaf stage. **Pyroxasulfone 85 WG** will provide residual control of weeds germinating after application. Weeds that are already emerged at the time of application must be controlled with cultivation, or tank mix or sequential application of another herbicide labeled for postemergence contral of the target weeds in the crop. **Pyroxasulfone 85 WG** applications to emerged soybeans may result in temporary leaf burn and stunting, but a reduction in soybean yield is unexpected. Tank mixes of **Pyroxasulfone 85 WG** with other crop protection products or adjuvants may significantly enhance this effect. Depending upon growing condition, recovery from this injury begins immediately but may take several weeks for the injury to dissipate entirely.

DO NOT apply **Pyroxasulfone 85 WG** to soybean from emergence (at-cracking) through unifoliate stage as injury may occur.

Sequential Applications

If a sequential application program of **Pyroxasulfone 85 WG** is used (e.g., fall application followed by spring application, or sequential applications in the spring), the maximum combined rate of **Pyroxasulfone 85 WG** that may be applied in a cropping season is 2.1 oz/A on coarse soils or 3.5 oz/A on medium to fine soils.

Tank Mixtures:

Pyroxasulfone 85 WG may be tank mixed or applied sequentially with one or more herbicide of, but not limited to, the following herbicide products: for a broader spectrum of control and/or control of emerged weeds. Refer to the tank mix product labels to confirm that the respective tank mix products are registered for use on soybeans. Read and follow the label directions and restrictions for the all products involved in tank mixing. Carefully observe all application precautions, rotational crop restrictions and replanting instructions of each product's label:

Extreme® Herbicide
Gangster® FR
Gangster® V
Lorox®
Optill® PRO Powered by KIXOR® Herbicide
Outlook® Herbicide
Prowl® H_2O Herbicide
Pursuit® Herbicide
Python® WDG Herbicide
Raptor® Herbicide
Scepter® Herbicide
Sharpen® Powered by KIXOR® Herbicide
Valor® SX
Valor® XLT
Verdict® Powered by KIXOR® Herbicide
glyphosate[1]

[1]Includes postemergence tank mixes on glyphosate tolerant soybean hybrids.
Always follow the most restrictive label use directions when mixing herbicide products. Follow the adjuvant recommendation for the tank mix partner of **Pyroxasulfone 85 WG.**

Spring and Winter Wheat

Pyroxasulfone 85 WG may be applied preplant surface, preemergence, delayed preemergence or early postemergence in fall-seeded or spring-seeded wheat for residual preemergence weed control.

Certain wheat varieties can be more sensitive to **Pyroxasulfone 85 WG**. Before applying to wheat, verify tolerance with your local seed company (supplier), university extension specialist (e.g., wheat breeder, weed scientist, county agent, etc.), or BASF representative.

Crop Tolerance

Pyroxasulfone 85 WG applied preplant surface or preemergence surface can cause wheat injury. Under stressful conditions (such as inadequate or excessive moisture, cool or hot temperatures, compacted soils, injury from other pesticides, disease or other pest damage, mechanical injury, nutrient imbalances, or other conditions known to cause plant stress) **Pyroxasulfone 85 WG** injury will be in intensified.

Wheat is tolerant to **Pyroxasulfone 85 WG** when applied delayed preemergence or early postemergence. However, some visual wheat response is possible when **Pyroxasulfone 85 WG** is applied to wheat under stressful conditions such as inadequate or excessive moisture, cool or hot temperatures, compacted soils, injury from other pesticides, disease or other pest damage, mechanical injury, nutrient imbalances, or other conditions known to cause plant stress.

Wheat response is most often visible as stunting and/or discoloration of leaf tissue (e.g., chlorosis), but in its most severe form can result in stand loss. The greatest potential for wheat response occurs when **Pyroxasulfone 85 WG** concentrates in the crop row. Unacceptable wheat response may be caused by uneven application, soil clods or disturbances, an open/cracked seed furrow that allows herbicide to directly contact the seed, or a deep seed furrow that allows herbicide concentration after a rain/irrigation event during wheat germination.

Apply **Pyroxasulfone 85 WG** only to a uniform seedbed which is firm and free of clods, cracks, excess trash (previous crop residue), and weed growth. The seedbed MUST be prepared to ensure good seed row closure and soil coverage of the seed. Use high quality seed. Plant seed at least ½-inch deep to avoid crop injury.

When applications of **Pyroxasulfone 85 WG** are intended to be made preplant surface or preemergence, plantseed at least 1-inch deep to avoil possible crop injury, but not too deep for proper germination. When applications of **Pyroxasulfone 85 WG** are intended to be made early postemergence, plantseed at least 1/2-inch to 1-inch deep to avoid arop injury.
The use of **Pyroxasulfone 85 WG** in wheat may result in temporary or sustained growth suppression and chlorosis if high rainfall or irrigation leads to extended periods of water-saturated soil during early seeding development. To reduce crop response, avoid applying **Pyroxasulfone 85 WG** if a long period of rain is expected prior to wheat emergence.

Herbicidal activity of **Pyroxasulfone 85 WG** may be reduced if trash from the previous crop covers more than 25% of the soil surface. Manage trash levels with combine straw shredder/spreaders, earlier burndown of emerged weeds, or light tillage.

Prolonged periods of dry weather following application of **Pyroxasulfone 85 WG** may reduce herbicidal effectiveness. When **Pyroxasulfone 85 WG** is not activated and weeds emerge, a labeled and effective postemergence herbicide in wheat may be needed to control weed escapes.

Pyroxasulfone 85 WG will not control germinated or emerged weeds, and should be applied with a tank mix partner or sequential application with a labeled burndown or postemergence wheat herbicide(s) for control of emerged weeds.

Application Rates

Apply **Pyroxasulfone 85 WG** alone, in tank mix, or sequentially in wheat at the residual rates in **Table 7.**

Table 7. Residual Rates of Pyroxasulfone 85 WG in Wheat

Application Timing	Use Rate (oz/A) by Soil Texture[1]		
	Coarse	Medium	Fine
Preplant Surface	0.7 – 1.5	1.0 – 2.0	1.5 – 2.5
Preemergence	0.7 – 1.5	1.0 – 2.0	1.5 – 2.5
Delayed Preemergence	0.7 – 1.5	1.0 – 2.0	1.5 – 2.5
Early Postemergence	0.7 – 1.5	1.0 – 2.0	1.5 – 2.5

[1] Refer to **Table 3** for definitions of soil texture groups.

Wheat Restrictions

- **DO NOT** apply more than a maximum cumulative amount of 2.5 ozs/A of **Pyroxasulfone 85 WG** (0.133 lb ai/A of pyroxasulfone) per cropping season.
- **DO NOT** apply preplant incorporated in wheat.
- **DO NOT** apply to durum wheat.
- Wheat forage and hay may be fed or grazed 7 or more days after application.
- **DO NOT** seed wheat deeper than 1.5-inches after a preplant application or before a preemergence or delayed preemergence application.
- **DO NOT** apply **Pyroxasulfone 85 WG** to flooded fields or fully saturated soils.
- **DO NOT** apply preemergence if ¼-inch or more rain is expected within 48 hours after application.
- **DO NOT** irrigate fields after a preemergence or delayed preemergence application until wheat spiking.
- **DO NOT** apply preplant, preemergence, or delayed preemergence to broadcast-seeded wheat.

Application Timings

Pyroxasulfone 85 WG may be applied in a single application or in sequential applications relative to the growth stage of wheat.

Preplant Surface Applications

Apply **Pyroxasulfone 85 WG** at the use rates specified in **Table 7** as a broadcast spray to the soil surface no more than 14 days prior to planting on all soil types.

Preemergence Surface Application

Apply **Pyroxasulfone 85 WG** at use rates specified in **Table 7** after planting but before wheat spiking as a broadcast spray to the soil surface with uniform seedbed which is firm and free of clods. Ensure good seed row closure and soil coverage to avoid contact with **Pyroxasulfone 85 WG**.

Delayed Preemergence Surface Application

Apply **Pyroxasulfone 85 WG** at the use rates specified in **Table 7** as a broadcast spray to the soil surface following wheat planting when 80% of germinated wheat seeds have a shoot at least ½-inch long until wheat spiking.

Early Postemergence Application

Apply **Pyroxasulfone 85 WG** at use rates specified in **Table 7** as a broadcast spray to wheat at spiking up to the 4th tiller growth stage. **Pyroxasulfone 85 WG** will only suppress or control labeled weeds that germinate after the early postemergence application and rainfall / irrigation activation. **Pyroxasulfone 85 WG** will not control already germinated or emerged weeds, and should be applied as a tank mix or sequential application with a labeled postemergence herbicide(s) for control of any emerged weeds. Apply **Pyroxasulfone 85 WG** as early as possible after wheat emergence in order to prevent weed emergence.

Sequential Applications

Pyroxasulfone 85 WG may be applied as a sequential or split application program where a preplant, preemergence, or delayed preemergence application is followed by an early postemergence application or where multiple early postemergence applications are made. **DO NOT** apply more than a maximum cumulative amount of 2.5 oz/A (0.133 lb ai/A of pyroxasulfone) per cropping season.

Tank Mixtures:

When applying preplant or preemergence, **Pyroxasulfone 85 WG** may tank mixed with one or more of, but not limited to, the following herbicide products for a broader spectrum of control and/or control of emerged weeds:

- **Sharpen® Powered by KIXOR® herbicide**
- glyphosate

When applying delayed preemergence, **Pyroxasulfone 85 WG** may tank mixed with one or more of, but not limited to, the following herbicide products for a broader spectrum of control and/or control of emerged weeds:

- **Sharpen® Powered by KIXOR® herbicide**
- glyphosate

Note: Applying glyphosate or **Sharpen** to emerged wheat will severely injure or kill the crop. **DO NOT** tank mix with **Sharpen**, glyphosate, or any other burndown herbicides if wheat has emerged (i.e., spiking or later).

When applying early postemergence, **Pyroxasulfone 85 WG** may be tank mixed with one or more of, but not limited to, the following herbicide products for a broader spectrum of control and/or control of emerged weeds:

- **Axial® XL herbicide**
- **Beyond® herbicide** (for **Clearfield®** or **Clearfield® Plus** wheat only)
- **Clarity® herbicide**
- **Prowl® H_2O herbicide**
- metribuzin (winter wheat only)

Pyroxasulfone 85 WG may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products for a broader spectrum of control and/or control of emerged weeds. Refer to the tank mix product labels to confirm that the respective tank mix products are registered for use on wheat. Read and follow the label directions and restrictions for the all products involved in tank mixing. Carefully observe all application precautions, rotational crop restrictions and replanting instructions of each product's label:Always follow the most restrictive label use directions when mixing herbicide products. Follow the adjuvant recommendation for the tank mix partner of **Pyroxasulfone 85 WG.**

Cotton

Pyroxasulfone 85 WG may be applied preplant surface, preplant incorporated, preemergence, early postemergence, or postemergence-directed (layby) to cotton for residual preemergence control of listed weeds (**Table 1**). Before applying to cotton, verify with your local seed company (supplier) the selectivity of **Pyroxasulfone 85 WG** on your variety to avoid potential injury.

Crop Tolerance

Pyroxasulfone 85 WG applied preplant surface, preemergence, or early postemergence can cause cotton injury. Under stressful conditions (such as inadequate or excessive moisture, cool or hot temperatures, compacted soils, injury from other pesticides, disease or other pest damage, mechanical injury, nutrient imbalances, or other conditions known to cause plant stress), **Pyroxasulfone 85 WG** injury will be intensified.

Cotton is tolerant to **Pyroxasulfone 85 WG** when applied postemergence-directed (layby). However, some visual cotton response is possible when **Pyroxasulfone 85 WG** is applied under stressful conditions such as inadequate or excessive moisture, cool or hot temperatures, compacted soils, injury from other pesticides, disease or other pest damage, mechanical injury, nutrient imbalances, or other conditions known to cause plant stress.

Cotton response is most often visible as stunting and/or discoloration of leaf tissue (e.g., chlorosis), but in its most severe form can result in stand thinning which could impact cotton yield. The greatest potential for cotton response occurs when **Pyroxasulfone 85 WG** concentrates in the crop row. Unacceptable cotton response may be caused by uneven application, soil clods or disturbances, an open/cracked seed furrow that allows herbicide to directly contact the seed, or a deep seed furrow that allows herbicide concentration after a rain/irrigation event.

Application Rates

Apply **Pyroxasulfone 85 WG** alone, in tank mix, or sequentially in cotton at the residual rates in **Table 8.**

Table 8. Residual Rates of Pyroxasulfone 85 WG in Cotton

Application Timing	Use Rate (oz/A) by Soil Texture[1]		
	Coarse[2]	Medium	Fine
Preplant Surface	0.75 – 1.0	1.0 – 1.5	1.5 – 2.1
Preplant Incorporated	0.75 – 1.0	1.0 – 1.5	1.5 – 2.1
Preemergence	0.75 – 1.0	1.0 – 1.5	1.5 – 2.1
Early Postemergence	0.75 – 1.0	0.75 – 1.5	1.5 – 2.1
Postemergence-Directed (Lay-by)	0.75 – 1.0	0.75 – 1.5	1.5 – 2.1

[1] Refer to **Table 3** for definitions of soil texture groups.

[2] **DO NOT** apply on coarse-textured soils defined as sand or loamy sand. **DO NOT** apply to coarse-textured soils with less than 1% organic matter.

Cotton Restrictions

- **DO NOT** apply more than 2.1 ozs/A of **Pyroxasulfone 85 WG** in a single application.
- **DO NOT** apply more than a maximum cumulative amount of 4.2 ozs/A of **Pyroxasulfone 85 WG** (0.223 lb ai/A of pyroxasulfone) per cropping season from sequential applications.
- **Seeding Depth:** Crop seeds must be planted a minimum 1 inch deep.
- There is no required (preharvest) interval between a preplant, preemergence, or postemergence application of **Pyroxasulfone 85 WG** and the harvest of cotton.

- Cotton gin byproducts may be fed to livestock.
- The use of **Pyroxasulfone 85 WG** may result in temporary growth suppression in cotton if extreme conditions of high rainfall and extended periods of water-saturated soil occur during cotton germination or early seedling development.

Application Timings

Pyroxasulfone 85 WG herbicide 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 **Pyroxasulfone 85 WG** at the use rates specified in **Table 8** as a broadcast spray to the soil surface or incorporated up to 45 days before planting on all soil types.

Preemergence Surface Application

Apply **Pyroxasulfone 85 WG** at use rates specified in **Table 8** as a broadcast spray to the soil surface after planting and before crop emergence.

Early Postemergence Application

Apply **Pyroxasulfone 85 WG** at use rates specified in **Table 8** as a broadcast spray to cotton from first true leaf stage to beginning bloom stage. **Pyroxasulfone 85 WG** will provide residual control of weeds germinating after application. **Pyroxasulfone 85 WG** will not control emerged weeds. Weeds emerged at the time of application must be controlled by another means, such as with cultivation or a tank mix or sequential application of herbicide labeled for postemergence control of the target weeds in cotton. **Pyroxasulfone 85 WG** applications to emerged cotton may result in temporary leaf burn and stunting, but a reduction in cotton yield is not expected.
DO NOT apply adjuvants with **Pyroxasulfone 85 WG** when making early postemergence applications.
DO NOT apply **Pyroxasulfone 85 WG** to cotton from emergence (at-cracking) through cotyledon stage or injury may occur.

Postemergence-Directed (Lay-by) Application

Apply **Pyroxasulfone 85 WG** at use rates specified in **Table 8** as a broadcast directed spray between cotton rows from 4-leaf stage to beginning bloom stage. **Pyroxasulfone 85 WG** will provide residual control of weeds germinating after application. **Pyroxasulfone 85 WG** will not control emerged weeds. Weeds emerged at the time of application must be controlled by another means, such as cultivation or a tank mix or sequential application of herbicide labeled for postemergence control of the target weeds in cotton. The use of hooded or shielded sprayers is recommended when applying **Pyroxasulfone 85 WG** as postemergence-directed spray. Avoid contacting cotton leaves with **Pyroxasulfone 85 WG** spray solution or injury may occur.

Sequential Applications

If a sequential application program of **Pyroxasulfone 85 WG** is used (e.g. preplant application followed by a preemergence application, preplant or preemergence application followed by postemergence or postemergence layby application), the maximum combined rate of **Pyroxasulfone 85 WG** that may be applied in a cropping season is 4.2 ozs/A on all soils. Separate sequential applications by at least 14 days.

Tank Mixtures:

Pyroxasulfone 85 WG may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products: for a broader spectrum of control and/or control of emerged weeds. Refer to the tank mix product labels to confirm that the respective tank mix products are registered for use on cotton. Read and follow the label directions and restrictions for the all products involved in tank mixing. Carefully observe all application precautions, rotational crop restrictions and replanting instructions of each product's label:
Prowl® H_2O herbicide

Sharpen® Powered by KIXOR® herbicide
Staple® herbicide
glyphosate[1]
glufosinate[2]

[1] Includes postemergence and postemergence directed (layby) tank mixes on glyphosate-tolerant cotton varieties
[2]Includes postemergence directed (layby) tank mixes on glufosinate-tolerant cotton varieties.

Always follow the most restrictive label use directions when mixing herbicide products. Follow the adjuvant recommendation for the tank mix partner of **Pyroxasulfone 85 WG.**

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 unopened container at once.

The **Directions for Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of K-I Chemical U.S.A., Inc. or the Seller. All such risks shall be assumed by the Buyer.

To the extent consistent with applicable law, K-I CHEMICAL U.S.A. INC. warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of K-I CHEMICAL U.S.A. INC. To the extent consistent with applicable law, K-I CHEMICAL U.S.A. INC., shall not be liable for consequential, special or indirect damages resulting from the use or handling of this product. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer. To the extent consistent with applicable law exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling or application of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid for this product or at K-I CHEMICAL U.S.A. INC.'s election, the replacement of this product. K-I CHEMICAL U.S.A. INC. MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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