

FLUMICLORAC-PENTYL	GROUP 14	HERBICIDE
PYROXASULFONE	GROUP 15	HERBICIDE

NET CONTENTS 2-1/2 GALLON

FOR ADDED BURNDOWN AND RESIDUAL CONTROL OF LISTED WEEDS IN FIELD CORN AND SOYBEANS

Active Ingredient	By Wt
Flumiclorac* pentyl ester	6.34%
Pyroxasulfone**	18.38%
Other Ingredients	75.28%
Total	100.00%

* [2-chloro-5-(cyclohex-1-ene-1,2-dicarboximido)-4-fluorophenoxy]acetic acid

** 5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-ylmethyl 4,5-dihydro-5,5-dimethylisoxazol-3-yl sulfone

Perpetuo™ Herbicide is a suspension concentrate (SC) that contains 0.59 pounds flumiclorac pentyl ester and 1.71 pounds pyroxasulfone per gallon.

KEEP OUT OF REACH OF CHILDREN

CAUTION

SEE NEXT PAGE FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

Always mix product thoroughly before use.

EPA Reg. No. 59639-242

EPA Est. 11773-IA-1[®], 228-IL-1[®], 39578-TX-1[®],
5481-ID-1[®], 62171-MS-1[®], 70815-GA-2[®]

Superscript is first letter of lot number.

VALENT®



Pyroxasulfone

PERPETUO™

HERBICIDE

FIRST AID

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

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-892-0099 for emergency medical treatment information.

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION

Harmful if swallowed or absorbed through the skin. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear: long-sleeved shirt and long pants, socks plus shoes and chemical-resistant gloves made of any waterproof material. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wear safety glasses. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

User Safety Requirements

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

Engineering 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:

- Remove clothing/PPE 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

This product is toxic to shrimp. Keep out of lakes, ponds or streams. **DO NOT** apply directly to water, or to areas where surface water is present or to intertidal areas below the mean highwater mark. **DO NOT** contaminate water when disposing of equipment washwater or rinsate.

Groundwater Advisory: This chemical has properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater 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 highwater mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to the treated areas. **DO NOT** contaminate water when disposing of equipment washwaters or rinsate.

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

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.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment and restricted-entry interval. For any requirements specific to your State, consult the agency in your State responsible for pesticide regulation.

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, including plants, soil, or water, is: coveralls worn over short-sleeved shirts and short pants, chemical-resistant gloves including barrier laminate or Viton \geq 14 mils, chemical-resistant footwear plus socks, and protective eyewear.

RESISTANCE MANAGEMENT

For resistance management, *Perpetuo* Herbicide is a Group 14 plus a Group 15 herbicide. Any weed population may contain or develop plants naturally resistant to *Perpetuo* Herbicide and other Group 14 or Group 15 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Appropriate resistance-management strategies must be followed.

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

- Rotate the use of *Perpetuo* Herbicide or other Group 14 plus Group 15 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds in a field.

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- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g., higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Scout field prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective. Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method, for example hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- If a weed pest population continues to progress after treatment with this product discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your local extension specialist or certified crop advisors for additional pesticide resistance-management directions for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact Valent U.S.A. LLC at 800-6-VALENT (682-5368).

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PRODUCT INFORMATION

Perpetuo Herbicide is a selective herbicide for postemergence control of susceptible broadleaf weeds in field corn and soybeans and also provides residual control of small seeded broadleaf and grass weeds, including late season germinating weeds, including waterhemp and Palmer amaranth.

A temporary crop response may be observed following a postemergence broadcast application of *Perpetuo* Herbicide. Corn and soybeans quickly out-grow all initial herbicide effects. When *Perpetuo* Herbicide is used as directed, yields are not adversely affected.

RESTRICTIONS

- **DO NOT** apply this product through any type of irrigation system.
- **DO NOT** apply with flood nozzles.

Perpetuo Herbicide Rate Summary

Fluid Ounces of <i>Perpetuo</i> Herbicide	Pounds of Flumiclorac-pentyl	Pounds of Pyroxasulfone
6	0.027	0.080
8	0.037	0.107
10	0.046	0.134

ENVIRONMENTAL CONDITIONS AND POSTEMERGENCE BIOLOGICAL PERFORMANCE

For best results, apply *Perpetuo* Herbicide to actively growing weeds within the growth stages indicated in this label. Applying *Perpetuo* Herbicide under conditions that do not promote active weed growth will reduce postemergence effectiveness. **DO NOT** apply *Perpetuo* Herbicide when crop or weeds are under stress due to drought, excessive water, extremes in temperature, disease or low humidity. Weeds under stress tend to become less susceptible to herbicidal action. *Perpetuo* Herbicide is most effective when applied under sunny conditions at temperatures above 70°F.

RAINFASTNESS

Perpetuo Herbicide is rainfast one hour after application. **DO NOT** apply *Perpetuo* Herbicide if rain is expected within one hour of application or post-emergence efficacy may be reduced.

APPLICATION AND CULTIVATION

DO NOT cultivate prior to or during application. **DO NOT** generate excessive dust while spraying. Excessively dusty conditions may interfere with the coverage of the weed leaf surface by the spray solution.

TANK MIXTURES

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on the product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. Valent U.S.A. LLC has evaluated the tank mix partners at the rates listed in this label for efficacy, crop safety, and compatibility. **DO NOT** mix with any other product whose label prohibits such a mixture.

ADDITIVES

Postemergence weed control by *Perpetuo* Herbicide requires the addition of an agronomically-approved adjuvant to the spray mixture. Use either a crop oil concentrate or methylated seed oil, which contains at least 15% emulsifiers and 80% oil, when applying *Perpetuo* Herbicide. Certain tank mixes require the use of a non-ionic surfactant. Non-ionic surfactant must contain at least 80% active ingredient and must be EPA approved for use on food crops. Verify mixing and compatibility qualities by a jar test (see directions below).

A spray grade nitrogen source (either ammonium sulfate at 2.0 to 2.5 lb/A or 28 to 32% nitrogen solution at 1 to 2 qt/A) may also be added to the spray mixture to enhance weed control. The addition of a nitrogen source does not replace the need for crop oil concentrate, methylated seed oil, or non-ionic surfactant.

Drift Control Additives

Refer to tank mix partner's label for adjuvant selection. Drift control additives may be used. When a drift control additive is used, read and carefully observe the cautionary statements and all other information appearing on the additive label.

JAR TEST TO DETERMINE COMPATIBILITY OF ADJUVANTS AND PERPETUO HERBICIDE

Perform a jar test before mixing commercial quantities of *Perpetuo* Herbicide when using *Perpetuo* Herbicide for the first time, when using new adjuvants, or when a new water source is being used.

1. Add 1 pt of water to a quart jar. Use the water from the same source and temperature as will be used in the spray tank mixing operation.
2. Add 3 ml of *Perpetuo* Herbicide to the quart jar, gently mix until product dissipates.
3. Add 6 ml (1 tsp) of the crop oil concentrate or methylated seed oil to the quart jar, gently mix. If a non-ionic surfactant is being used in a tank mix, add 2.5 ml (0.3 tsp) of the non-ionic surfactant in place of the oil.
4. If nitrogen is being used, add 16 ml (1 tbsp or 0.5 oz) of the 28 to 32% nitrogen source to the quart jar. If ammonium sulfate is being used, add 19 g AMS to the quart jar in place of the 28 to 32% nitrogen. Add ammonium sulfate to the jar before the *Perpetuo* Herbicide in step 2.
5. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.
6. An ideal tank mix combination will be uniform and free of suspended particles. If any of the following conditions are observed, question the choice of adjuvant:
 - a) Layer of oil or globules on the mixture's surface.
 - b) Flocculation: fine particles in suspension or as a layer on the bottom of the jar.
 - c) Clabbering: thickening texture (coagulated) like gelatin.

MIXING INSTRUCTIONS

1. Fill spray tank with water 1/3 to 1/2 of desired level with clean water.
2. While agitating, add the required amount of *Perpetuo* Herbicide. Agitation creates a rippling or rolling action on the water surface. If tank mixing *Perpetuo* Herbicide with other labeled pesticides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates and then solutions. Prepare no more spray mixture than is required for the immediate spray operation.
3. Add any required adjuvants.
4. Add any required nitrogen source, unless ammonium sulfate (AMS) is being used. If AMS is being used as the nitrogen source, add after water soluble bags and before dry pesticides.
5. Fill spray tank to desired level with water. Continue agitation until spray solution has been applied.
6. Mix only the amount of spray solution that can be applied the day of mixing. *Perpetuo* Herbicide will remain active in the spray solution for 12 hours.

CROP FAILURE

If the crop treated with *Perpetuo* Herbicide is lost due to a catastrophe, for example hail or other forms of inclement weather, refer to crop Rotational Restrictions below.

APPLICATION EQUIPMENT

Ensure application equipment is clean and in good repair. Space nozzles uniformly on boom and check frequently for accuracy. Refer to the manufacturer's spray chart for nozzle selection and operating information. Give special attention to preparing and operating the spray equipment to assure proper coverage of weed foliage.

GROUND APPLICATION

CARRIER VOLUME AND SPRAY PRESSURE

Use *Perpetuo* Herbicide on a broadcast basis in a minimum of 15 gallons of water per acre and a spray pressure of 35 to 60 PSI measured at the spray nozzle. If weed populations are moderate to heavy and/or weeds are approaching maximum label size and/or crop canopy is dense, use a minimum of 20 GPA of water and a spray pressure of 40 to 50 PSI. Nozzle selection must meet manufacturer's gallonage and pressure guidelines for postemergence herbicide application. If tank mixing with dicamba or 2,4-D containing product, defer to those labels' application carrier volumes and spray pressures.

BROADCAST APPLICATION

Apply *Perpetuo* Herbicide and tank mixes with ground equipment using standard commercial sprayers equipped with flat fan (including split-nozzle systems which spray in opposite directions) or hollow cone nozzles designed to deliver the desired spray pressure and spray volume. Thorough weed coverage is required for optimum control. Center spray nozzles at a maximum of 20 inch spacing to provide adequate coverage. If tank mixing with dicamba or 2,4-D containing product, defer to those labels' application carrier volumes and spray pressures.

AERIAL APPLICATION

CARRIER VOLUME AND SPRAY PRESSURE

Apply *Perpetuo* Herbicide in a minimum of 7 gallons of water per acre for spring burndown programs. Higher gallonage applications result in more consistent performance.

Nozzle and Nozzle Orientation

Use the largest droplet size possible that provides sufficient coverage and control. Use nozzles which produce flat or hollow cone spray patterns. Use non-drip type nozzles, for example diaphragm-type nozzles to avoid unwanted discharge of spray solution.

Angle nozzles toward the rear of the aircraft, at an angle between 0° and 15° downward.

MANDATORY SPRAY DRIFT

Aerial Application

- **DO NOT** release spray at a height greater than 10 feet above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- For aerial application, applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- The boom length must not exceed 75% of the wingspan for airplanes or 90% of the rotor blade diameter for helicopters.
- Applicators must use 1/2 swath displacement upwind at the downwind edge of the field.
- Nozzles must be oriented so the spray is directed toward the back of the aircraft.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

Ground Boom Application

- Apply with the nozzle height recommended by the manufacturer, but no more than 3 feet above the ground or crop canopy.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

SPRAY DRIFT ADVISORIES

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

IMPORTANCE OF DROPLET SIZE

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

Controlling Droplet Size – Ground Boom

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

Controlling Droplet Size – Aircraft

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

BOOM HEIGHT – Ground Boom

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

SHIELDED SPRAYERS

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

TEMPERATURE AND HUMIDITY

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

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inver-

sion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

WIND

Apply at wind speeds between 2 and 10 miles per hour. Drift potential generally increases with increased wind speed. Inversion potential generally increases with low wind speeds. **AVOID APPLICATIONS DURING GUSTY OR NO WIND CONDITIONS.** Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

Table 1. Weeds Controlled/Suppressed by Preemergence Activity of Perpetuo Herbicide

Common Name	Scientific Name	Application Rates* 6 to 10 fl oz/A
		S = Suppression C = Control
Annual Grasses		
Barley, Little	<i>Hordeum leporium</i>	C
Barnyardgrass	<i>Echinochloa crus-galli</i>	C
Bluegrass, Annual	<i>Poa annua</i>	C
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	C
Brome, Downy	<i>Bromus tectorum</i>	S
Brome, Japanese	<i>Bromus japonicus</i>	S
Canarygrass	<i>Phalaris canariensis</i>	C
Cheat	<i>Bromus secalinus</i>	S
Crabgrass, Large	<i>Digitaria sanguinalis</i>	C
Crabgrass, Smooth	<i>Digitaria ischaemum</i>	C
Cupgrass, Southwestern	<i>Eriochloa acuminata</i>	C
Cupgrass, Woolly	<i>Eriochloa villosa</i>	S
Foxtail, Bristly	<i>Setaria verticillata</i>	C
Foxtail, Giant	<i>Setaria faberi</i>	C
Foxtail, Green	<i>Setaria viridis</i>	C
Foxtail, Yellow	<i>Setaria pumila</i>	C
Goosegrass	<i>Eleusine indica</i>	C
Johnsongrass (seedling)	<i>Sorghum halepense</i>	C
Millet, Wild Proso	<i>Panicum miliaceum</i>	S
Oat, Wild	<i>Avena fatua</i>	S
Panicum, Fall	<i>Panicum dichotomiflorum</i>	C
Panicum, Texas	<i>Panicum texanum</i>	C
Red Rice	<i>Oryza sativa</i>	C
Ryegrass, Italian	<i>Lolium multiflorum</i>	C
Ryegrass, Rigid	<i>Lolium rigidum</i>	C
Sandbur, Longspine	<i>Cenchrus longispinus</i>	S
Shattercane	<i>Sorghum vulgare</i>	S
Witchgrass	<i>Panicum capillare</i>	C

(continued)

*For early preplant applications and reduced tillage (i.e., no-till/high residue) systems use the higher labeled rate.

Table 1. Weeds Controlled/Suppressed by Preemergence Activity of *Perpetuo* Herbicide (continued)

Common Name	Scientific Name	Application Rates* 6 to 10 fl oz/A
		S = Suppression C = Control
Annual Broadleaf		
Amaranth, Palmer	<i>Amaranthus palmeri</i>	C
Amaranth, Powell	<i>Amaranthus powellii</i>	C
Buckwheat, Wild	<i>Polygonum convolvulus</i>	S
Carpetweed	<i>Mollugo verticillata</i>	C
Chickweed, Common	<i>Stelleria media</i>	S
Fleabane, Hairy	<i>Conyza bonariensis</i>	S
Groundsel, Common	<i>Senecio media</i>	S
Henbit	<i>Lamium amplexicaule</i>	S
Horseweed/Marestail	<i>Conyza canadensis</i>	S
Jimsonweed	<i>Datura stramonium</i>	S
Kochia (including triazine and ALS resistant)	<i>Kochia scoparia</i>	S
Lambsquarters, Common	<i>Chenopodium album</i>	S
Morningglory, Entireleaf	<i>Ipomoea hederacea integriuscula</i>	S
Morningglory, Ivyleaf	<i>Ipomoea hederacea</i>	S
Morningglory, Pitted	<i>Ipomoea lacunosa</i>	S
Nightshade, Black	<i>Solanum nigrum</i>	C
Nightshade, Eastern Black	<i>Solanum ptycanthum</i>	C
Nightshade, Hairy	<i>Solanum physalifolium</i>	C
Pigweed, Redroot	<i>Amaranthus retroflexus</i>	C
Pigweed, Smooth	<i>Amaranthus hybridus</i>	C
Pigweed, Tumble	<i>Amaranthus albus</i>	C
Purslane, Common	<i>Portulaca oleracea</i>	C
Pusley, Florida	<i>Richardia scabra</i>	C
Ragweed, Common	<i>Ambrosia artemisiifolia</i>	S
Sida, Prickly (Teaweed)	<i>Sida spinosa</i>	C
Spreading Orach	<i>Atriplex subspicata</i>	S
Velvetleaf	<i>Abutilon theophrasti</i>	C
Waterhemp, Common	<i>Amaranthus rudis</i>	C
Sedge		
Nutsedge, Yellow	<i>Cyperus esculentus</i>	S

* For early preplant applications and reduced tillage (i.e., no-till/high residue) systems use the higher labeled rate.

Table 2. Weeds Controlled/Suppressed by Postemergence Activity of *Perpetuo* Herbicide

Common Name	Scientific Name	Maximum Leaf Number	Application Rates*	
			6 fl oz/A S = Suppression C = Control	8 to 10 fl oz/A
Amaranth, Palmer	<i>Amaranthus palmeri</i>	4	S	S
Amaranth, Powell	<i>Amaranthus powellii</i>	4	S	C
Cocklebur, Common	<i>Xanthium strumarium</i>	4	S	S
Jimsonweed	<i>Datura stramonium</i>	4	S	C
Lambsquarters	<i>Chenopodium album</i>	3	S	S
Pigweeds, Prostrate	<i>Amaranthus blitoides</i>	3	S	C
Pigweeds, Redroot	<i>Amaranthus retroflexus</i>	3	S	C
Pigweeds, Smooth	<i>Amaranthus hybridus</i>	3	S	C
Prickly Sida	<i>Sida spinosa</i>	3	S	C
Ragweed, Common	<i>Ambrosia artemisiifolia</i>	3	S	C
Velvetleaf**	<i>Abutilon theophrasti</i>	6	S	C
Spotted Spurge	<i>Euphorbia maculata</i>	2	S	C

* For early preplant applications and reduced tillage (i.e., no-till/high residue) systems use the higher labeled rate.

** The addition of a spray grade nitrogen fertilizer is advised for velvetleaf control.

Adjuvant: *Perpetuo* Herbicide must be applied with 1 pt/A of crop oil concentrate or methylated seed oil. A spray grade nitrogen source (either ammonium sulfate at 2.0 to 2.5 lb/A or 28 to 32% nitrogen solution at 1 to 2 qt/A) may be added to enhance weed control.

DIRECTIONS FOR USE IN SPRING BURNDOWN PROGRAMS IN FIELD CORN AND SOYBEANS

(Prior to crop emergence)

Apply *Perpetuo* Herbicide at 6 to 10 fl oz/A (0.028 to 0.046 lb ai/A flumiclorac-pentyl) (0.080 to 0.134 lb ai/A pyroxasulfone), in combination with labeled burndown herbicides to help control emerged weeds prior to crop emergence. The addition of *Perpetuo* Herbicide to burndown herbicides including dicamba, glyphosate, glufosinate and 2,4-D has been shown to increase the speed of control of many weeds as well as increase overall burndown of Carolina geranium, cutleaf evening-primrose and smartweeds. Refer to tank mix partner labels for weeds controlled and plant-back restrictions.

DIRECTIONS FOR USE IN PREEMERGENCE IN FIELD CORN AND SOYBEANS (Prior to crop emergence)

RESTRICTIONS:

- **DO NOT** apply more than 10 fl oz/A per year (0.046 lb ai/A flumiclorac-pentyl) (0.134 lb ai/A pyroxasulfone) for preemergence or postemergence use in field corn or soybean per application.
- **DO NOT** make more than one application per year.
- **DO NOT** apply more than 10 oz/A (0.046 lb ai/A flumiclorac-pentyl) (0.134 lb ai/A pyroxasulfone) per year.

Apply *Perpetuo* Herbicide preplant or preemergence up until crop emergence. See "Table 1. Weeds Controlled/Suppressed by Preemergence Activity of *Perpetuo* Herbicide." Apply *Perpetuo* Herbicide alone or in tank mixtures. Cultivation or a labeled postemergence herbicide application may be required for complete weed control. Seed must be planted a minimum of 1 inch deep. Shallow planting can lead to increased crop injury risk.

For additional control of morningglory, common ragweed, Palmer amaranth and velvetleaf and others, use tank mixes or sequential applications of *Perpetuo* Herbicide at the labeled use rate. A sequential application of a post-emergence herbicide labeled for control of these broadleaf weeds may also be used to increase control during the growing season.

DIRECTIONS FOR USE IN FIELD CORN

Perpetuo Herbicide can be used on field corn grown for commercial seed production.

RESTRICTIONS

- **DO NOT** use *Perpetuo* Herbicide on popcorn or sweet corn.
- **DO NOT** apply *Perpetuo* Herbicide to field corn before the 2-leaf or after the V6 stage.
- **DO NOT** apply more than 10 fl oz of *Perpetuo* Herbicide (0.046 pounds of flumiclorac-pentyl and 0.134 pounds pyroxasulfone) per acre per application.
- **DO NOT** make more than 1 application per year.
- **DO NOT** apply more than 10 fl oz of *Perpetuo* Herbicide (0.046 pounds of flumiclorac-pentyl and 0.134 pounds pyroxasulfone) per acre per year.
- **DO NOT** graze animals or use as a feed within 28 days of *Perpetuo* Herbicide application.

PRECAUTIONS

- Verify with your seed corn supplier that *Perpetuo* Herbicide has acceptable selectivity on inbred prior to use. This precaution will help avoid potential injury on sensitive hybrids.
- Use on inbred lines of other genetic material used in a breeding program is done at the sole risk of the user.

TIMING TO FIELD CORN

Apply *Perpetuo* Herbicide to field corn from the 2-leaf through the V6 stage. Determine the leaf stage of corn by counting only those leaves with leaf collars visible.

TIMING TO WEEDS

Identify weed species as early as possible. Rates, weed species and maximum weed heights for effective control with *Perpetuo* Herbicide as a stand-alone broadcast or drop nozzle application are indicated in "Table 2. Weeds Controlled by Postemergence Activity of *Perpetuo* Herbicide."

Drop Nozzle Applications

Make drop nozzle application after corn has reached a sufficient height for the spray to be directed beneath the corn leaves or when corn leaves prevent proper spray coverage of weeds. When making a drop nozzle application, use 1 qt/A of crop oil concentrate. Since the activity of *Perpetuo* Herbicide is enhanced when the 1 qt/A rate of crop oil concentrate is used, care must be taken to minimize exposure of corn leaves to the spray. Avoid applying *Perpetuo* Herbicide directly into the corn whorl when making a post directed application.

FIELD CORN TANK MIXES

Apply *Perpetuo* Herbicide at 6 to 10 fl oz/A (0.028 to 0.046 lb ai/A flumiclorac-pentyl) (0.080 to 0.134 lb ai/A pyroxasulfone) to control the weeds listed in Table 2. To control additional weeds in field corn, tank mix *Perpetuo* Herbicide at the labeled use rate.

For best results, apply *Perpetuo* Herbicide tank mixes during periods when corn and/or weeds are actively growing. For maximum control, weeds must receive thorough spray coverage. Crop response from *Perpetuo* Herbicide tank mix applications may be greater than that occurring from *Perpetuo* Herbicide applied alone. Crop response from *Perpetuo* Herbicide is temporary and does not adversely affect crop yield when applied according to the label use directions.

DIRECTIONS FOR USE IN SOYBEAN

RESTRICTIONS

- **DO NOT** apply more than 10 fl oz of *Perpetuo* Herbicide (0.046 pounds of flumiclorac-pentyl and 0.134 pounds pyroxasulfone) per acre per application.
- **DO NOT** make more than 1 application per year.
- **DO NOT** apply more than 10 fl oz of *Perpetuo* Herbicide (0.046 pounds of flumiclorac-pentyl and 0.134 pounds pyroxasulfone) per acre per year.
- **DO NOT** graze treated fields or harvest for forage or hay.
- **DO NOT** apply *Perpetuo* Herbicide after the V6 soybeans growth stage.
- **DO NOT** apply *Perpetuo* Herbicide within 60 days of harvest.
- For coarse soils, **DO NOT** apply more than 8 fl oz of *Perpetuo* Herbicide (0.037 pounds of flumiclorac-pentyl and 0.107 pounds pyroxasulfone) per acre per application.
- For coarse soils, **DO NOT** apply more than 8 fl oz of *Perpetuo* Herbicide (0.037 pounds of flumiclorac-pentyl and 0.107 pounds pyroxasulfone) per acre per year.

TIMING TO SOYBEANS

Apply *Perpetuo* Herbicide to soybeans until the V6 growth stage.

TIMING TO WEEDS

Identify weed species as early as possible. Rates, weed species and maximum weed heights for effective control with *Perpetuo* Herbicide as a stand-alone broadcast application are indicated in "Table 2. Weeds Controlled by Postemergence Activity of *Perpetuo* Herbicide."

SOYBEAN TANK MIXES

Apply *Perpetuo* Herbicide at 6 to 10 fl oz/A (0.028 to 0.046 lb ai/A flumiclorac-pentyl) (0.080 to 0.134 lb ai/A pyroxasulfone) to control the weeds listed in "Table 2. Weeds Controlled by Postemergence Activity of *Perpetuo* Herbicide." To control additional weeds in soybean, tank mix *Perpetuo* Herbicide with approved herbicides at the labeled use rate.

For best results, apply *Perpetuo* Herbicide tank mixes during periods when soybeans and/or weeds are actively growing. For maximum control, weeds must receive thorough spray coverage. Crop response from *Perpetuo* Herbicide tank mix applications may be greater than that occurring from *Perpetuo* Herbicide applied alone. Crop response from *Perpetuo* Herbicide is temporary and does not adversely affect crop yield when applied according to the label use directions.

ROTATIONAL RESTRICTIONS

Crop	<i>Perpetuo</i> Herbicide Application Use Rates (fl oz/A)		
	6	8	10
	Rotational Crop Interval (Months After Application)		
Alfalfa	10	10	10
Beans, edible dry	11	11	11
Beans, edible-podded and succulent shelled	11	11	11
Canola (Rapeseed)	12	12	15
Chickpea	1	1	1
Corn	0	0	0
Corn, Sweet	8	8	8
Cotton	2	2	4
Flax	4	4	6
Grain Sorghum	6	6	8
Grasses grown for seed	18	18	18
Lentil	1	1	2
Peanut	2	2	4

(continued)

ROTATIONAL RESTRICTIONS (continued)

Crop	Perpetuo Herbicide Application Use Rates (fl oz/A)		
	6	8	10
	Rotational Crop Interval (months after application)		
Peas, edible-podded and succulent shelled	9	9	11
Peas, Field (dry)	1	1	1
Potato	4	4	4
Rice	12	12	18
Safflower	1	1	1
Small Grains (other than wheat)	11	11	11
Soybean	0	0	0
Sugar Beet	12	12	15
Sunflower	2	2	3
Sweet Potato	9	9	9
Wheat	1	1	4
Other Crops	18	18	18

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage, disposal or cleaning of equipment.

STORAGE

Store in a cool dry place.

Keep pesticide in original container.

Keep container closed when not in use.

DO NOT put concentrate or dilute into food or drink containers.

Not for use or storage in or around the home.

For help with any spill, leak, fire or exposure involving this material, call day or night 1-800-892-0099.

PESTICIDE DISPOSAL

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL

Nonrefillable container. **DO NOT** reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.

**DISCLAIMER, RISKS OF USING THIS PRODUCT,
LIMITED WARRANTY
AND LIMITATION OF LIABILITY**

IMPORTANT: Read the entire Label including this Disclaimer, Risks of Using this Product, Limited Warranty, and Limitation of Liability before using this product. If the terms are not acceptable THEN DO NOT USE THE PRODUCT; rather, return the unopened product within 15 days of purchase for a refund of the purchase price.

RISKS OF USING THIS PRODUCT

The Buyer and User (referred to collectively herein as "Buyer") of this product should be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance of the target pest or weeds to this product, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions; irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of Valent. The Buyer should be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN THIS PRODUCT SHOULD NOT BE APPLIED. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND TO THE FULLEST EXTENT ALLOWED BY LAW, AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

Valent shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

LIMITED WARRANTY

Valent warrants only that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the label, under average use conditions, when used strictly in accordance with the label and subject to the Risks of Using This Product as described above. To the extent consistent with applicable law AND AS SET FORTH ABOVE, VALENT MAKES NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED. No agent or representative of Valent or Seller is authorized to make or create any other express or implied warranty.

LIMITATION OF LIABILITY

To the fullest extent allowed by law, Valent or Seller is not liable for any incidental, consequential, indirect or special damages resulting from the use or handling of this product. The limitation includes, but is not limited to, loss of yield on all or any portion of the treated acreage, increased care, treatment or other expenses required to take the crop to harvest, increased finance charges or altered finance ratings, emotional or mental distress and/or exemplary damages. TO THE FULLEST EXTENT ALLOWED BY LAW, THE EXCLUSIVE REMEDY OF THE BUYER, AND THE EXCLUSIVE MAXIMUM LIABILITY OF VALENT OR SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR

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HANDLING OF THIS PRODUCT SHALL BE THE RETURN OF THE PURCHASE PRICE OF THIS PRODUCT OR, AT THE ELECTION OF VALENT OR SELLER, THE REPLACEMENT OF THE PRODUCT.

PROMPT NOTICE OF CLAIM

To the extent consistent with applicable law allowing such requirements, Valent must be provided prompt notice as soon as Buyer has reason to believe it may have a claim, but in no event later than twenty-one days from date of planting, or twenty-one days from the date of application, whichever is latter, so that an immediate inspection of the affected property and growing crops can be made.

To the extent consistent with applicable law, if Buyer does not notify Valent of any claims, in such period, it shall be barred from obtaining any remedy.

NO AMENDMENTS

Valent and Seller offer this product, and Buyer accepts it, subject to the foregoing **Disclaimer, Risks of Using This Product, Limited Warranty and Limitation of Liability**, which may not be modified by any oral or written agreement.

TANK MIXES

NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor, to the extent allowed by applicable law.

Read and follow the entire label of each product to be used in the tank mix with this product.

SPECIMEN

SPECIMEN

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Perpetuo is a trademark and *Products That Work, From People Who Care* is a registered trademark of Valent U.S.A. LLC

Manufactured for:

Valent U.S.A. LLC

P.O. Box 8025, Walnut Creek CA 94596-8025

Made in U.S.A.

Form 2257-A

EPA Reg. No. 59639-242

EPA Est. 11773-IA-1[Ⓢ], 228-IL-1[Ⓢ], 39578-TX-1[Ⓢ], 5481-ID-1[Ⓢ], 62171-MS-1[Ⓢ],
70815-GA-2[Ⓢ]

Superscript is first letter of lot number.

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SAL20200128

Information contained in this booklet is accurate at the time of printing. Since product testing is a continuous process, please read and follow the directions on the product label for the most current directions and precautionary statements.

Always check with your state to verify state registration status or call 800-6-VALENT (682-5368).

SPECIMEN



For state registration and/or supplemental labels, please call or visit us online.

Products That Work, From People Who Care[®] | valent.com | 800-6-VALENT (682-5368)

Always read and follow label instructions.

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FLUMICLORAC-PENTYL	GROUP	14	HERBICIDE
PYROXASULFONE	GROUP	15	HERBICIDE

PERPETUO™ HERBICIDE

FOR ADDED BURNDOWN AND RESIDUAL CONTROL OF LISTED WEEDS IN FIELD CORN AND SOYBEANS



Pyroxasulfone

Active Ingredient	By Wt
Flumiclorac* pentyl ester.....	6.34%
Pyroxasulfone**.....	18.38%
Other Ingredients.....	75.28%
Total	100.00%

* [2-chloro-5-(cyclohex-1-ene-1,2-dicarboximido)-4-fluorophenoxy]acetic acid
 ** 5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-ylmethyl
 4,5-dihydro-5,5-dimethylisoxazol-3-yl sulfone

Perpetuo™ Herbicide is a suspension concentrate (SC) that contains 0.59 pounds flumiclorac pentyl ester and 1.71 pounds pyroxasulfone per gallon.

KEEP OUT OF REACH OF CHILDREN CAUTION

SEE BOOKLET FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

NET CONTENTS 2-1/2 GALLON

Always mix product thoroughly before use.

FIRST AID

If swallowed: Call a poison control center or doctor immediately for treatment advice.

Have person sip a glass of water if able to swallow.

DO NOT induce vomiting unless told to do so by a poison control center or doctor.

DO NOT give anything by mouth to an unconscious person.

Take off contaminated clothing.

If on skin or clothing:

Rinse skin immediately with plenty of water for 15-20 minutes.

Call a poison control center or doctor for treatment advice.

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.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-892-0099 for emergency medical treatment information.

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION

Harmful if swallowed or absorbed through the skin. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear: long-sleeved shirt and long pants, socks plus shoes and chemical-resistant gloves made of any waterproof material. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wear safety glasses. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

User Safety Requirements

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

Engineering 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:

- Remove clothing/PPE 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

This product is toxic to shrimp. Keep out of lakes, ponds or streams. **DO NOT** apply directly to water, or to areas where surface water is present or to intertidal areas below the mean highwater mark. **DO NOT** contaminate water when disposing of equipment washwater or rinsate.

Groundwater Advisory: This chemical has properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater 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 highwater mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to the treated areas. **DO NOT** contaminate water when disposing of equipment washwaters or rinsate.

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

Agricultural Use Requirements

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

For complete directions for use, disclaimer, and storage and disposal, see booklet.

Perpetuo is a trademark of Valent U.S.A. LLC

Manufactured for:

Valent U.S.A. LLC

P.O. Box 8025

Walnut Creek CA 94596-8025

Made in U.S.A.

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