

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

February 23, 2016

Mr. Robert Avalos Registration Manager Loveland Products, Inc. P.O. Box 1286 Greeley, CO 80632-1286

Subject: PRIA Label and CSF Amendment – Converting current 100% repack to own

formula, adding Alternate CSFs A-F Product Name: LPI Glufosinate 280 EPA Registration Number: 34704-1080

Application Date: 11/11/2015 Decision Number: 511143

Dear Mr. Avalos:

The amended label and CSFs referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, are acceptable subject to the below condition:

1. The data requirements for storage stability and corrosion characteristics (Guidelines 830.6317 and 830.6320) are not satisfied. A one year study is required to satisfy these data requirements. You have 12 months from the date of this letter to provide these data.

This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Please note that the record for this product currently contains the following CSFs:

- Basic CSF dated 11/11/2015
- Alternate CSF A dated 11/11/2015
- Alternate CSF B dated 11/11/2015
- Alternate CSF C dated 11/11/2015

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- Alternate CSF D dated 11/11/2015
- Alternate CSF E dated 11/11/2015
- Alternate CSF F dated 11/11/2015

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

Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. If you have any questions, please contact Lisa Pahel by phone at (703) 347-0459, or via email at pahel.lisa@epa.gov.

Sincerely,

Heather Garvie, Product Manager 24 Fungicide and Herbicide

Registration Division (7505P)
Office of Pesticide Programs

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Enclosure: Product Chemistry Review dated 01/12/2016 (DP#430493), Acute Toxicology Review dated 01/28/2016 (DP#430494)



# **LPI GLUFOSINATE 280**

A non-selective herbicide for post emergence broadcast use on canola, corn, cotton, and soybean designated as LibertyLink®. LPI Glufosinate 280 may be used for weed control in non-LibertyLink cotton when applied with a hooded sprayer in-crop. LPI Glufosinate 280 may also be applied as a broadcast burndown application before planting or prior to emergence of any conventional or transgenic variety of canola, sweet corn\*, corn, cotton, olive, rice\*, soybean, or sugar beet. LPI Glufosinate 280 may be used for post emergence weed control in listed tree, vine, and berry crops. LPI Glufosinate 280 may also be applied for potato vine desiccation.

\*Not for use in California.

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# KEEP OUT OF REACH OF CHILDREN CAUTION

For Additional Precautionary Statements, Complete First Aid, Directions for Use, Storage and Disposal and Other Use Information, See Inside This Label Booklet.

	FIRST AID		
If on skin:	<ul> <li>Take off contaminated clothing.</li> <li>Rinse skin immediately with plenty of water for 15 to 20 minutes.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>		
If swallowed:	<ul> <li>Call a poison control center or doctor immediately for treatment advice.</li> <li>Have person sip a glass of water if able to swallow.</li> <li>Do not induce vomiting unless told to by a poison control center or doctor.</li> <li>Do not give anything to an unconscious person.</li> </ul>		
If in eyes:	<ul> <li>Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.</li> <li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>		

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

FOR A MEDICAL EMERGENCY INVOLVING LPI GLUFOSINATE 280 CALL: 1-866-944-8565.

**Note to Physician:** If ingested, endotracheal intubation and gastric lavage should be performed as soon as possible followed by charcoal and sodium sulfate administration.

EPA REG. NO. 34704-1080

EPA EST. NO. 34704-MS-001

**NET CONTENTS 2.5 GAL (9.46 L)** 

# ACCEPTED

02/23/2016

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

34704-1080

EXP 09/15

<sup>\*</sup>CAS Number 77182-82-2

<sup>\*\*</sup>Equivalent to 2.34 pounds of active ingredient per U.S. gallon.

# PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Harmful if absorbed through skin. Harmful if swallowed. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco or using the toilet. Wear long-sleeved shirt and long pants, socks, shoes, and gloves. Remove and wash contaminated clothing before reuse. Avoid contact with eyes or clothing. Wear protective eyewear (if appropriate).

# Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to LPI Glufosinate 280 are listed below.

#### Applicators and other handlers must wear:

- Coveralls worn over short-sleeved shirt and short pants,
- Chemical-resistant gloves such as barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, polyvinyl chloride (PVC) ≥ 14 mils, or Viton® ≥ 14 mils,
- Chemical resistant footwear plus socks and
- Protective eyewear (goggles face shield or safety glasses).
- Wear a chemical resistant apron when mixing/loading and cleaning equipment.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with LPI Glufosinate 280's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Mixers/loaders supporting aerial applications must wear a dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C), or a NIOSH approved respirator with any N, R, P or HE filter.

#### **USER SAFETY RECOMMENDATIONS**

#### Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash outside of gloves before removing, and wash thoroughly and change

#### ENGINEERING CONTROLS STATEMENT

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.

# **ENVIRONMENTAL HAZARDS**

Do not apply directly to water or to areas where surface water is present, except as allowed by the Use Directions for rice on this label. Do not apply to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters or rinsate.

This pesticide is toxic to vascular plants and should be used strictly in accordance with the drift and run-off precautions on this label in order to minimize off-site exposures.

Under some conditions, LPI Glufosinate 280 may have a potential to run-off to surface water or adjacent land. Where possible, use methods which reduce soil erosion, such as no till, limited till and contour plowing; these methods also reduce pesticide run-off. Use of vegetation filter strips along rivers, creeks, streams, wetlands, etc. or on the downhill side of fields where run-off could occur to minimize water run-off is recommended.

# **DIRECTIONS FOR USE**

It is a violation of Federal law to use LPI Glufosinate 280 in a manner inconsistent with its labeling.

Do not use LPI Glufosinate 280 until you have read the entire label. Do not apply LPI Glufosinate 280 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.

In the State of New York Only: Not For Use In Nassau and Suffolk Counties.

#### AGRICULTURAL USE REQUIREMENTS

Use LPI Glufosinate 280 only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses; and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry intervals. The requirements in this box only apply to uses of LPI Glufosinate 280 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, with the exception of sweet corn irrigation activities, which has a 4-day REI.

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 worn over short-sleeved shirt and short pants;
- Chemical resistant gloves such as barrier laminate, butyl rubber 14 mils, nitrile rubber ≥14 mils, neoprene rubber ≥ 14 mils, polyvinyl chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils, and
- Chemical resistant footwear plus socks; protective eyewear (goggles, face shield or safety glasses).

# IMPORTANT CROP SAFETY INFORMATION READ BEFORE USING LPI Glufosinate 280

LPI Glufosinate 280 may be applied as a **burndown treatment prior to planting or prior to emergence** of any conventional or transgenic variety of canola, sweet corn\*, corn, cotton, olive, rice\*, soybean or sugar beet.

\*Not for use in California.

**Post emergence row crop applications** of LPI Glufosinate 280 may be made only to crops tolerant to the active ingredient in LPI Glufosinate 280. Loveland Products, Inc. does not warrant the use of LPI Glufosinate 280 on crops other than those designated as LibertyLink to safely withstand the application of LPI Glufosinate 280.

The basis of selectivity of LPI Glufosinate 280 in crops is the presence of a gene in LibertyLink crops which results in a plant that is tolerant to the active ingredient of LPI Glufosinate 280. Crops not containing this gene will not be tolerant to LPI Glufosinate 280 and severe crop injury and/or death may occur. Do not allow spray to contact foliage or green tissue of desirable vegetation other than crops tolerant to the active ingredient in LPI Glufosinate 280.

LPI Glufosinate 280 may be applied to conventional or other transgenic cotton not tolerant to the active ingredient in LPI Glufosinate 280 using a hooded sprayer.

**Applications to trees, vines, and berries** should avoid contact of LPI Glufosinate 280 solution, spray, drift or mist with green bark, stems, or foliage, as injury may occur to trees, berries, and vines. Only trunks with callused, mature brown bark should be sprayed unless protected from spray contact by nonporous wraps, grow tubes, or waxed containers. Contact of LPI Glufosinate 280 with parts of trees, berries, or vines other than mature brown bark can result in serious damage.

# PRODUCT INFORMATION

LPI Glufosinate 280 is a water-soluble herbicide for application as a foliar spray for the control of a broad spectrum of emerged annual and perennial grass and broadleaf weeds in LibertyLink canola, LibertyLink corn, LibertyLink cotton, and LibertyLink soybean, and in trees, vines, and berries. LPI Glufosinate 280 may be applied for potato vine desiccation. LPI Glufosinate 280 may also be applied as a broadcast burndown application before planting or prior to emergence of any conventional or transgenic variety of canola, sweet corn\*, corn, cotton, olive, rice\*, soybean, or sugar beet.

\*Not for use in California.

LPI Glufosinate 280 is only foliar-active with little or no activity in soil. Weeds that emerge after application will not be controlled. Apply LPI Glufosinate 280 to actively growing weeds as described in the Weed Control Recommendations for Row Crops section to get maximum weed control. Uniform, thorough spray coverage is necessary to achieve consistent weed control. Necrosis of leaves and young shoots occur within 2 to 4 days after application under good growing conditions.

- LPI Glufosinate 280 is rainfast 4 hours after application to most weed species; therefore, rainfall within 4 hours may necessitate retreatment or may result in reduced weed control.
- Applications should be made between dawn and 2 hours before sunset to avoid the possibility of reduced lambsquarters and velvetleaf control.
- Consult your local Cooperative Extension Service or Loveland Products, Inc. representative for guidelines on the optimum application timing for LPI Glufosinate 280 in your region.
- Weed control may be reduced if application is made when heavy dew, fog, and mist/rain are present; or when weeds are under stress due to environmental conditions such as drought, cool temperatures, or extended periods of cloudiness.
- To maximize weed control, do not cultivate from 5 days before an application to 7 days after an application.

# ROTATIONAL CROP RESTRICTIONS\*

Rotational crop planting intervals following application of LPI Glufosinate 280 are listed below. Failure to comply with these restrictions may result in illegal residues in rotated crops.

Rotational Crop	Plant Back Interval (Minimum Rotational Crop Planting Interval from Last Application)	
Canola, Sweet Corn, Corn, Cotton, Rice,	May be planted at any time	
Soybeans, and Sugar beets		
Root and Tuber Vegetables, Leafy Vegetables,	70 days	
Brassica Leafy Vegetables and Small Grains		
(Barley, Buckwheat, Oats, Rye, Teosinte, Triticale,		
and Wheat)		
All other crops	180 days	

<sup>\*</sup>See Application Directions for Potato Vine Desiccation for Rotational Crop Restrictions specifically after application of LPI Glufosinate 280 to potatoes.

# **Integrated Weed Management**

The active ingredient in LPI Glufosinate 280 is glufosinate-ammonium, which is a glutamine synthetase inhibitor (Group 10). Integrated weed management guidelines promote an economically viable, environmentally sustainable, and socially acceptable weed control program regardless of the herbicide(s) used. The highlights of successful integrated weed management include:

- 1. Correctly identify weeds and look for trouble areas within field to identify resistance indicators.
- 2. Rotate crops.
- 3. Start the growing season with clean fields.
- 4. Rotate herbicide modes of action by using multiple modes of action during the growing season and apply no more than 2 applications of a single herbicide mode of action to the same field in a 2-year period. One method to accomplish this is to rotate herbicide tolerant trait systems.
- 5. Apply listed rates of herbicides to actively growing weeds at the correct time with the right application techniques.
- 6. Control any weeds that may have escaped the herbicide application.
- 7. Thoroughly clean field equipment between fields.

Contact your local agronomic advisor for more specific information on integrated weed management for your area.

#### WEED CONTROL FOR ROW CROPS

Rates in fluid ounce of formulated product per acre for the control of weeds at selected heights are shown in the weed control tables. In weed populations with mixed species, apply at a rate needed for the species that requires the highest rate.

#### Broadleaf Weed Control

	Maximum Weed H	eight or Diameter (inches)	
Weed Species	22.0 FI Oz/A	29.0 FI Oz/Aab	
Amaranth, Palmer <sup>2</sup>	NR	4"	
Anoda, spurred	3"	5"	
Beggarweed, Florida	4"	5"	
Black medic	5"	7"	
Blueweed, Texas	5"	7"	
Buckwheat, wild	6"	7"	
Buffalobur	6"	7"	
Burcucumber	6"	10"	
Catchweed bedstraw (cleavers)	2"	4"	
Carpetweed	4"	6"	
Chickweed, common	6"	8"	
Cocklebur, common	6"	14"	
Copperleaf, hophornbeam	4"	6"	
Cotton, volunteer <sup>1</sup>	6"	8"	
Croton, tropic	3"	5"	
Croton, wooly	2"	4"	
Eclipta	4"	6"	
Devil's claw	2"	4"	
Fleabane, annual	6"	8"	
Ganlinsoga, hairy	6"	8"	
Galinsoga, small flower	6"	7"	
Groundcherry, cutleaf	4"	5"	
Geranium, cutleaf	4"	6"	
Hempnettle	4"	6"	

# Broadleaf Weed Control cont'd.:

	Maximum Weed H	eight or Diameter (inches)
Weed Species	22.0 FI Oz/A	29.0 FI Oz/Aab
Horsnettle, Carolina <sup>3</sup>	2"	4"
Jimsonweed	6"	10"
Knotweed	3"	5"
Kochia <sup>2</sup>	4"	6"
Ladysthumb	6"	14"
Lambsquarters, common <sup>2</sup>	4"	6"
Mallow, common	4"	6"
Mallow, Venice	6"	8"
Marestail	S	6 to 12"
Marshelder, annual	4"	6"
Morningglory, entireleaf <sup>2</sup>	6"	8"
Morningglory, lvyleaf <sup>2</sup>	6"	8"
Morningglory, pitted <sup>2</sup>	6"	8"
Morningglory, sharppod <sup>2</sup>	2"	4"
Morningglory,smallflower <sup>2</sup>	4"	6"
Morningglory, tall <sup>2</sup>	6"	8"
Mustard, wild	4"	6"
Nightshade, black	4"	6"
Nightshade, eastern black	6"	8"
Nightshade, hairy	6"	8"
Pennycress (stinkweed)	4"	6"
Pigweed,redroot <sup>2</sup>	3"	4"
Pigweed, prostrate <sup>2</sup>	3"	4"
Pigweed, spiny <sup>2</sup>	3"	4"
Pigweed, smooth <sup>2</sup>	3"	4"
Pigweed, tumble <sup>2</sup>	3"	4"
Puncturevine	4"	6"
Purslane, common	2"	4"
Pusley, Florida	S	3"
Ragweed, common	6"	10"
Ragweed, giant	6"	12"
Senna coffee	4"	6"
Sesbania, hemp	6"	8"
Sheperd's-purse	6"	8"
Sicklepod (java bean)	4"	6"
Sida, prickly	4"	5"
Smartweed, Pennsylvania	6"	14"
Smellmelon	4"	6"
Sowthistle, annual	6"	8"
Soybeans, Volunteer <sup>1</sup>	6"	8"
Spurge, prostrate	2"	4"
Spurge, spotted	2"	4"
Starbur, bristly	4"	6"
Sunflower, common	6"	14"
Sunflower, prairie	3"	5"
Sunflower, volunteer	6"	10"
Thistle, Russian <sup>3</sup>	S	6 to 12"
<u>Velvetleaf<sup>2</sup></u>	3"	4"
Waterhemp, common <sup>2</sup>	NR	5"
Waterhemp, tall <sup>2</sup>	NR	5"

<sup>&</sup>lt;sup>a</sup> In cotton, LPI Glufosinate 280 may be applied at 29.0 fluid ounces per acre 3 times per season.

NR not recommended

b Do not apply more than 22.0 fluid ounces per acre of LPI Glufosinate 280 post emergence in a single application to canola and corn. S Indicates suppression

<sup>&</sup>lt;sup>1</sup> Volunteer LibertyLink crops from the previous season will not be controlled.

<sup>&</sup>lt;sup>2</sup> For applications to corn, tank mixing with atrazine may enhance weed control of this species. <sup>3</sup> May require sequential applications for control.

# **Grass Weed Control**

	Maximum Weed H	eight or Diameter (inches)
Weed Species	22.0 FI Oz/A	29.0 FI Oz/A <sup>ab</sup>
Barley, volunteer <sup>3</sup>	3"	4"
Barnyardgrass	3"	5"
Bluegrass, annual	3"	5"
Corn, volunteer <sup>1</sup>	10"	12"
Crabgrass, large <sup>2</sup>	3"	5"
Crabgrass, smooth <sup>2</sup>	3"	5"
Cupgrass, woolly	6"	1"
Foxtail, bristly	6"	8"
Foxtail, giant	6"	12"
Foxtail, green	6"	12"
Foxtail, robust purple	6"	8"
Foxtail, yellow <sup>2</sup>	3"	4"
Goosegrass <sup>3</sup>	2"	3"
Johnsongrass, seedling	3"	5"
Junglerice	3"	5"
Millet, wild-proso	6"	7"
Millet, proso volunteer	6"	7"
Oat, wild <sup>2</sup>	3"	4"
Panicum, fall	3"	5"
Panicum, Texas	4"	6"
Rice, red	4"	6"
Rice, volunteer <sup>1</sup>	4"	6"
Sandbur, field <sup>2</sup>	S	2"
Shattercane	6"	8"
Signalgrass, broadleaf	3"	5"
Sprangletop	4"	6"
Sorghum, volunteer	6"	8"
Stinkgrass	4"	6"
Wheat, volunteer <sup>2</sup>	4"	5"
Witchgrass	4"	6"

<sup>&</sup>lt;sup>a</sup> In cotton, LPI Glufosinate 280 may be applied at 29.0 fluid ounces per acre 3 times per season.

#### Biennial and Perennial Weeds\*\*

For control of the biennial and perennial weeds listed below, tank mix partners or sequential applications of LPI Glufosinate 280 are recommended (22.0 fluid ounces per acre followed by 22.0 fluid ounces per acre).

Alfalfa	Bursage, woolyleaf	Milkweed, common*	Quackgrass*
Artichoke, Jerusalem	Chickweed, Mouse-ear	Milkweed, honeyvine*	Sowthistle, perennial
Bermudagrass	Clover, Alsike	Muhly, wirestem*	Thistle, bull
Bindweed, field	Clover, red	Nightshade, silverleaf	Thistle, Canada
Bindweed, hedge	Dandelion	Nutsedge, purple*	Timothy*
Bluegrass, Kentucky	Dock, smooth	Nutsedge, yellow*	Wormwood, biennial
Blueweed, Texas	Dogbane, hemp*	Orchardgrass	
Bromegrass, smooth	Goldenrod, gray*	Poinsettia, wild	

<sup>\*</sup> Suppression Only

Burdock

Johnsongrass, rhizome

Pokeweed

b Do not apply more than 22.0 fluid ounces per acre of LPI Glufosinate 280 post emergence in a single application to canola and corn.

S Indicates suppression

<sup>&</sup>lt;sup>1</sup> Volunteer LibertyLink crops from the previous season will not be controlled. A timely cultivation 7 to 10 days after an application and/or retreatment 10 to 21 days after the first application is recommended for controlling dense clumps of volunteer corn or rice.

<sup>&</sup>lt;sup>2</sup> For best control of yellow foxtail, field sandbur, crabgrass, and wild oats, treat prior to tiller initiation.

<sup>&</sup>lt;sup>3</sup> A sequential application may be necessary for control.

<sup>\*\*</sup> See the Application for Use on Cotton section of this label for additional use rates.

# APPLICATION AND MIXING PROCEDURES

Do not use flood jet nozzles, controlled droplet application equipment, or air-assisted spray equipment. Uniform, thorough spray coverage is important to achieve consistent weed control.

**Ground Application:** Refer to the *Rate Tables* for proper application rates. **DO NOT** apply when winds are gusty, or when conditions will favor movement of spray particles off the desired spray target. To avoid drift and insure consistent weed control, apply LPI Glufosinate 280 with the spray boom as low as possible while maintaining a uniform spray pattern. LPI Glufosinate 280 should be applied broadcast in a minimum of 10.0 gallons of water per acre using minimum spray pressure of 40 psi and a maximum ground speed of 10 mph. The use of 80° or 110° flat fan nozzles is highly recommended for optimum spray coverage and canopy penetration. Application of the spray at a 45° angle forward will result in better spray coverage. **Under dense weed/crop canopies**, **a broadcast rate of 15.0 to 20.0 gallons of water per acre should be used so that thorough spray coverage will be obtained. <b>DO NOT** use raindrop nozzles. Boom height should be based on nozzle manufacturer recommendations. See the *Spray Drift Management* section of this label for additional information on proper application of LPI Glufosinate 280.

**Aerial Application:** Poor coverage will result in reduced weed control. For optimal weed control, apply LPI Glufosinate 280 in a minimum of 10.0 gallons per acre. Apply LPI Glufosinate 280 using nozzles and pressures that generate medium (about 300 to 400 microns) spray droplets category as reported by the nozzle manufacturer and in accordance to ASABE S 572 based upon the selected air speed. Do not use nozzles and pressures that result in coarse sprays. Fine sprays should also be avoided to minimize spray drift risk. See the *Spray Drift Management* section of this label for additional information on proper application of LPI Glufosinate 280.

### **Compatibility Testing**

If LPI Glufosinate 280 is to be mixed with pesticide products not listed on this label, test the compatibility of the intended tank mixture prior to mixing the products in the spray tank. The following procedure assumes a spray volume of 25.0 gallons per acre. For other spray volumes, adjust the amount of the water used accordingly. Check compatibility as follows:

- 1. Place 1.0 pint of water from the source that will be used to prepare the spray solution in a clear 1.0 quart jar.
- 2. For each pound of a dry tank mix partner to be applied per acre, add 1.5 teaspoons to the jar.
- 3. For each 16.0 fluid ounces of a liquid tank mix partner to be applied per acre, add 0.5 teaspoon to the jar.
- 4. For each 16.0 fluid ounces of LPI Glufosinate 280 to be applied per acre, add 0.5 teaspoon to the jar.
- 5. After adding all the ingredients, place a lid on the jar and tighten. Invert 10 times to mix.
- 6. Let the mixture stand for 15 minutes, and evaluate the solution for uniformity and stability. Look for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of incompatibility. If the tank mix partners are not compatible, do not use the mixture in a spray tank.
- 7. After compatibility testing is complete, dispose of any pesticide wastes in accordance with the *Storage and Disposal* section of this label.

# MIXING INSTRUCTIONS

**Tank Mix Instructions:** LPI Glufosinate 280 may be applied in tank mix combinations with labeled rates of other products provided these other products are labeled for the timing and method of application for the crop to be treated. The tank mix partner must be used in accordance with the label limitations and precautions. No label dosage rates may be exceeded. LPI Glufosinate 280 cannot be mixed with any product containing a label prohibition against such mixing. Refer to the specific crop section for rates and other restrictions. LPI Glufosinate 280 must be applied with properly calibrated and clean equipment. LPI Glufosinate 280 is formulated to mix readily in water.

Prior to adding LPI Glufosinate 280 to the spray tank, ensure that the spray tank is thoroughly clean, particularly if an herbicide with the potential to injure crops was previously used (see *Cleaning Instructions*).

Mix LPI Glufosinate 280 with water to make a finished spray solution as follows:

- 1. Fill the spray tank half full with water.
- 2. Start agitation.
- 3. If mixing with a flowable/wettable powder tank mix partner, prepare a slurry of the proper amount of the product in a small amount of water. Add the slurry to the spray tank.
- 4. Add the appropriate amount of ammonium sulfate (AMS) to the spray tank.
- 5. If mixing with a liquid tank mix partner, add the liquid mix partner next.
- 6. Complete filling the spray tank with water.
- 7. Add the proper amount of LPI Glufosinate 280 and continue agitation.
- 8. If foaming occurs, use a silicone-based antifoam agent.

Ensure that all spray system lines including pipes, booms, etc. have the correct concentration of spray solution by flushing out the spray system lines before starting the crop application.

If tank mix partners recommended on this label are added, maintain good agitation at all times until contents of the tank are sprayed. If the spray mixture is allowed to settle, thorough agitation is required to resuspend the mixture before spraying is resumed. Keep bypass line on or near bottom of tank to minimize foaming. Screen size in nozzles or line strainers must be 50 mesh or larger.

#### Cleaning Instructions

Before using LPI Glufosinate 280, thoroughly clean bulk storage tank, refillable tank, nurse tanks, spray tank, lines, and filter, particularly if an herbicide with the potential to injure crops was previously used. Equipment should be thoroughly rinsed using a commercial tank cleaner.

After using LPI Glufosinate 280, triple rinse the spray equipment and clean with a commercial tank cleaner before using for crops not labeled LibertyLink. Make sure any rinsate or foam is thoroughly removed from spray tank and boom. Rinsate may be disposed following the pesticide disposal directions on this label.

# SPRAY DRIFT MANGEMENT

Spray drift may result in injury to non-target crops or vegetation. To avoid spray drift, do not apply when wind speed is greater than 10 MPH or during periods of temperature inversions. Do not apply when weather conditions, wind speed or wind direction may cause spray drift to non target areas. AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR.

- All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers.
- For all non-aerial applications, wind speed must be measured adjacent to the application site, on the upwind side, immediately prior to application.

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

Do not apply under circumstances where possible drift to unprotected persons or to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale use, or consumption can occur.

**Aerial Drift Management:** The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops.

- 1. The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
- 2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45°.

Where states have more stringent regulations, they should be observed. The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory Information.

# **Aerial Drift Reduction Advisory Information**

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

# **Controlling Droplet Size:**

- Volume- Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure-** Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles- Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation- Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type- Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.
- **Boom Length-** For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.
- **Application Height-** Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

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

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

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

**Temperature Inversions:** Do not make aerial or ground applications into areas of temperature inversions. 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 concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

# APPLICATION DIRECTIONS FOR BURNDOWN USE

LPI Glufosinate 280 may be applied as a **burndown treatment prior to planting or prior to emergence** of any conventional or transgenic variety of canola, corn, cotton, rice\*, soybean or sugar beet. Apply a minimum of 29.0 fluid ounces per acre of LPI Glufosinate 280 for burndown of existing weeds just prior to planting or prior to emergence of canola, corn, cotton, rice\*, soybean, or sugar beets. For best results, apply to emerged, young, actively growing weeds. Warm temperatures, high humidity, and bright sunlight improve the performance of LPI Glufosinate 280.

\*Not for use in California.

Weed control may be reduced when applications are made to weeds under stress due to drought or cool temperatures.

- In cotton, if environmental conditions prevent timely applications, a single application may be made of up to 43.0 fluid ounces per acre of LPI Glufosinate 280. If more than 29.0 fluid ounces per acre are used in any single application, the season total may not exceed 72.0 fluid ounces per acre, including all application timings.
- In soybean, if environmental conditions prevent timely applications, a single application may be made of up to 36.0 fluid ounces per acre of LPI Glufosinate 280. If 29.0 to 36.0 fluid ounces per acre are used in a single burndown application, 1 additional in-season application may be made at up to 29.0 fluid ounces per acre. The season total may not exceed 65.0 fluid ounces per acre, including all application timings.
- In **canola**, **corn**, **rice**\*, **and sugar beets**, if environmental conditions prevent timely applications, a single application may be made of up to 36.0 fluid ounces per acre of LPI Glufosinate 280. No additional applications of LPI Glufosinate 280 may be made post emergence to the crop during the growing season.
- In **rice**\*, following a burndown application, there must be a minimum 7-day holding period after flooding of the field.

<sup>\*</sup>Not for use in California.

		In-Season Applications	
	Burndown	(LibertyLink Varieties only)	Season Max
Cotton Use Pattern 1	29.0 fl oz/A	2 applications at 22.0 to 29.0 fl oz/A*	87.0 fl oz/A
Cotton Use Pattern 2	30.0 to 43.0 fl oz/A	1 application at 22.0 to 29.0 fl oz/A*	72.0 fl oz/A
Soybean Use Pattern	29.0 to 36.0 fl oz/A	1 application at 22.0 to 29.0 fl oz/A**	65.0 fl oz/A
Canola, Corn,	29.0 to 36.0 fl oz/A	None	36.0 fl oz/A
Rice (Not for use in California.),			
Sugar beets			

<sup>\*</sup>Libertylink cotton OR with hooded sprayer for non-Libertylink varieties (see *Cotton* use directions).

# APPLICATION DIRECTIONS FOR USE ON SUGAR BEETS

(Not for use in California.)

**THOROUGH SPRAY COVERAGE IS VERY IMPORTANT:** LPI Glufosinate 280 works best when weeds are actively growing. A cultivation may be made at least 5 days before LPI Glufosinate 280 application or 5 days after LPI Glufosinate 280 application.

**Application Timing** 

Applications of LPI Glufosinate 280 on sugar beets may be made from the cotyledon stage up to the 10-leaf stage of the sugar beet. LPI Glufosinate 280 is a foliar-active material with no soil-residual activity. For best results, apply to emerged, young actively growing weeds. Weeds that emerge after application will not be controlled. LPI Glufosinate 280 will have an effect on weeds that are larger than the recommended leaf stage, however speed of activity and control may be reduced. Weed control may be reduced if application is made when heavy dew, fog, and mist/rain are present; or when weeds are under stress due to drought, cool temperatures, or extended periods

<sup>\*\*</sup> Libertylink soybeans only (see Soybean use directions).

of cloudiness. LPI Glufosinate 280 is rainfast 4 hours after application, therefore, rainfall within 4 hours may necessitate retreatment. For best weed control and sugar beet yield, LPI Glufosinate 280's application should begin when weeds are up to 1 inch in height or diameter. Repeat applications should be made when newly germinated weeds again reach 1 inch in height or diameter. Refer to the *Rate Tables for Weed Control In Sugar Beets* for selection of the proper rate dependent upon the weed species present and size. A repeat application of LPI Glufosinate 280 or a tank mix application with a residual herbicide selected from the tank mix partners listed on this label will be needed to control weeds that have not yet emerged at the time of application.

# Restrictions to the Directions For Use on Sugar Beets

- 1. **DO NOT** apply more than 30.0 ounces per acre of LPI Glufosinate 280 in 1 application and **DO NOT** apply more than 60.0 fluid ounces per acre of LPI Glufosinate 280 on the sugar beet crop per growing season.
- 2. **DO NOT** apply LPI Glufosinate 280 within 60 days of harvesting sugar beets.
- 3. **DO NOT** plant rotation crops in a field treated with LPI Glufosinate 280 within 120 days after the last application of LPI Glufosinate 280 with the exception of wheat, barley, buckwheat, millet, oats, rye, sorghum, and triticale which may be planted 70 days after the last application of LPI Glufosinate
  - 280. Corn, soybeans, canola, and sugar beets tolerant to the active ingredient of LPI Glufosinate 280 may be planted at any time.
- 4. **DO NOT** graze the treated crop or cut for hay.
- 5. **DO NOT** add surfactants. Anti-foams or drift control agents may be added if needed.
- 6. **DO NOT** apply LPI Glufosinate 280 if sugar beets show injury from prior herbicide applications or environmental stress (drought, excessive rainfall, etc.).
- 7. **DO NOT** apply LPI Glufosinate 280 through any type of irrigation system.

# RATE TABLES FOR WEED CONTROL IN SUGAR BEETS

(Not for use in California.)

The rate of LPI Glufosinate 280 in fluid ounces (pints) of formulated product per acre to be used for the control of weeds at selected heights are shown in the following tables. In weed populations with mixed species, apply the rate needed for all species present.

#### Grass Weeds Controlled with LPI Glufosinate 280

diass weeds contioned			
		ge of Weed*	
	(Maximum	Height)	
	15.0 FI Oz/A	20.0 FI Oz/A	Comments on Weed Growth Stage/
Weed Species	(0.9 Pt/A)	(1.25 Pt/A)	Application Timing/Number of Applications
Barley, volunteer	1- to 2-leaf (2")	3-leaf (3")	Multiple applications may be required
Barnyardgrass	1- to 3-leaf (2")	4- to 5-leaf (3")	Maximum of 1 tiller
Corn, volunteer	1- to 2-leaf (3")	3- to 4-leaf (6")	
Crabgrass, large	1- to 3-leaf (2")	4- to 5-leaf (3")	Maximum of 1 tiller
Crabgrass, smooth	1- to 3-leaf (2")	4- to 5-leaf (3")	Maximum of 1 tilter
Cupgrass, woolly	1- to 5-leaf (4")	(8")	
Foxtail, giant	1- to 4-leaf (3")	5- to 6-leaf (4")	Maximum of 2 tillers
Foxtail, green	1- to 4-leaf (3")	5- to 6-leaf (4")	Maximum of 2 tillers
Foxtail, yellow	1- to 3-leaf (1")	4-leaf (2")	Apply prior to tillering
Millet, volunteer proso	1- to 3-leaf (2")	4- to 5-leaf (3")	Maximum of 1 tiller
Millet, wild proso	1- to 3-leaf (2")	4- to 5-leaf (3")	Maximum of 1 tiller
Oat, wild	1- to 2-leaf (2")	3-leaf (3")	Maximum of 1 tiller
Panicum, fall	1- to 3-leaf (2")	4- to 5-leaf (3")	Maximum of 1 tiller
Panicum, Texas	1- to 3-leaf (2")	4- to 5-leaf (3")	Maximum of 1 tiller
Sandbur field		1- to 4-leaf (2")	Apply prior to tillering
Wheat volunteer	1- to 2-leaf (2")	3-leaf (3")	Maximum of 1 tiller

<sup>\*</sup>Apply up to 30.0 fluid ounces per acre (1.88 pints per acre) if weeds exceed the growth stage shown in the table.

For improved control of heavy populations or larger than recommended volunteer wheat, volunteer barley, yellow foxtail, and wild oats, LPI Glufosinate 280 can be tank mixed with Assure® II herbicide, Poast® herbicide, Intensity® One herbicide or Intensity herbicide.

Perennial Weeds Controlled by LPI Glufosinate 280

i oroninar woodo controllou by Er i charocinato Eco			
	Growth Sta	ge of Weed*	
	(Maximum Height/Diameter)		
	15.0 FI Oz/A	20.0 FI Oz/A	
Weed Species	(0.9 Pt/A)	(1.25 Pt/A)	Comments on Number of Applications
Quackgrass		1- to 3-leaf (3")	Multiple applications required
Sowthistle, perennial		1- to 4-leaf (3")	Multiple applications required
Thistle, Canada		1- to 4-leaf (3")	Multiple applications required

<sup>\*</sup>Apply up to 30.0 fluid ounces per acre (1.88 pints per acre) if weeds exceed the growth stage shown in the table.

**Broadleaf Weeds Controlled by LPI Glufosinate 280** 

Diddiddi Woodo oomionoa by El	Growth Stage of Weed*			
		Diameter)		
	15.0 FI Oz/A	20.0 FI Oz/A		
Weed Species	(0.9 Pt/A)	(1.25 Pt/A)		
Buckwheat, wild	1- to 4-leaf (2")	5- to 6-leaf (3")		
Buffalobur	1- to 4-leaf (2")	5- to 6-leaf (3")		
Carpetweed	-	1- to 4-leaf (2")		
Chickweed, common	1- to 4-leaf (2")	5- to 6-leaf (3")		
Cocklebur, common	1- to 6-leaf (3")	7- to 8-leaf (5")		
Kochia	(1")	(2")		
<u>Ladysthumb</u>	1- to 2-leaf (1")	3- to 4-leaf (3")		
Lambsquarter, common	1- to 2-leaf (1")	4- to 5-leaf (3")		
Mallow, Venice	1- to 4-leaf (2")	5- to 6-leaf (3")		
<u>Marshelder</u>	1- to 2-leaf (1")	3- to 4-leaf (2")		
Mustard, wild	1- to 4-leaf (2")	5- to 6-leaf (3")		
Nightshade, eastern black	1- to 4-leaf (2")	5- to 6-leaf (3")		
Pigweed, prostrate	(1")	(3")		
Pigweed, redroot	1- to 2-leaf (1")	3- to 4-leaf (3")		
Pigweed, smooth	1- to 2-leaf (1")	3- to 4-leaf (3")		
Pigweed, spiny	1- to 2-leaf (1")	3- to 4-leaf (3")		
Purslane, common	(1")	(2")		
Ragweed, common	1- to 6-leaf (3")	7- to 8-leaf (5")		
Ragweed, giant	1- to 4-leaf (2")	5- to 6-leaf (3")		
Sheperd's purse	1- to 4-leaf (2")	5- to 6-leaf (3")		
Smartweed, Pennsylvania	1- to 2-leaf (1")	3- to 4-leaf (3")		
Sowthistle, annual	1- to 4-leaf (2")	5- to 6-leaf (3")		
Sunflower common	1- to 6-leaf (3")	7- to 8-leaf (5")		
Thistle Russian	(1")	(2")		
Velvetleaf	1- to 2-leaf (1")	3- to 4-leaf (3")		

<sup>\*</sup>Apply up to 30.0 fluid ounces per acre (1.88 pints per acre) if weeds exceed the growth stage shown in the table.

#### APPLICATION DIRECTIONS FOR USE ON CANOLA

Apply LPI Glufosinate 280 only to canola labeled as Libertylink. Uniform, thorough spray coverage is necessary to achieve consistent weed control.

#### **Application Rate and Timing**

For best results, apply to emerged, young, actively growing weeds: Warm temperatures, high humidity, and bright sunlight improve the performance of LPI Glufosinate 280. Weed control may be reduced when applications are made to weeds under stress due to drought or cool temperatures. For optimal yield, early season weed removal is important.

Applications of LPI Glufosinate 280 on canola may be made from the cotyledon stage up to the early bolting stage of the canola. Slight discoloration of the canola may be visible after application. This effect is temporary and will not influence crop growth, maturity, or yield.

Apply LPI Glufosinate 280 at 22.0 fluid ounces per acre per application. A second application of LPI Glufosinate 280 may be needed to control weeds that have not yet emerged at the time of application.

# Restrictions to the Directions For Use on Canola

- DO NOT use on canola in the states of Alabama, Delaware, Georgia, Kentucky, Maryland, New Jersey, North Carolina, South Carolina, Tennessee, Virginia and West Virginia.
- DO NOT apply more than 2 applications of LPI Glufosinate 280 per growing season. Sequential applications should be at least 10 days apart.
- **DO NOT** apply LPI Glufosinate 280 within 65 days of harvesting canola.
- DO NOT apply more than 44.0 fluid ounces per acre of LPI Glufosinate 280 per growing season.
- If LPI Glufosinate 280 was used in a burndown application, no post emergence applications may be applied to the crop.
- **DO NOT** graze the treated crop or cut for hav.
- DO NOT apply LPI Glufosinate 280 if canola shows injury from prior herbicide applications or environmental stress (drought, excessive rainfall, etc.).
- **DO NOT** apply LPI Glufosinate 280 through any type of irrigation system.
- Refer to the *Rotational Crop Restrictions* section under the *Information* heading of this label for the appropriate rotational crop plant back intervals.

# **Spray Additives**

LPI Glufosinate 280 must be applied with ammonium sulfate (AMS). Use only fine feed grade or spray grade AMS at 3.0 pounds per acre. Anti-foams or drift control agents may be added if needed. Use of additional surfactants or crop oils may increase risk of crop response.

#### **Canola Tank Mix Instructions**

LPI Glufosinate 280 at 22.0 fluid ounces per acre plus AMS may be used in tank-mix combination with certain herbicides for improved control of larger than labeled grasses. LPI Glufosinate 280 may be applied in tank mix combinations with labeled rates of other products provided these other products are labeled for the timing and method of application for the canola to be treated. The tank mix partner must be used in accordance with the label limitations and precautions. No label dosage rates may be exceeded. LPI Glufosinate 280 cannot be mixed with any product containing a label prohibition against such mixing. The AMS rate may be reduced to 1.5 pounds per acre when LPI Glufosinate 280 is tank mixed with a reduced rate of one of the grass herbicides specified below.

Tank Mix Partners for LPI Glufosinate 280 on Invigor LibertyLink Canola

Tank Mix Partner	Rate (FI Oz/A)
Assure II	4.0 to 5.0
Poast	6.0 to 8.0
Intensity	2.0 to 3.0
Intensity One	4.0 to 6.0

# APPLICATION RATE AND TIMING FOR CANOLA FOR TRANSGENIC SEED PROPAGATION

[Note to reviewer: The following text in [] is optional text and may appear on the final label [(Not for use in California)]
Up to 3 applications of LPI Glufosinate 280 at up to 22.0 fluid ounces per acre per application may be made to canola for transgenic seed propagation. Applications may be made from the cotyledon stage up to the early bolting stage (e.g., BBCH 18-30, between just prior to stem elongation/bolting, 8 or more leaves and beginning of stem elongation, no internodes).

# Restrictions to the Directions for Canola for Transgenic Seed Propagation

- DO NOT apply more than 3 applications of LPI Glufosinate 280 at up to 22.0 fluid ounces per acre per application per growing season.
- **DO NOT** apply more than 66.0 fluid ounces per acre of LPI Glufosinate 280 per growing season.
- DO NOT apply LPI Glufosinate 280 beyond the early bolting stage or within 65 days of harvesting canola seed.
- **DO NOT** use treated canola seed for food, feed or oil purposes.
- **DO NOT** apply LPI Glufosinate 280 if canola shows injury from prior herbicide applications or environmental stress (drought, excessive rainfall, etc.).
- DO NOT apply this product through any type of irrigation system.

# APPLICATION DIRECTIONS FOR USE ON SWEET CORN

(Not for use in California.)

# Apply LPI Glufosinate 280 only to corn labeled as LibertyLink.

# **Application Timing for Sweet Corn**

Applications for LPI Glufosinate 280 on sweet corn may be made from emergence until sweet corn is 24 inches tall or in the V-7 stage of growth, i.e., 7 developed collars, whichever comes first. Apply at a rate of 20.0 fluid ounces per acre. LPI Glufosinate 280 must be applied with ammonium sulfate (AMS) for use on sweet corn. Two applications of LPI Glufosinate 280 can be made to sweet com in a growing season.

# Restrictions to the Directions For Use on Sweet Corn

- DO NOT apply LPI Glufosinate 280 within 50 days of harvesting sweet corn ears and within 55 days of harvesting stover.
- DO NOT apply more than 40.0 fluid ounces per acre of LPI Glufosinate 280 on sweet corn per growing season.
- **DO NOT** apply more than 2 applications of LPI Glufosinate 280 to the sweet corn crop. Sequential applications should be at least 10 days apart.
- If LPI Glufosinate 280 was used in a burndown application, no post emergence applications may be applied to the crop.
- DO NOT use nitrogen solutions as spray carriers. A silicone-based antifoam agent may be added if needed.
- **DO NOT** apply LPI Glufosinate 280 if corn shows injury from prior herbicide applications or environmental stress (drought, excessive rainfall, etc.)
- **DO NOT** apply LPI Glufosinate 280 through any type of irrigation system.
- Refer to the *Rotational Crop Restrictions* section under the *Information* heading of this label for the appropriate rotational crop plant back intervals.

See Application Directions for Use on Field Corn and Silage Corn for Application Methods, Mixing Instructions, and Weed Control Tables.

#### Tank Mix Instructions for use on Sweet Corn:

LPI Glufosinate 280 may be tank mixed with Laudis® Herbicide, Callisto®, Atrazine, or Permit®. When using LPI Glufosinate 280 in tank mix combinations, carefully follow the *Directions for Use* labeling of the selected partner.

# APPLICATION DIRECTIONS FOR USE ON FIELD CORN AND SILAGE CORN

Apply LPI Glufosinate 280 only to corn labeled as LibertyLink. Uniform, thorough spray coverage is necessary to achieve consistent weed control.

#### **Application Rate and Timing**

For best results, apply to emerged, young, actively growing weeds. Warm temperatures, high humidity, and bright sunlight improve the performance of LPI Glufosinate 280. Weed control may be reduced when applications are made to weeds under stress due to drought or cool temperatures. For optimal yield, early season weed removal is important.

Applications of LPI Glufosinate 280 on corn may be made with over-the-top broadcast or drop nozzles from emergence until corn is 24 inches tall or in the V-7 stage of growth, i.e., 7 developed collars, whichever comes first. For corn 24 inches to 36 inches tall, only apply LPI Glufosinate 280 using ground application and drop nozzles and avoid spraying into the whorl or leaf axils of the corn stalks. Applications of LPI Glufosinate 280 following the use of soil-applied insecticides will not injure corn.

Apply LPI Glufosinate 280 at 22.0 fluid ounces per acre per application. A second application of LPI Glufosinate 280 or a tank mix application with a residual herbicide will be needed to control weeds that have not yet emerged at the time of application.

# Restrictions to the Directions For Use on Field Corn and Silage Corn

- **DO NOT** apply LPI Glufosinate 280 within 60 days of harvesting corn forage and within 70 days of harvesting corn grain and corn fodder.
- DO NOT apply more than 2 applications of LPI Glufosinate 280 to the crop. Sequential applications should be at least 10 days apart.
- DO NOT apply more than 44.0 fluid ounces per acre of LPI Glufosinate 280 on corn per growing season.
- If LPI Glufosinate 280 was used in a burndown application, no post emergence applications may be applied to the crop.
- DO NOT use nitrogen solutions as spray carriers. A silicone-based antifoam agent may be added if needed.
- **DO NOT** apply LPI Glufosinate 280 if corn shows injury from prior herbicide applications or environmental stress (drought, excessive rainfall, etc.)
- DO NOT apply LPI Glufosinate 280 through any type of irrigation system.
- Refer to the *Rotational Crop Restrictions* section under the *Information* heading of this label for the appropriate rotational crop plant back intervals.

# **Spray Additives**

For corn and sweet corn, LPI Glufosinate 280 must be applied with ammonium sulfate (AMS). It is recommended to use only fine feed grade or spray grade AMS at 3.0 pounds per acre (17.0 pounds per 100 gallons). When temperatures exceed 85 °F, the rate of AMS can be reduced to 1.5 pounds per acre (8.5 pounds per 100 gallons) to reduce potential leaf burn.

Use of additional surfactants or crop oils may increase risk of crop response.

#### **Corn Tank Mix Instructions**

Certain herbicide tank mixes may aid in the performance of LPI Glufosinate 280. No additional surfactant is needed with any tank mix partner. LPI Glufosinate 280 may be applied in tank mix combinations with labeled rates of other products provided these other products are labeled for the timing and method of application for the corn to be treated. The tank mix partner must be used in accordance with the label limitations and precautions. No label dosage rates may be exceeded. LPI Glufosinate 280 cannot be mixed with any product containing a label prohibition against such mixing.

#### Tank Mix Partners for LPI Glufosinate 280 on LibertyLink Corn:

2,4-D	Distinct®	metolachlor <sup>2</sup>	Slider® ATZ
acetochlor	Halex™ GT	nicosulfuron	<b>Spirit</b> ®
Aim® <sup>2</sup>	Hornet® WDG	NorthStar®	Status®
atrazine	Impact®	pendimethalin <sup>1</sup>	Yukon®
Callisto®	Laudis	Permit®	Zemax™
Camix® <sup>2</sup>	Lexar®²	Python® WDG	
Capreno®	LumaX® <sup>2</sup>	s-metolachlor <sup>2</sup>	

<sup>&</sup>lt;sup>1</sup>Tank mixing with pendimethalin may result in reduced control of barnyardgrass, fall panicum, field sandbur, yellow foxtail, and volunteer corn

#### Corn Insecticide Tank Mix Partners for LPI Glufosinate 280:

To provide weed and insect control in corn, LPI Glufosinate 280 may be mixed with the following insecticides:

Ambush® Insecticide Baythroid® XL Insecticide Pounce® 3.2 EC Insecticide Tombstone™ Helios® Asana® XL Insecticide Lorsban® 4E Insecticide Tombstone Warrior® Insecticide

<sup>&</sup>lt;sup>2</sup>It is recommended that these products are tank mixed at half the use rate with LPI Glufosinate 280 to reduce risk of crop response.

# APPLICATION DIRECTIONS FOR USE ON COTTON

Uniform, thorough spray coverage is necessary to achieve consistent weed control. LPI Glufosinate 280 may be applied as a broadcast, over-the-top, post-emergence spray or as a directed spray only to LibertyLink cotton. LPI Glufosinate 280 may be applied post-emergence to non-LibertyLink cotton varieties or cultivars by using equipment designed to minimize contact of the spray with the cotton foliage. See the Application Methods on Non-LibertyLink Cotton section for selection of shielding equipment. Severe plant injury or plant death may result if LPI Glufosinate 280 contacts the foliage or stems of cotton NOT labeled as LibertyLink.

#### **Application Rates and Timing**

For best results, apply to emerged, young, actively growing weeds. Warm temperatures, high humidity, and bright sunlight improve the performance of LPI Glufosinate 280. Weed control may be reduced when applications are made to weeds under stress due to drought or cool temperatures. For optimal yield, early season weed removal is important.

Apply LPI Glufosinate 280 to cotton from emergence up to the early bloom stage at 22.0 to 29.0 fluid ounces per acre. Should environmental conditions prevent a timely herbicide application, a single application of up to 43.0 fluid ounces per acre of LPI Glufosinate 280 may be made to cotton. If more than 29.0 fluid ounces per acre are used in any single application, the seasonal total may not exceed 72.0 fluid ounces per acre, including all application timings. See *Restrictions to the Directions for use on Cotton* below for additional information. Refer to the *Weed Control Table for Row Crops* section of this label for selection of the proper rate dependent upon weed species present and size. In weed populations with mixed species, select the highest rate required to control all the species. Volunteer LibertyLink crop plants (corn, rice, cotton, soybeans, sugar beets) from the previous season will not be controlled by applications of LPI Glufosinate 280. A repeat application of LPI Glufosinate 280 or tank mixes with a residual herbicide will be needed to control weeds that have not emerged at the time of application. See the *Tank Mix Instructions for Use on Cotton* to select suitable tank mix partners.

Use Pattern	1st Application	2nd Application	3rd Application	Season Maximum
Option 1	22.0 to 29.0 fl oz/A	22.0 to 29.0 fl oz/A	22.0 to 29.0 fl oz/A	87.0 fl oz/A
Option 2	30.0 to 43.0 fl oz/A	22.0 to 29.0 fl oz/A	None	72.0 fl oz/A

#### Restrictions to the Directions For Use on Cotton

- DO NOT apply LPI Glufosinate 280 to cotton in Florida, South of Tampa (Florida Route 60), or in Hawaii, except for test plots or breeding nurseries.
- **DO NOT** apply LPI Glufosinate 280 within 70 days prior to cotton harvest.
- Up to 3 applications of LPI Glufosinate 280 may be made to cotton per season at a maximum application rate of 29.0 fluid ounces per acre. **DO NOT** apply more than 87.0 fluid ounces (including all application timings) to cotton per season under this application scenario. Sequential applications should be at least 10 days apart.
- If environmental conditions prevent timely applications resulting in large weeds or heavy infestations, a single application of LPI Glufosinate 280 at up to 43.0 fluid ounces per acre may be made to cotton. **D0 N0T** apply more than 43.0 fluid ounces of LPI Glufosinate 280 in a single application under this use scenario. If a single application greater than 29.0 fluid ounces is made, a subsequent application not to exceed 29.0 fluid ounces may be made to cotton. The seasonal total use rate under this scenario may not exceed 72.0 fluid ounces of LPI Glufosinate 280. Sequential applications should be at least 10 days apart.
- **DO NOT** apply LPI Glufosinate 280 through any type of irrigation system.
- Refer to the *Rotational Crop Restrictions* section under the *Information* heading of this label for the appropriate rotational crop plant back intervals.

#### **Application Methods to LibertyLink Cotton**

Refer to the Weed Control Table for Row Crops to select the proper application rate based upon the weeds present and their size. Uniform and thorough spray coverage is required to achieve consistent weed control. For ground application, apply LPI Glufosinate 280 to LibertyLink cotton as an over-the-top foliar spray or as a spray directed to the lower one-third of the cotton stand.

# Application Methods to Non-LibertyLink Cotton

Application of LPI Glufosinate 280 to cotton varieties not labeled as LibertyLink requires the use of hooded spray equipment designed to minimize exposure of the spray to the cotton stand. A hooded sprayer directs the spray onto weeds, while shielding the cotton stand from contact. Use nozzles that provide uniform coverage within the treated area. Keep hoods on these sprayers adjusted to protect desirable vegetation. Extreme care must be exercised to avoid exposure of the desirable vegetation to the spray.

With a hooded sprayer, the spray pattern is completely enclosed on the top and all 4 sides by a hood, thereby shielding the crop from the spray solution. This equipment must be set up and operated in a manner that avoids bouncing or raising the hoods off the ground in any way. The spray hoods must be operated on the ground or skimming across the ground. Tractor speed must be adjusted to avoid bouncing of the spray hoods. Avoid operation on rough or sloping ground where the spray hoods might be raised off the ground. If the hoods are raised, spray particles may escape and come into contact with the cotton, causing damage or destruction of the crop.

Herbicide rates and spray volume instructions are presented as broadcast equivalents and must be reduced in proportion to the area actually treated. Use the following formulas to calculate the correct rate and volume per planted (field) acre:

Band width in inches Broadcast RATE per acre = Amount of banded product needed per acre Χ Row width in inches Band width in inches χ

Row width in inches

Broadcast spray VOLUME per acre = Banded spray volume needed per acre

#### **Post-Harvest**

LPI Glufosinate 280 may be applied as a post-harvest burndown treatment to fields (after cotton harvest). Up to 43.0 fluid ounces per acre of LPI Glufosinate 280 may be applied in a single application to control larger weeds growing in the crop at the time of harvest. If more than 29.0 fluid ounces per acre is used in a single application, the seasonal total may not exceed 72.0 fluid ounces per acre, including all application timings. Refer to the *Rotational Crop Restrictions* section of this label for appropriate rotational crop information.

#### **Cotton Tank Mix Instructions**

Certain tank mixes may aid in the performance of LPI Glufosinate 280. No additional surfactant is needed with any tank mix partner. LPI Glufosinate 280 may be applied in tank mix combinations with labeled rates of other products provided these other products are labeled for the timing and method of application for the cotton to be treated. The tank mix partner must be used in accordance with the label limitations and precautions. No label dosage rates may be exceeded. LPI Glufosinate 280 cannot be mixed with any product containing a label prohibition against such mixing.

LibertyLink Cotton: For cotton tolerant to LPI Glufosinate 280, Dual Magnum® or Staple® Herbicide may be tank-mixed with LPI Glufosinate 280 and applied over-the-top post-emergence to enhance weed control and/or provide residual control.

All Cotton Types: The following herbicides may be mixed with LPI Glufosinate 280 for hooded-spray application to enhance weed control and/or provide residual weed control:

# Postemergence Over-The-Top Tank Mix Partners for LPI Glufosinate 280 on LibertyLink Cotton

Fusilade® DX Assure II metolachlor Select Max® Poast Plus® clethodim **Fusion®** Staple

# APPLICATION DIRECTIONS FOR USE ON SOYBEANS

Apply LPI Glufosinate 280 only to soybeans designated as LibertyLink. Uniform, thorough spray coverage is necessary to achieve consistent weed control.

#### Application Rates and Timing

For best results, apply to emerged, young, actively growing weeds. Warm temperatures, high humidity, and bright sunlight improve the performance of LPI Glufosinate 280. Weed control may be reduced when applications are made to weeds under stress due to drought or cool temperatures. Adding ammonium sulfate with LPI Glufosinate 280 may improve weed control if weeds are under stress. For optimal vield, early season weed removal is important.

Applications of LPI Glufosinate 280 on soybeans may be made from emergence up to but not including the bloom growth stage.

Apply LPI Glufosinate 280 to LibertyLink soybeans from emergence up to but not including the bloom growth stage at 22.0 to 29.0 fluid ounces per acre. See weed chart to determine rate. Should environmental conditions prevent a timely herbicide application, a single application of up to 36.0 fluid ounces per acre of LPI Glufosinate 280 may be made to soybeans followed by one additional application at a maximum of 29.0 fluid ounces per acre with a seasonal maximum of 65.0 fluid ounces per acre. LPI Glufosinate 280 may be applied alone, or in a tank mix application with a residual herbicide to control weeds that have not yet emerged at the time of application.

Although timely post applications of LPI Glufosinate 280 can provide complete weed control, residual herbicides at burndown, planting, or tank mixed with LPI Glufosinate 280 help ensure optimal weed management, particularly if environmental conditions delay timely post applications. Residual herbicides can also reduce early season weed competition and are a key element of good weed resistance management practices.

	Use Pattern Rate Ranges	
1st Application	2nd Application	Season Maximum
22.0 to 36.0 fl oz/A	22.0 to 29.0 fl oz/A	65.0 fl oz/A

#### Restrictions to the Directions For Use on Soybeans

• **DO NOT** apply LPI Glufosinate 280 within 70 days of harvesting soybean seed.

- DO NOT apply more than 65.0 fluid ounces per acre of LPI Glufosinate 280 on soybeans per growing season.
- **DO NOT** apply more than 36.0 fluid ounces per acre of LPI Glufosinate 280 in a single application.
- DO NOT graze the treated crop or cut for hay.
- DO NOT use nitrogen solutions as spray carriers. A silicone-based antifoam agent may be added if needed.
- DO NOT apply LPI Glufosinate 280 if soybeans show injury from prior herbicide applications or environmental stress (drought, excessive rainfall, etc.).
- DO NOT apply LPI Glufosinate 280 through any type of irrigation system.
- Refer to the *Rotational Crop Restrictions* section under the *Information* heading of this label for the appropriate rotational crop plant back intervals.
- Sequential applications should be at least 5 days apart.

# **Soybean Tank Mix Instructions**

Certain herbicide tank mixes may complement LPI Glufosinate 280. No additional surfactant is needed with any tank mix partner. LPI Glufosinate 280 may be applied in tank mix combinations with labeled rates of other products provided these other products are labeled for the timing and method of application for the soybean to be treated. The tank mix partner must be used in accordance with the label limitations and precautions. No label dosage rates may be exceeded. LPI Glufosinate 280 cannot be mixed with any product containing a label prohibition against such mixing.

# Tank Mix Partners for LPI Glufosinate 280 in LibertyLink Soybeans

Assure II	Flexstar®	Phoenix™	Resource®
Classic®	Fusilade DX	Poast Plus	Select Max
clethodim	Fusion	Prefix®	Sharpen®
Cobra®	Harmony® GT	Pursuit®	Synchrony® XP
Fierce®	metolachlor	Raptor®	Ultra Blazer®
FirstRate®	Ontill®	RefleX®	

# APPLICATION DIRECTIONS FOR CANOLA, CORN, COTTON, AND SOYBEAN SEED PROPAGATION

LPI Glufosinate 280 may be applied to select out susceptible "segregates", i.e., canola, corn, cotton, and soybean plants that are not tolerant to glufosinate-ammonium during seed propagation.

- Canola: LPI Glufosinate 280 may also be used in canola seed propagation as a foliar spray to selectively eliminate canola plants that do not carry a gene that imparts tolerance to glufosinate-ammonium and as such, can be applied to remove susceptible segregates during canola seed propagation. Breeding material not possessing the glufosinate-ammonium tolerance gene will be severely injured or killed if treated with this herbicide. See *Application Use Directions for Use on Canola* for use rates and application timing.
- **Corn:** Inbred lines, plants not possessing glufosinate-ammonium tolerance, will be severely injured or killed if treated with this herbicide. A hooded sprayer may be used to protect plants from coming into contact with the herbicide application. For the selection of tolerant corn "segregates," LPI Glufosinate 280 may be applied at 22.0 fluid ounces per acre plus AMS at 3.0 pounds per acre (17.0 pounds per 100 gallons) when corn is in the V-3 to V-4 stage of growth, i.e., 3 to 4 developed collars. A second treatment of 22.0 fluid ounces per acre plus AMS at 3.0 pounds per acre may be applied when the corn is in the V-6 to V-7 stage of growth or up to 24 inches tall. Sequential applications should be at least 10 days apart. When temperatures exceed 85 °F, the rate of AMS can be reduced to 1.5 pounds per acre (8.5 pounds per 100 gallons) to reduce potential leaf burn.
- **Cotton:** LPI Glufosinate 280 may also be used in cottonseed propagation as a foliar spray to selectively eliminate cotton plants that do not carry a gene that imparts tolerance to glufosinate-ammonium and as such, can be applied to remove susceptible segregates during cottonseed propagation. Breeding material not possessing the glufosinate-ammonium tolerance gene will be severely injured or killed if treated with this herbicide. See *Application Use Directions for Use on Cotton* for use rates and application timing.
- **Soybeans:** For the selection of tolerant soybean "segregates," LPI Glufosinate 280 may be applied at up to 22.0 to 36.0 fluid ounces per acre when soybean is in the third trifoliate stage. A second treatment of 22.0 to 29.0 fluid ounces per acre may be applied up to but not including the bloom growth stage of soybean. Sequential applications should be at least 5 days apart.

# APPLICATION DIRECTIONS FOR USE ON LISTED TREE, VINE, AND BERRY CROPS

Apply this to the tree, vine, and berry crops listed below. Uniform, thorough spray coverage is necessary to achieve consistent weed control.

#### **Registered Crops**

Bushberries: blueberry, currant, elderberry, gooseberry, and huckleberry

Other Berries: lingonberry, juneberry, and salal

**Citrus:** lemon, orange, grapefruit, lime, mandarin, tangerine, tangelo, calamondin, kumquat, pummelo, citron, citrus hybrids, tangor, and cultivars, varieties and/or hybrids of these

Olives

Pome Fruit: apple, pear, crabapple, loquat, mayhaw, quince, azarole, medlar, tejocote, cultivars, varieties and/or hybrids of these

Stone Fruit: apricot, cherry, peach, nectarine, plum, capulin, jujube, sloe, and cultivars, varieties and/or hybrids of these

Tree Nuts: almonds, filberts, hickory nuts, macadamia nuts (bush nuts), pecans, pistachios, and walnuts

**Vineyards:** all grape varieties (table, wine, and raisins)

#### **Application Rate and Timing**

For best results, apply to emerged, young, actively growing weeds. Warm temperatures, high humidity, and bright sunlight improve the performance of LPI Glufosinate 280. Weed control may be reduced when applications are made to weeds under stress due to drought or cool temperatures. Weeds under stress or in dense populations will require application at the highest specified label use rate. Stressed conditions also include prior treatments of other contact or systemic herbicides. Do not retreat these weeds with LPI Glufosinate 280 until sufficient regrowth has occurred.

Apply LPI Glufosinate 280 as a directed spray to control undesirable vegetation in tree, vine, and berries listed on this label. Apply as a broadcast, banded, or spot treatment application depending on the situation to control weeds listed under the heading Weeds Controlled in Tree, Vine and Berry Crops. Avoid direct spray or drift to desirable vegetation. Regrowth may occur due to the weed stage of growth at application, low use rate, or environmental conditions. Repeat applications of LPI Glufosinate 280 may be necessary to control plants generating from underground parts or seed.

Avoid contact of LPI Glufosinate 280 solution, spray, drift or mist with green bark, stems, or foliage, as injury may occur to trees, vines, and berries. Only trunks with callused, mature brown bark should be sprayed unless protected from spray contact by nonporous wraps, grow tubes, or waxed containers. Contact of LPI Glufosinate 280 with parts of trees, vines, or berries other than mature brown bark can result in serious damage.

# **Application Methods for Broadcast Applications**

Apply LPI Glufosinate 280 at the rates listed below for broadcast applications based on weed size and stage of growth.

Weed Size and Stage	Product rate
Weeds < 3" in height	48.0 fl oz/A
Weeds < 6" in height	
pre-tiller grasses	56.0 fl oz/A
Weeds > 6" in height	
and/or grasses that have tillered	56.0 to 82.0 fl oz/A

# Application Methods for Banded Spray Applications

Banded applications may be used using the following formula to calculate the amount of herbicide needed for orchard or vineyard strip sprays:

Band width in inches Row width in inches

Eclipta

Filaree

Fiddleneck

Filaree, redstem

Χ

Rate per acre broadcast = Amount of herbicide needed for treatment

# **Application Methods for Spot or Directed-Spray Applications**

For spot or directed spray applications by backpack sprayers only (no mechanically pressured handgun applications allowed): mix LPI Glufosinate 280 at 1.7 fluid ounces of product per gallon of water. Apply to undesirable vegetation foliage until wet but prior to runoff. Ensure uniform and complete coverage. Thoroughly clean the sprayer following use. **DO NOT** make spot or directed spray applications to tree or vine trunk as injury may occur.

#### Weeds Controlled in Tree, Vine and Berry crops **Broadleaf Weeds**

Alkali sida Fleabane, annual Ammannia, purple Goosefoot Arrowhead, California Gromwell, field Buckwheat, wild Groundcherry, cutleaf Buffalobur Burclover, California Henbit Carpetweed Jimsonweed Chickweed, common Knotweed Chinese thornapple Kochia Cocklebur, common Copperleaf, Virginia Lettuce, miner's Lettuce, prickly Cudweed Cutleaf eveningprimrose London rocket Mallow, common Dodder

Groundsel, common Lambsquarters, common Malva (little mallow) Marestail Mayweed Morningglory, entireleaf

Morningglory, pitted Mullein, turkey Mustard, wild Nettle Nightshade, black Nightshade, eastern black Nightshade, hairy Pennycress Pigweed, redroot Pineapple weed Puncturevine Purslane, common Radish, wild Ragweed, common Ragweed, giant

Morningglory, ivyleaf

Sowthistle, annual Spurge, prostrate Starthistle, vellow Sunflower, common Sunflower, prairie Sunflower, volunteer **Swinecress** Thistle, Russian Turnip, wild Velvetleaf Vervain Vetch Virginia copperleaf Willowherb panicle

Smartweed, Pennsylvania

Redmaids

Shepherd's-purse

#### **Grass Weeds**

Barnyardgrass Crabgrass, smooth Junglerice Shattercane Oat, wild Bluegrass, annual Cupgrass, woolly Sprangletop Panicum, fall Stinkgrass Brome, ripgut Foxtail, giant Bromegrass, downy Foxtail, green Panicum, Texas Wheat, volunteer Canarygrass Foxtail, yellow Rush, toad\*\* Windgrass Chess, soft Goosegrass Ryegrass, annual\* Witchgrass Johnsongrass, seedling Crabgrass, large Sandbur, field

#### **Biennial and Perennial Weeds**

Aster, white heath Clover, red Horsetail Paragrass Thistle, musk Bindweed, field Clover, white Lovegrass Plantain Torpedograss Bindweed, hedge Dallisgrass Muawort Poison ivv/oak Vasevarass Bluegrass, Kentucky Dandelion Mullein, common Quackgrass Woodsorrel Dock, curly Rocket, yellow Bromegrass, smooth Mustard, tansy Yarrow, common Bulrush\*\* dogbank (hemp) Nutsedge, purple Rose, wild Nutsedge, yellow Rubus spp. Burdock Fescue Golden rod, gray Onion, wild Spurge, leafy Canada thistle Clover, Alsike Guineagrass Orchardorass Thistle, bull

# Restrictions to the Directions For Use on Tree, Vine, and Berry Crops

- **DO NOT** apply more than 164 fluid ounces of LPI Glufosinate 280 per acre (3.0 pounds active ingredient per acre) to berry bushes and stone fruit in a 12-month period. **DO NOT** make more than 2 applications at a maximum rate of 82.0 fluid ounces per acre (1.5 pounds active ingredient per acre) per application.
- **DO NOT** apply more than 246 fluid ounces (4.5 pounds active ingredient per acre) of LPI Glufosinate 280 per acre to tree nuts, vines, pome fruit, citrus, and olives in any calendar year. **DO NOT** make more than 3 applications at a maximum rate of 82.0 fluid ounces per acre (1.5 pounds active ingredient per acre) per application.
- **DO NOT** graze harvest, and/or feed treated orchard cover crops to livestock.
- DO NOT apply LPI Glufosinate 280 through any type of irrigation system.
- **DO NOT** apply LPI Glufosinate 280 aerially to tree, berry, or vine crops.
- DO NOT apply LPI Glufosinate 280 within 14 days of nut, fruit, berry, or grape harvest.
- Applications to citrus fruits, pome fruits and olives must be a minimum of 14 days apart.
- Applications to stone fruit must be a minimum of 28 days apart:
- **DO NOT** make spot spray applications to suckers, as tree injury may occur.

# Sucker Control with LPI Glufosinate 280

LPI Glufosinate 280 will reduce or eliminate sucker growth when applied to suckers that are young, green, and uncallused. For sucker control, apply a split application approximately 4 weeks apart at 56.0 fluid ounces of product per acre. Coverage of all sucker foliage is necessary for optimum control. Suckers should not exceed 12 inches in length.

#### Tank Mix Partner Instructions

LPI Glufosinate 280 does not provide residual weed control or control of unexposed plant parts. Certain herbicide tank mixes may aid in the performance of LPI Glufosinate 280 or be added to provide residual herbicide activity. No additional surfactant is needed with any tank mix partner. LPI Glufosinate 280 may be applied in tank mix combinations with labeled rates of other products provided these other products are labeled for the timing and method of application for the crop to be treated. The tank mix partner must be used in accordance with the label limitations and precautions. No label dosage rates may be exceeded. LPI Glufosinate 280 cannot be mixed with any product containing a label prohibition against such mixing.

Chateau®KarmeX® DFSimazine 80WSolicam® DFDevrinol® 50WPPrincep® 4LSimazine 90Surflan® ASGoal® 1.6ESimazine 4LSinbar® 80W

# APPLICATION DIRECTIONS FOR POTATO VINE DESSICATION

# **Application Rates and Timing**

Apply LPI Glufosinate 280 at the beginning of natural senescence of potato vines. Apply 21.0 fluid ounces per acre. Do not split this application or apply more than 1 application per harvest. Potato varieties with heavy or dense vines may require an application of another desiccation product to complete vine desiccation.

<sup>\*</sup> apply to annual ryegrass prior to 3 inches in height

<sup>\*\*</sup>indicates suppression

Thorough coverage of the potato vines to be desiccated is essential. Use a sufficient volume of water (20.0 to 100 gallons per acre) to obtain a thorough coverage of the potato vines. Vary the gallons of water per acre and the spray pressure as indicated by the density of the potato vines to assure thorough spray coverage. Increase the spray volume to at least 30.0 gallons of water per acre when the potato vine canopy is dense or under cool and dry conditions. Apply LPI Glufosinate 280 with the spray boom as low as possible to achieve thorough coverage of the potato vines for best control and to minimize drift potential.

#### Restrictions to the Directions For Use in Potato Vine Desiccation

- **DO NOT** apply more than 21.0 fluid ounces per acre to potato vines per season.
- **DO NOT** harvest potatoes until 9 days or more after application of LPI Glufosinate 280.
- **DO NOT** apply to potatoes grown for seed.
- Canola, corn, cotton, rice, soybean, and sugar beets may be planted at any time after the application of LPI Glufosinate 280 as a potato vine desiccant.
- **DO NOT** plant treated areas to wheat, barley, buckwheat, millet, oats, rye, sorghum, and triticale until 30 or more days after an application of LPI Glufosinate 280 as a potato vine desiccant.
- **DO NOT** plant treated areas to crops other than those listed in this use precautions section until 120 or more days after an application of LPI Glufosinate 280 as a potato vine desiccant.

# APPLICATION DIRECTIONS FOR USE ON RICE

[Note to reviewer: The following text in [] is optional text and may appear on the final label [(Not for use in California)]
THOROUGH SPRAY COVERAGE IS VERY IMPORTANT. For best results apply to emerged, young, actively growing weeds. LPI Glufosinate
280 is a foliar-active material with little or no soil-residual activity. Weeds that emerge after application will not be controlled. Weed control
may be reduced if application is made when heavy dew, fog, and mist/rain are present, or when weeds are under stress due to drought,
cool temperatures, or extended periods of cloudiness. LPI Glufosinate 280 is rainfast 4 hours after application to most weed species.
Rainfall within 4 hours after application may necessitate retreatment or reduced weed control may result.

# Restrictions to the Directions For Use on Rice

- **DO NOT** exceed 48.0 fluid ounces of LPI Glufosinate 280 per growing season.
- **DO NOT** apply LPI Glufosinate 280 within 70 days of harvesting rice.
- **DO NOT** plant rotation crops in a field treated with LPI Glufosinate 280 within 120 days after the last application of LPI Glufosinate 280 with the exception of wheat, barley, buckwheat, millet, oats, rye, sorghum, and triticale, which may be planted 70 days after the last application of LPI Glufosinate 280. The crops listed on this label may be planted at any time.
- DO NOT apply LPI Glufosinate 280 through any type of irrigation system.
- **DO NOT** use paddy water from a rice field treated with LPI Glufosinate 280 for irrigation, or as a water source for livestock or for raising crayfish.
- DO NOT add surfactants or crop oils. A silicon-based anti-foam agent may be added if needed.

#### Application Timing for the Southern United States (Arkansas, Louisiana, Mississippi, Missouri, Texas)

Applications of LPI Glufosinate 280 on rice may be made from the 1-leaf stage through the mid-tillering stage of development. Refer to the *Rate Tables for Weed Control in Rice* to select the proper rate to use to control the weed species present. LPI Glufosinate 280 will have an effect on weeds that are larger than the recommended leaf stage, however speed of activity and control may be reduced.

Rice fields should be as level as possible and free of large clods to obtain uniform germination of rice and grassy weeds and to ensure uniform flood levels. If necessary, fields may be flushed prior to treatment so that the rice and grass/broad leaf weeds are actively growing at the time of treatment. If the rice field is flushed, allow sufficient time for germination of the weed species to occur prior to treatment.

Apply LPI Glufosinate 280 prior to the permanent flood when weeds are in the 1- to 5-leaf stage. A second application is recommended after a new flush of weeds emerge. A second application may be made from 10 days after the first application up to the mid-tillering growth stage of the rice. For optimum weed control, apply LPI Glufosinate 280 before canopy closure to ensure thorough spray coverage of the weed species.

When applying LPI Glufosinate 280 post-flood, lower the water level so that 75% of the weed foliage is exposed. The water level may be brought back to normal level 48 hours after the herbicide application.

# [APPLICATION TIMING FOR CALIFORNIA

#### 1. Water-Seeded Rice

LPI Glufosinate 280 can be applied when the rice is in the 1-leaf stage to mid-tillering stage of development (but prior to panicle initiation). For optimum weed control apply LPI Glufosinate 280 when rice is in the 4- to 5-leaf stage. Lower the water in the field in order to expose small broadleaf weeds and sedges. The water level may be brought back to the normal level 24 hours after herbicide application. The water level must be controlled such that the rice is not completely covered. A second application is recommended at the 2- to 3-tiller stage of rice. For optimum weed control, apply LPI Glufosinate 280 before canopy closure to ensure thorough spray coverage of the weed species.

- · Minimum paddy depth of 8 inches
- Do not exceed 24.0 fluid ounces (0.44 pound active ingredient per acre) per single application
- Maximum of 2 applications at 24.0 fluid ounces (0.44 pound active ingredient per acre) with a minimum 10 day re-treatment interval
- Do not exceed 48.0 fluid ounces (0.89 pound active ingredient per acre) per year
- Minimum 7-day holding period after last application

# 2. Drilled or Dry-Seeded Rice

Rice fields should be as level as possible and free of large clods to obtain uniform germination of rice and grassy weeds and to ensure uniform flood levels. If necessary, fields may be flushed prior to treatment so that the rice and grass/broadleaf weeds are actively growing at the time of treatment. If the rice field is flushed, allow sufficient time for germination of the weed species to occur prior to treatment.

Apply LPI Glufosinate 280 prior to the permanent flood when weeds are in the 1- to 5-leaf stage. A second application is recommended after a new flush of weeds emerge. A second application may be made from 10 to 14 days after the first application up to the mid-tillering growth stage of the rice. For optimum weed control, apply LPI Glufosinate 280 before canopy closure to ensure thorough spray coverage of the weed species.

- Do not exceed 48.0 fluid ounces (0.89 pound active ingredient per acre) per single application.
- Two applications can be made at 24.0 fluid ounces (0.44 pound active ingredient per acre) with a minimum 10 day re-treatment interval.
- Do not exceed 48.0 fluid ounces (0.89 pound active ingredient per acre) per year.
- Minimum paddy depth of 4 inches.
- . Minimum 7-day holding period after flooding of the field.]

#### Rate Tables for Weed Control in Rice

Rates in ounces of formulated product per acre for the control of weeds are shown in the following tables. In weed populations with mixed species, apply the rates needed for all species present.

# 1. Southern United States (Arkansas, Louisiana, Mississippi, Missouri, Texas)

Grass Weeds Controlled with LPI Glufosinate 280 in Rice Grown in the Southern United States Weed Species Maximum Weed Growth Stage (leaf/tiller) 20.0 FI Oz/A 24.0 FI Oz/A Barnyardgrass 4-leaf 2-tiller Crabgrass, large 4-leaf 2-tiller Fall Panicum 4-leaf 2-tiller Johnsongrass 4-leaf 2-tiller 2-tiller 2-leaf Rice, red\* Signalgrass broadleaf 4-leaf 2-tiller Sprangletop 4-leaf 2-tiller Watergrass 6-leaf 2-tiller

Broadleaf Weeds Suppressed or Controlled with LPI Glufosinate 280 in Rice Grown in the Southern United States Weed Species Maximum Weed Height or Diameter (inches) 20.0 FI Oz/A 24.0 FI Oz/A Ammania 4" 4" California Arrowhead 6" 10" Cocklebur, common Curly Indigo 8" 2" 4" Dayflower 4" 6" Eclipta 4" 8" Morningglory, ivyleaf 8" 4" Morningglory, pitted 4" 8" Northern jointvetch 4" 8" Pennsylvania smartweed ∆" 10" Sesbania, hemp

LPI Glufosinate 280 applied at 24.0 fluid ounces per acre may control or suppress the sedges shown in the following table. Control of sedges may be enhanced by using a second application or by a tank mix with other herbicides recommended on this label.

<sup>\*</sup>For optimum red rice control, make 2 applications of LPI Glufosinate 280. The first application should be made when the red rice is in the 2- to 3-leaf stage. The second application should be made after the newly emerged red rice reaches the 2- to 3-leaf stage, but before the white rice reaches the mid-tillering stage of development.

<sup>\*\*</sup> indicates suppression

Sedges Suppressed with LPI Glufosinate 280 in Rice Grown in the Southern United States			
Sedges	24.0 FI Oz/A		
Bulrushes	**		
Flatsedge	**		
Nutsedge	**		
Smallflower Umbrellaplant	**		

<sup>\*\*</sup> indicates suppression

#### 2. California

Grass Weeds Controlled with LPI Glufosinate 280 at 20.0 Fl Oz/A in Rice Grown in California			
Weed Species	Maximum Weed Growth Stage		
Barnyardgrass	4-leaf		
Sprangletop	4-leaf		
Watergrass	4-leaf		

Broadleaf Weeds Suppressed or Controlled with LPI Glufosinate 280 in Rice Grown in California			
Weed Species	Maximum Weed Height	(Inches)	
	20.0 FI Oz/A	24.0 FI Oz/A	
Ammania	2	4	
California arrowhead	2	4	
Ducksalad	2	4	

LPI Glufosinate 280 applied at 20.0 to 24.0 fluid ounces per acre may control or suppress the sedges shown in the following table.

Control of sedges may be enhanced by using a second application or tank mixes with other herbicides.

Sedges Suppressed or Controlled with			
Weed Species	Maximum Weed H	eight (Inches)	
•	20.0 FI Oz/A	24.0 FI Oz/A	_
Ricefield bullrush	* *	4	
Smallflower umbrellaplant	* *	4	

<sup>\*\*</sup> indicates suppression

# Tank Mix Instructions for Use in Rice

When using LPI Glufosinate 280 in tank mix combinations, follow the precautions and directions of the most restrictive label for the appropriate timing, rate, and crop response information.

# 1. Southern United States (Arkansas, Louisiana, Mississippi, Missouri, Texas)

To enhance weed control and/or provide residual control in rice, LPI Glufosinate 280 may be mixed with the following herbicides.

Arrosolo® 3-3E Herbicide	Bolero® EC Herbicide	Prowl® 3.3EC Herbicide	Stam® Herbicide
Basagran® Herbicide	Londax® Herbicide	Propanil	Permit Herbicide

#### 2. California

To enhance weed control and/or provide residual control in rice, LPI Glufosinate 280 may be mixed with the following herbicides.

Londax Herbicide Stam Herbicide Super Wham® Herbicide

# APPLICATION DIRECTIONS FOR USE IN RICE SEED PROPAGATION

[Note to reviewer: The following text in [] is optional text and may appear on the final label [(Not for use in California)]
LPI Glufosinate 280 is to be applied as a foliar spray to selectively remove susceptible "segregates," i.e., undesirable rice plants which are not tolerant to glufosinate-ammonium and to control a broad spectrum of emerged grass and broadleaf weeds in rice-seed production fields. Inbred lines or breeding material not possessing the glufosinate-ammonium tolerance gene will be severely injured or killed if treated with this herbicide. Apply LPI Glufosinate 280 exclusively to rice-seed propagation fields in which the desired plants are glufosinate-ammonium tolerant.

**THOROUGH SPRAY COVERAGE IS VERY IMPORTANT.** LPI Glufosinate 280 works best when weeds are small, and the crops and weeds are actively growing. Visual effects and control of rice susceptible "segregates" from LPI Glufosinate 280 applications occur within 2 to 4 days after application under good growing conditions. The ability of LPI Glufosinate 280 to eliminate rice plants not tolerant to LPI Glufosinate 280 may be reduced when heavy dew, fog, or mist/rain is present on the crop, or when the crop is under stress due to drought, cool temperatures, or extended periods of cloudiness.

Rice fields should be as level as possible and free of large clods to obtain uniform germination of rice and grassy weeds and to ensure uniform flood levels. If necessary, fields may be flushed prior to treatment. If fields are flushed prior to treatment, flush in sufficient time so that the rice and grass/broadleaf weeds are actively growing at time of treatment.

Do not allow spray to contact foliage or green tissue of desirable vegetation other than rice lines in which the desired plants are glufos-inate-ammonium tolerant. LPI Glufosinate 280 will injure any other green vegetation contacted by the spray.

# Instructions for Seed Handling, Storage and Use

Seed from treated plants must be held in secured storage until used for breeding of glufosinate-ammonium tolerant rice seed, or destroyed. Seed from treated plants must be labeled as follows:

"Do Not Use for Feed or Food Purposes. Store Away from Feed and Food Stuffs."

In addition, label the seed with the Seed Disposal statements found in the Storage and Disposal section of this label.

#### Restrictions to the Directions For Use

- DO NOT use rice, any rice processed commodities or rice straw treated with LPI Glufosinate 280 for food or feed consumption.
- **DO NOT** exceed 80.0 fluid ounces per acre of LPI Glufosinate 280 per growing season on rice being treated for segregate control in seed production fields.
- **DO NOT** plant rotation crops in a field treated with LPI Glufosinate 280 for 120 days after the last application of LPI Glufosinate 280 with the exception of wheat, barley, buckwheat, millet, oats, rye, sorghum and triticale which may be planted 70 days after the last application of LPI Glufosinate 280.
- DO NOT apply LPI Glufosinate 280 through any type of irrigation system.

# **Rate Instructions and Timing for Seed Production**

For the selection of susceptible rice "segregates", LPI Glufosinate 280 must be applied at 40.0 fluid ounces per acre when rice is in the 1- to 3-leaf stage of growth. A second treatment of 40.0 fluid ounces per acre must be applied 10 days later or up until the rice is in the mid-tillering state of growth.

- Do not exceed 80.0 fluid ounces (1.46 pounds active ingredient per acre) per single application.
- Two applications can be made at 40.0 fluid ounces (0.73 pound active ingredient per acre) with a minimum 10-day re-treatment interval.
- **DO NOT** exceed 80.0 fluid ounces (1.46 pounds active ingredient per acre) per year.
- Minimum paddy depth of 4 inches.
- If 1 application of 80.0 fluid ounces is made, the application must be made to a dry field. A minimum 7-day holding period after flooding of the field is required.
- If 2 applications are made, the first application must be made to a dry field.
- The second application may be made to a flooded field with a required 55-day holding period for a 4-inch paddy depth or a 30-day holding period for an 8-inch paddy depth.

#### **Water Management**

A sufficient portion of the target grassy weed plant must be exposed to LPI Glufosinate 280 for satisfactory control to be achieved. Therefore, if necessary, lower or allow water to recede so that at least 75% of the weed foliage is exposed above the water level. Do not increase the water level for at least 48 hours following the application of LPI Glufosinate 280. The water level may be brought back to normal level following this period.

# Tank Mix Recommendations for LPI Glufosinate 280 Use in Rice Seed Propagation

When using LPI Glufosinate 280 in tank mix combinations, follow the precautions and directions of the most restrictive label for the appropriate timing, rate, and crop response information.

# 1. Southern United States (Arkansas, Louisiana, Mississippi, Missouri, Texas)

To enhance weed control and/or provide residual control in rice, LPI Glufosinate 280 may be mixed with the following herbicides.

Arrosolo 3-3E Herbicide Bolero 8EC Herbicide Prowl 3.3 EC Herbicide Stam Herbicide

Basagran Herbicide Londax Herbicide Permit Herbicide

# [2. California

To enhance weed control and/or provide residual control in rice, LPI Glufosinate 280 may be mixed with the following herbicides.

Bolero 8EC Herbicide Londax Herbicide Stam Herbicide Super Wham Herbicide]

# **FALLOW FIELDS OR POST HARVEST**

LPI Glufosinate 280 may be used as a substitute for tillage to control or suppress weeds in the grass, broadleaf and biennial/perennial weed tables in this label. Applications may be made in fallow fields, post harvest, prior to planting or emergence of any crop listed on this label.

Apply LPI Glufosinate 280 at 22.0 or 29.0 fluid ounces per acre to fallow fields to control specific weeds. LPI Glufosinate 280 must be applied with ammonium sulfate. Tank mixes with 2,4-D, glyphosate or atrazine are recommended with LPI Glufosinate 280 to enhance total weed control. When using LPI Glufosinate 280 in tank mix combinations, follow the precautions and directions of use of the most restrictive label. See *Application and Mixing Procedures* section of this label for additional information on how to apply LPI Glufosinate 280. See the *Information* section of this label for rotational crop restrictions.

# FARMSTEADS. RECREATIONAL. AND PUBLIC AREAS

When applied as recommended, LPI Glufosinate 280 controls undesirable plant vegetation in non-crop areas around farmstead building foundations, shelter belts, along fences, airports, commercial plants, storage and lumber yards, educational facilities, fence lines, ditch banks, dry ditches, schools, parking lots, tank farms, pumping stations, parks, other public areas and general nonselective farmstead weed control. Refer to the *Application Direcitons for Use on Listed Tree, Vine, and Berry Crops* for appropriate application broadcast and spot spray application rates and lists weeds controlled.

# STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Do not use or store near heat or open flame. Keep the container tightly closed and dry in a cool, well-ventilated place. Storage temperature should not exceed 125 °F. If storage temperature for bulk of LPI Glufosinate 280 is below 32 °F, the material should not be pumped until its temperature exceeds 32 °F. Protect against direct sunlight.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of LPI Glufosinate 280 may be disposed of on-site or at an approved waste disposal facility.

**CONTAINER HANDLING: Nonrefillable container.** Do not reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact The Agricultural Container Recycling Council (ACRC) at www.acrecycle.org. If not recycled, then puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

For packages up to 5 gallons: 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. Pressure rinse as follows: Empty the remaining contents into application equipment or a 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.

For packages greater than 5 gallons and less than 56 gallons: Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Pressure rinse as follows: Empty the remaining contents into application equipment or a 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.

**For packages greater than 56 gallons:** To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

For refillable containers: Refill this container with LPI Glufosinate 280 only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. For final disposal, offer for recycling or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC - 1-800-424-9300.

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