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

> OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

Luz G. Chan Drexel Chemical Company P.O. Box 13327 Memphis, TN 38113-0327

SEP 9 2010

Subject:

CSF & Label Amendment (remove asparagus, carrots, celery, and noncrop weed control uses, update precautionary statements and directions for use, add kenaf, postharvest, crop stubble, fallow ground and stale seedbed uses)
Drexel Linuron 4L
EPA Reg. No. 19713-97
Application Dated June 14, 2010
Resubmissions Dated July 29, 2010 & September 2, 2010

Dear Ms. Chan:

The basic confidential statement of formula (CSF) dated September 2, 2010 and the labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, are acceptable.

A stamped copy of your label is enclosed for your records. This label supersedes all previously accepted labels. You must submit one (1) copy of the final printed label before you release the product for shipment. Products shipped after eighteen (18) months from the date of this letter or the next printing of the label, whichever occurs first, must bear the new revised label. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA §6(e). Your release for shipment of the product constitutes acceptance of these conditions.

Sincerely,

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Jim Tompkins Product Manager 25 Herbicide Branch Registration Division (7504P)

# Drexel. Linuron 4L

#### **ACTIVE INGREDIENT:**

Linuron: [3-(3,4-dichlorophenyl)-1-methoxy-	
1-methylurea]	40.6%
OTHER INGREDIENTS:	
TOTAL:	100.0%
This product contains 4 pounds of Linuron per gallon.	

# KEEP OUT OF REACH OF CHILDREN CAUTION

# See FIRST AID Below

## EPA Reg. No. 19713-97 EPA Est. No. 19713-XX-XXX Net Content: \_\_\_\_\_\_ FIRST AID

#### IF SWALLOWED:

- Call a poison control center or doctor immediately for treatment advice.
- · Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to do so by a poison control center or doctor.
- Do not give anything by mouth to an unconscious or convulsing person.

#### IF ON SKIN OR CLOTHING:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15 to 20 minutes.
- · Call a poison control center or doctor for treatment advice.

#### IF IN EYES:

- Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- · Call a poison control center or doctor for treatment advice.

#### IF INHALED:

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.
- Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. For information on this pesticide product (including health concerns, medical emergencies or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378.

#### PRECAUTIONARY STATEMENTS Hazards to Humans and Domestic Animals

**CAUTION:** Harmful if swallowed or absorbed through skin. Avoid contact with eyes, skin, or clothing. Prolonged or frequently repeated skin contact may cause an allergic reaction in some individuals. Remove contaminated clothing and wash clothing before reuse.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical resistant to this product are listed below. If you want more options, follow the instructions for Category A on an EPA chemical-resistant category selection chart.

(Continued)

# PRECAUTIONARY STATEMENTS (Cont'd.)

**Mixers and loaders must wear:** Coveralls over long-sleeved shirt and long pants, chemical-resistant footwear, chemical-resistant gloves made of any waterproof material such as Nitrile, Butyl, Neoprene, and/or Barrier Laminate, chemical-resistant apron.

Applicators and other handlers (other than mixers and loaders) must wear: Long-sleeved shirt and long pants, shoes and socks, chemical -resistant gloves made of any waterproof material such as nitrile, butyl, neoprene, and/or barrier laminate.

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

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

# USER SAFETY RECOMMENDATIONS

**Users should:** 1) Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. 2) Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. 3) Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

#### **ENVIRONMENTAL HAZARDS**

This pesticide is toxic to fish and aquatic invertebrates. Do not apply directly to water to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water when cleaning of equipment or disposing of equipment washwater and rinsate.

#### Ground Water Advisory:

This chemical is known to leach through soil into groundwater under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

#### Surface Water Advisory:

Linuron may contaminate surface water through spray Griffor under certain conditions from surface water runoff into adjacent surface water bodies (ponds, lakes, streams etc.). For several weeks postapplication, linuron has a high potential to runoff when applied to fields with any of the following conditions: sloping land draining into nearby surface waters; very poorly drained solise areas with Extremely shallow ground water; frequently flooded areas fields with surface water, canals or ditches; and highly erodible land cfiltivated with poor management practices.

Drexel Chemical Company

Manufactured For: ູໍ່ເເເ



#### **USE INFORMATION**

LINURON 4L is a flowable herbicide to  $b_{e_{i_{1}}}^{k_{i_{2}}}$  and in water and applied as a spray for selective control of weeds in certain crops and for nonselective weed control on non-cropland areas. It is non-corrosive to equipment, non-flammable and non-volatile.

This product may be applied to soil prior to emergence of weeds to control susceptible weed seedlings for an extended period of time; the degree of control and duration of effect will vary with the amount of chemical applied, soil texture, rainfall and other conditions. Soils high in clay or organic matter require higher dosages than soil low in clay or organic matter to obtain equivalent herbicide performance. Moisture is required to activate the chemical; best results occur if rainfall (or irrigation) occurs within 2 weeks of application. In the Columbia River Basin, use this product only if crop is sprinkler irrigated.

This product may also be used to control emerged weeds. Results vary with rate applied and environmental conditions; best results are obtained on succulent weeds growing under conditions of high humidity and temperatures of 70°F or higher. Addition of a surfactant such as Surf-Ac<sup>®</sup> 820 to the spray (where recommended) increases contact effects of this product.

Since the effect of this product varies with soils, crop varieties, uniformity of application and environmental conditions, it is suggested that growers limit their first use to small areas. Observe all use precautions and limitations on labeling of all products used in mixtures.

#### **DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### RESISTANCE

When herbicides that affect the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field.

Adequate control of these resistant weed biotypes cannot be expected. If weed control is unsatisfactory, it may be necessary to retreat the problem area using a product affecting a different site of action.

To better manage herbicide resistance through delaying the proliferation and possible dominance of herbicide resistant weed biotypes, it may be necessary to change cultural practices within and between crop seasons such as using a combination of tillage, retreatment, tankmix partners and/or sequential herbicide applications that have a different site of action. Weed escapes that are allowed to go to seed will promote the spread of resistant biotypes.

It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes. Consult your agricultural dealer, consultant, applicator, and/or appropriate state agricultural extension service representative for specific alternative cultural practices or herbicide recommendations available in your area.

#### INTEGRATED PEST MANAGEMENT

This product may be used as part of an Integrated Pest Management (IPM) program that can include biological, cultural, and genetic practices aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop systems in your area.

## AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard (WPS), 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, greenhouses and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the WPS.

(Continued)

# AGRICULTUR( JSE REQUIREMENTS (Cont.)

Do not enter or allow  $\hat{w}_{0i}$  ker entry into treated areas during the REI of 24 hours.

PPE required for early entry to treated areas that is permitted under the WPS and that involves contact with anything that has been treated, such as plants, soil or water, is: Coveralls over shortsleeved shirt and short pants, chemical-resistant gloves made of any waterproof material, shoes plus socks and chemical-resistant headgear for overhead exposure.

#### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are not within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses. Non-crop weed control is not within the scope of the Worker Protection Standard. Do not enter or allow unprotected persons to enter treated areas until sprays have dried.

#### SPRAY DRIFT MANAGEMENT

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions. AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLI-CATOR.

#### Importance of 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. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. APPLYING LARGER DROPLET 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** sections of this label.

#### **Controlling Droplet Size – General Techniques**

- Volume Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure Use low lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.
- 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.

#### **Boom Height**

Setting the boom at the lowest labeled height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom should remain level with the crop and have minimal bounce.

#### Wind

Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given wind speed. AVOID GUSTY OR WINDLESS CONDITIONS. **Note:** Local terrain can influence wind patterns and how they affect sphay drift.

Temperature Inversions

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes stifall suspended droplets to remain close to the ground and move laterally in a concentrated cloud.

Temperature inversions are charactefized by increasing temperature with altitude and are common on nights with limited bloud 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 fug; 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 indicated good vertical air mixing.

#### **Shielded Sprayers**

Shielding the boom or individual nozzle. I reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

#### **Sensitive Areas**

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

#### WEEDS CONTROLLED

# Pre-emergence Use – This product at specified rates, controls weeds such as:

**Broadleaves** – Carpetweed, Chickweed, Common dayflower, Common ragweed, Florida beggarweed, Florida purslane (Florida pusley), Galinsoga, Lambsquarters, Mustard, Nettleleaf goosefoot, Pigweed, Prickly lettuce, Purslane (common), Shepherdspurse, Smartweed (Pennsylvania), Tumble mustard, Wild radish.

**Grasses** – Barnyardgrass (Watergrass), Canarygrass, Crabgrass, Fall panicum, Foxtail (including Giant), Goosegrass.

**Partial Control (suppression)** – Annual morningglory, Cocklebur, Eastern black nightshade, Prickly sida (Teaweed), Sicklepod, Velvetleaf (Buttonweed), Waterhemp.

The lower dosage rates are effective on lighter soils and the higher rates on heavier soils and on the more resistant weeds. Sufficient moisture (0.5 to 1 inch on moist soils; 1 to 2 inches on dry soils) in the form of rainfall or sprinkler irrigation is necessary after treatment to carry the chemical into the root zone of germinating weeds; best results are obtained when this occurs within two weeks after application. A good seed bed must be prepared before application of this product as crop injury may result if application is made to ground which is cloddy or compacted resulting in improperly planted seed. Plant seed to depth specified. Surface of the soil should not be cultivated or disturbed after application of this product and before emergence of the crop as weed control may be reduced and crop injury may result. However, if moisture is insufficient to activate the herbicide, a shallow cultivation (rotary hoe preferred) should be made after emergence of row crops while weeds are small enough to be controlled by mechanical means

**POST-EMERGENCE USE OR BURNDOWN USE** — This product will control up to 2 inch grasses and up to 6 inch broadleaves. For best results, apply to seedling grasses and broadleaves.

**Broadleaves** – Annual morningglory, Carpetweed, Chickweed (common), Cocklebur (common), Common ragweed, Common dayflower, Corn (volunteer)\*, Dog fennel, Fiddleneck (Amsinckia), Florida beggarweed, Florida purslane (Florida pusley), Groundsel, Knawel, Kochia (2-4 inches), Lambsquarters, Mustard, Nettleleaf goosefoot, Pigweed, Prickly lettuce, Prickly sida (Teaweed), Purslane (common), Ragweed (common), Russian thistle (2-4 inches), Sesbania, Sicklepod, Smartweed (Pennsylvania), Tumble mustard, Velvetleaf (buttonweed), Wild buckwheat.

**Grasses** – Annual ryegrass, Barnyardgrass (Watergrass), Broadleaf (Signalgrass), Canarygrass, Corn (volunteer)\*, Crabgrass, Fall panicum, Foxtail (including Giant), Goosegrass, Rattail fescue, Texas panicum.

 Corn (volunteer) – See POSTHARVEST, CROP STUBBLE, FAL-LOW GROUND, STALE SEEDBED section for use instructions.

Results of postemergence treatment of emerged weeds vary with rate applied and environmental conditions. Best results are obtained on succulent weeds growing under conditions of high humidity and temperatures of 70°F or higher. Addition of a surfactant to the spray (where recommended) increases contact effects of this product. Postemergence application will also provide control of emerging susceptible weed seedlings.

#### TANK MIXING

This product may be tank mixed or followed with sequential applications of other products registered for the same crops as this product. Applications of full or reduced rates of other products may be tank mixed with this product provided:

- The tank mix product is labeled for the same timing, method of application, adjuvants and use restrictions as this product.
- The tank mixture is not specifically prohibited on the label of the tank mix product.
- The tank mix combination is compatible as determined by a 'jar test' described in the TANK MIX COMPATIBILITY TESTING section below.

When tank mixing this relative to the tank mixing this relative to the tank mixing, restrictions, and precautions of both this product and the tank mix partner(s). When tank mixing, the most restrictive labeling applies.

## TANK MIXING COMPATIBLITY TESTING

Perform a jar test prior to tank mixing to ensure compatibility of this product to other pesticides. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately one-half hour. If the mixture balls up, forms flakes, sludges, gels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

#### **REPLANTING:**

If initial seeding fails to produce a crop, any crop registered for the rate of linuron that was applied may be replanted immediately. Thoroughly rework soil before replanting; do not retreat field with a second application, as injury to the crop may result.

#### **CROP ROTATION DIRECTIONS:**

#### East of the Rocky Mountains

- Any crop registered for the rate of linuron that was applied may be replanted immediately.
- Any crop may be planted after 4 months, except for cereals, where only barley, oats, rye, and wheat may be planted.
- Cereal crops not listed above may be planted after 12 months.

#### West of the Rocky Mountains

- Any crop registered for the rate of linuron that was applied may be replanted immediately.
- Do not plant any other crop until 12 months after application of this product, as crop injury may result.

#### **APPLICATION DIRECTIONS**

This product must be used only in accordance with the directions on this label. Injury to or loss of desirable trees or other plants may result from failure to observe the following:

#### **AERIAL APPLICATION IS PROHIBITED**

Do not apply to sand or loamy sand.

#### Do not use on soils with less than 1% organic matter.

**GROUND APPLICATION:** Use a fixed-boom sprayer properly calibrated to a constant speed and rate of delivery. Openings in screens should be equal to or larger than 50-mesh. Continuous agitation in the spray tank is required to keep the material in suspension. Agitate by hydraulic means. If bypass or return line is used, it should terminate at bottom of tank to minimize foaming. Avoid overlapping of spray swaths and shut off spray booms while starting, turning, slowing or stopping, or injury to the crop may result. For pre-emergence application, use a minimum of 15 gallons per acre. For post-emergence application, use sufficient volume (minimum 25 gallons per acre) for thorough coverage of weed foliage. Always apply in a manner and under conditions favorable to avoid spray drift.

**CLEANING:** Equipment should be cleaned of all traces of this product immediately after use. Nozzle tips and screens should be removed and cleaned separately. Flush tank, pump, hoses and boom with several changes of water.

Draining or flushing equipment on or near desirable trees or other plants or in areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots may injure these plants. This product should not be used on home plantings of trees, shrubs or herbaceous plants, lawns, wak's, driveways, tennis courts or similar areas. Keep or drift of dry powder or spray from desirable plants.

Spray Preparation: Mix proper amount of this productinto necessary volume of water; for preemergence applications, non-pressure nitrogen solution may be substituted for all or part of the water. Where use of surfactant is recommended, dilute with 10 parts of water and add as last ingredient to nearly full tank. All dosages of this product (and tank mixtures) are expressed as broadcast rates; for band treatment, use proportionately less. For example, use one-third ັດໂtho ວັcoadcast rate when treating a 14 inch band where row spacifig is 42 inches. Where range of dosages is given, use the lower rate 66 lighter soils (low in clay or organic matter) and the higher rate on heavier soils (high in clay or organic matter); for postemergence application, use the lower rate on smaller weeds and the higher rate on larger weeds. Fertilizer Spray Mixtures - For pre-emergence application, nonpressure nitrogen or fertilizer solution may be used in the spray mixture unless otherwise directed. Small quantities should be tested for compatibility by the following procedure before full scale mixing:

- 1. Measure 1 pint of intended spray water fertilizer solution into a jar.
- Add in the order given, the intended ingredients, shaking after 2 each addition
  - (a) Surfactants (spreaders), acidifiers, compatibility agents and activators; add 1 teaspoon for each pint/100 gallons.
  - (b) Dry ingredients (wettable powders, dry flowables); add 1 tablespoon for each pound/100 gallons.
  - (c) Soluble ingredients; add 1 tablespoon for each pound/100 gallons.
  - (d) Flowables: add 1 teaspoon for each pint/100 gallons.
- (e) Spreaders/stickers; add 1 teaspoon for each pint/100 gallons. 3. The final mixture should be uniform and smooth with no evidence of coagulation occurring.

If incompatibility is evident, begin test again with a compatibility agent added first. Six drops is equivalent to 4 ounces per 100 gallons. If this does not smooth the mixture, try higher concentrations or other compatibility agents.

- Allow the mixture to stand undisturbed for 30 minutes. If separation occurs, shake and observe the resulting mixture. If mixture is smooth proceed with spraying, provided the tank has good agitation. If mixture is not smooth, do not spray. You may try:
  - (a) more compatibility agents.
  - (b) different formulations of the active ingredients (switch from WP or EC to flowable or from WP to EC).
  - (c) change active ingredients; some combinations will not tank mix.

#### **CHEMIGATION INSTRUCTIONS**

Apply this product only through one or more of the following types of systems: sprinkler including center pivot, lateral move, end row, side (wheel) roll, traveler, big gun, solid set or hand move irrigation system(s). Do not apply this product through any other type of irrigation system.

Crop injury or lack of effectiveness or illegal pesticide residues can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide labelprescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

#### CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

Public water systems means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into the reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

hed favors drift beyond the area inten Do not apply when wing" for treatment.

When mixing, fill nurse tank half full with water. Add this product slowly to tank while hydraulic or mechanical agitation is operating and continue filling with water. Stickers, spreaders, insecticides, nutrients, etc. should be added last. If compatibility is in question, use the compatibility jar test before mixing a whole tank. Because of the wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in mixtures.

This product should be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand move irrigation systems. Agitation is recommended. Shut off injection equipment after treatment and continue to operate irrigation system until this product has been cleared from the last sprinkler head.

#### SPRINKLER CHEMIGATION

The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

When mixing, fill nurse tank half full with water. Add this product slowly to the tank while hydraulic or mechanical agitation is operating and continue filling with water. Stickers, spreaders, insecticides, nutrients, etc. should be added last. If compatibility is in question, use the compatibility jar test before mixing a whole tank. Because of the wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in mixtures. This product should be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand move irrigation systems. Agitation is recommended. Shut off injection equipment after treatment and continue to operate irrigation system until this product has been cleared from the last sprinkler head.

## USES

#### BULB

#### Tulip, Calla Lily, Daffodil, Dutch Iris (CA)

After planting of bulbs, settle the soil with sprinkler irrigation (rainfall will serve the same purpose). Before emergence of plants (bulbs), apply 2 pints of this product per acre in a minimum of 20 gallons of water per acre. Treat only during growing season.

## CORN (FIELD) (EAST OF ROCKY MOUNTAINS WILY) Do not exceed a seasonal maximum of 1.5 pints per acre. Do not spray over the top of emerged corn. $^{\circ}_{\circ}$ $^{\circ}_{\circ}$

Pre-emergence Application: Make a single application after planting but before crop emerges. Plant seed at least 1.75 inches deep on flat or raised seedbeds only or injury to the crop may result. . . .

Use this product alone at 1 to 1.5 pts./acfe. Use lower rates on lighter soils and higher rates on heavier soils.eFor improved grass and broadleaf weed residual control, tank mix this product with such products registered for field corn as alachlor, atrazine, Prove, or Me-Too-Lachlor<sup>™</sup>. See the table below for tank mix rates for this product and alachlor or atrazine.

#### This Product + Alachlor

THIS PI	RODUCT + Alachlor ( 🚬 🗆	vlixture)*	
	Product per Acre		
	1 to 3% Organic Matter	3 to 6% Organic Matter	
Soil Texture	THIS PRODUCT (pts.)	THIS PRODUCT (pts.)	
	+	+	
	Alachior (qts.)	Alachlor (qts.)	
Coarse: Sandy loam	0.66 to 1.25 + 0.75 to 1	1.25 to 2 + 1 to 1.5	
Medium: Loam, Silt Ioam, Silt, Sandy clay Ioam	1 to 1.5 + 1 to 1.5	1.5 + 1.5 to 2	
Fine: Silty clay, Silty clay loam, Clay, Clay loam	1.25 to 1.5 + 1.5 to 2	1.5 + 2 to 2.5	

REPLANTING: Corn or Soybeans may be replanted within 4 months. After 4 months, any crop may be replanted.

\* Dilute Alachlor with 2 parts of water and add as last ingredient to spray tank.

#### This Product + Atrazine

THIS PRODUCT + Atrazine (Tank Mixture)		
	Product per Acre	
	1 to 2% Organic Matter	2 to 5% Organic Matter
Soil Texture	THIS PRODUCT (pts.) +	THIS PRODUCT (pts.) +
	Atrazine (lbs. a.i.)	Atrazine (Ibs. a.i.)
Coarse: Sandy loam	0.66 to 1 + 0.4 to 0.5	1 to 1.5 + 0.5 to 1
Medium: Loam, Silt Ioam, Silt, Sandy clay Ioam	1 to 1.5 + 0.5 to 0.8	1.5 + 0.8 to 1.2
Fine: Silty clay, Silty clay Ioam, Clay, Clay Ioam	1.33 to 1.5 + 0.6 to 0.8	1.5 + 0.8 to 1.6
REPLANTING: Corn may be replanted within 6 months. After 6 months, any crop		

may be planted. (Exception: Do not follow treated Corn with Sugar beets, Tobacco or Vegetables in rotation.)

#### **CORN (FIELD)**

Directed Post-emergence Application: Make a single application as a directed spray after Corn is at least 15 inches high (measured to the highest leaf surface on free standing plants). Do not spray over top of Corn. Apply only when there is sufficient differential between height of Corn and weeds so that the directed spray thoroughly covers all weed foliage without contact of upper leaves or whorl of Corn by spray or drift, as such contact may cause crop injury. Early cultivation (rotary hoe or other suitable equipment) will aid in achieving proper differential between height of Corn and weeds.

Use 1.25 to 1.5 pints per acre. Add 1 pint Surf-Ac 820 for each 25 gallons spray mixture. Non-pressure nitrogen solution may be substituted for all or part of the water. Use the lower rate on lighter soils (low in clay or organic matter) and when weeds do not exceed 2 inches in height: use the higher rate on heavier soils (high in clay or organic matter) for weeds up to 5 inches in height. Do not apply within 57 days of harvest of Field corn.

# **COTTON (EAST OF ROCKY MOUNTAINS ONLY)**

# Do not spray over top of cotton.

Do not apply within 76 days of harvest.

Do not use on Pima varieties of cotton.

Directed Postemergence Application: Apply as a directed spray, adjust nozzles to minimize contact to Cotton leaves with spray or drift as crop injury may result.

Make first application of 1 pint per acre when Cotton is at least 12 inches tall. Use 1 to 1.5 pints per acre when Cotton is at least 18 inches tall and emerged weeds do not exceed 2 inches in height; Add 1 pint Surf-Ac 820 for each 25 gallons spray mixture. If needed, a second application of same rate may be made 1 week or later after initial treatment. Alternatively, after Cotton is 20 inches tall, make a single application of 2 to 3 pints per acre following last cultivation. If emerged weeds are present, add Surf-Ac 820 as directed above.

#### **HYBRID POPLAR (MIDWEST)**

Apply 2 to 4 pints of this product per acre before bud break in the Spring. For application after bud break, apply 2 to 4 pints of this product per acre as a directed spray. Spray should be directed to weed growth and to avoid contact with the Poplar plant. Do not spray over the top of the Poplar as injury to the plant may result.

Use the lower rate on light soils and higher rate on heavier soils. For best results on emerged weeds, treat at the seedling stage.

More than one treatmer ay be made but do not apply more that pints of this product pe a per year.

# **KENAF**

This product may be used on Kenaf being managed for the production of fiber or pulp.

Directed Application: Make a single application of 1 to 2 pints per acre as a directed spray to the base of 8 to 10 inch tall Kenaf plants. Direct the spray to contact the Kenaf plants at no higher than 3 inches above the soil surface. The addition of a surfactant to the spray mixture may increase the activity of this product on emerged weeds. The addition of MSMA at 2.66 pints per acre to the spray mixture may improve the control of emerged grasses.

#### PARSNIPS

Pre-emergence Application: Make a single application of 1.5 to 3 pints per acre. Apply after planting but before crop emerges. Plant seed at least one-half inch deep.

#### POSTHARVEST, CROP STUBBLE, FALLOW GROUND, STALE SEEDBED

NOTE: ALL STATES - DO NOT EXCEED THE MAXIMUM PER ACRE PER YEAR IN-CROP USE RATE FOR ALL APPLICATION TIMINGS.

#### East of the Rocky Mountains Only

Apply this product at a rate of 1 to 4 pints per acre to postharvest, crop stubble, fallow grounds or stale seedbeds for control of emerged weeds or for residual weed control during the fallow season. For control of established annual weeds, add a nonionic surfactant at 0.5 to 1% v/v or a crop oil concentrate at 1 to 2 pints per acre to aid in control.

Apply before weeds reach 4 inches in height. See the "WEEDS CON-TROLLED" section of this label for a list of weeds controlled.

For control of established weeds, this product may be tank mixed with a burndown herbicide, such as glyphosate or paraguat.

Apply this product by ground equipment in sufficient spray volume to provide uniform coverage of the site and/or weeds to be treated.

For volunteer corn up to 6 inches in height, apply 2/3 to 1 pint per acre of this product in a tank mixture with paraquat at 9.6 to 14.4 ounces active ingredient per acre. Apply the higher rate of both herbicides for volunteer corn that is 7 to 12 inches in height. The addition of a surfactant to the spray solution will increase the contact efficacy of this tank mixture.

Any crop may be planted 4 months after application. The crops of corn, grain sorghum, potatoes or soybeans may be planted at anytime following application, provided the combined rate applied postharvest and preemergence does not exceed the maximum labeled preemergence rate per 12 month period for the specific crop.

#### Idaho, Montana, Oregon, Washington

Apply this product at a rate of 1.5 to 4 pints per acre to postharvest, crop stubble, fallows grounds or stale seedbeds for control of emerged weeds or for residual weed control during the fallow season. For control of established annual weeds, add a nonionic surfactant at 0.5 to 1% v/v, or a crop oil concentrate at 1 to 2 pints per acre, or a methylated seed oil (MSO) at 1% v/v to aid in control. Apply before weeds reach 4 inches in height. See the "WEEDS CONTROLLED" section of this label for a list of weeds controlled.

For control of established weeds, this product may be  $\tan_{0 \in O} mixed$  with a burndown herbicide, such as glyphosate.

Apply this product by ground equipment in sufficient spray volume to provide uniform coverage of the site and/or weeds to be treated.

Any crop may be planted 4 months after application. Winter wheat may be planted at anytime following applications provided the combined rate applied postharvest and preemergence does not exceed the maximum labeled rate per 12 month period for the crop.

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#### POTATOES

Do not use West of the Rocky Mountains.

Do not spray over top of emerge@gotatoes.

6 0 6 6 0 0 0 0 Do not exceed 3 pints per acre per year.

Pre-emergence Application: Make a single application as a broadcast spray after planting but before crop emerges. Plant'sded at least 2 inches deep. Do not spray over top of emerged Potatoes. If beds are to be "dragged" and/or "hilled", apply after the final "dragging" or "hilling" operation. Apply before grasses are 2 inches tall and before broadleaf weeds are 6 inches tall, preferably just before or when weed seedlings emerge. If emerged weeds are present, add 1 pint Surf-Ac 820 for each 25 gallons spray mixture. In irrigated areas, best results are obtained when application is made to moist soil followed within 2 LINURON 4L Page 5 of 7 weeks by 1 to 2 inches of sprinkler irrigation for rainfall). On powder dry soils, irrigate prior to herbicide application ind follow with sprinkler irrigation to activate the herbicide. Apply 1:5 to 2.5 pints per acre on the lighter soils (sandy loams, silt loams; 1 to 2% organic matter) and 2.5 to 3 pints per acre on heavier soils (silts, clay loams; 2 to 5% organic matter); on soils over 5% oganic matter, use 3 pints per acre apply to emerged weeds (before potatoes emerge)

**East of Rocky Mountains:** Apply 1.5 to 2.5 pints per acre on the lighter soils (Sandy loams, Silt loams, 1 to 2% organic matter) and 2.5 to 3 pints per acre on heavier soils (Silts, Clay loams; 2% to 5% organic matter). On soils over 5% organic matter, apply 3 pints per acre and apply to emerged weeds before Potatoes emerge.

For improved control of annual grasses and nutsedge, see table below for tank mixes with Me-Too-Lachlor Herbicide.

#### This Product + Me-Too-Lachlor Herbicide

Soil Texture	1 to 3% Organic Matter This Product (pts.) + Me-Too-Lachlor (pts.)	3 to 5% Organic Matter This Product (pts.) + Me-Too-Lachlor (pts.)
COARSE: Sandy loam	1 to 1.5 + 1	1.5 to 2 + 1.33
MEDIUM: Loam, Silt Ioam, Silt, Sandy clay, Sandy clay loam	1.5 to 2 + 1.33	2 to 2.5 + 1.67 to 2

#### SORGHUM

Do not apply over top of emerged sorghum. Do not apply within 75 days harvest.

Do not graze or feed plants to livestock within 3 months after directed postemergence application.

**Pre-emergence Application:** Select a registered herbicide treatment for application as a tank mixture. Make a single application after planting but before crop emerges.

In soil with 1% to 2% organic matter apply 0.63 to 1.25 pints per acre on sandy loam and 1 to 1.5 pints per acre on loam, silt loam, silt, sandy clay, or sandy clay loam. In soil with 2% to 4% organic matter, apply 1 to 1.5 pints per acre on sandy loam and 1 to 2 pints per acre on loam, silt loam, silt, sandy clay, or sandy clay loam. Plant seed at least 1 inch deep on flat or raised seedbeds only as injury to the crop may result. Directed Post-emergence Application: Make a single application of this product as a directed spray; add 1 pint of Surf-Ac 820 for each 25 gallons spray mixture. If sprayer is equipped with skids, shoes or shield, apply 1 pint per acre when Sorghum is 12 inches tall (free standing plants) and weeds are up to 2 inches in height; use 1 to 2 pints per acre when Sorghum is 15 inches tall and weeds are 2 to 4 inches in height. Apply only when there is sufficient differential between height of Sorghum and weeds so that the directed spray thoroughly covers all weed foliage without contact of upper leaves or whorl or Sorghum by spray or drift as such contact may cause crop injury.

#### SOYBEANS

# Make a single preemergence application of this product per season.

Soybeans planted too shallow have increased potential for injury.

Do not exceed 2 pts. of this product in any application. Do not spray over the top of emerged soybeans.

Do not feed treated forage or hay to livestock.

#### **Preemergence Application – All Tillage Types**

Apply this product prior to sybean emergence at the rates specified in the table below. For improved control, or for a broader spectrum of control, this product may be tank mixed with such herbicides as Me-Too-Lachlor or Dual MAGNUM<sup>®</sup>, Dual<sup>®</sup> II MAGNUM, Sencor<sup>®</sup>, Synchrony<sup>®</sup> XP, Classic<sup>®</sup>, Prowl, Boundary<sup>®</sup>, Domain<sup>™</sup>, and Gangster<sup>®</sup>. For specific tank mix rate directions for this product plus Me-Too-Lachlor Herbicide, see the table below.

THIS PRODUCT ALONE		
	Pints of THIS PRODUCT per Acre	
Soil Texture	1% to 3% Organic Matter	2% to 5% Organic Matter
Coarse: Sandy loam	1 to 1.25	1.25 to 2
Medium: Loam, Silt loam, Silt, Sandy clay loam	1 to 2	1.5 to 2
Fine: Silty clay, Silty clay loam, Clay, Clay loam	1.25 to 2	2

THIS PRODUCT	Too-Lachlor Herbicic	de (Tank Mixture)	
	Product per Acre		
O. II Turking	1% to 3% Organic Matter	3% to 5% Organic Matter	
Soil Texture	THIS PRODUCT (pts.) +	THIS PRODUCT (pts.) +	
	Me-Too-Lachlor (pts.)	Me-Too-Lachlor (pts.)	
Coarse: Sandy loam	0.66 to 1.25 + 0.85	1.25 to 2 + 1.0	
Medium: Loam, Silt Ioam, Silt, Sandy clay loam,	1 to 1.66 + 1.0	1.66 to 2 + 1.33	
Fine: Silty clay, Silty clay loam, Clay, Clay loam	1.25 to 2 + 1.33	2 + 1.33 to 1.67	

# No Till, Minimum Till or Stale Seedbed

#### Timing

Apply this product up to 30 days prior to Soybean planting. For maximum in-season residual control, apply no earlier than 14 days before planting.

#### Adjuvants and Tank Mixes

For burndown control (postemergence activity), addition of adjuvant is required.

- For best results, use 1 gallon crop oil concentrate per 100 gallons of spray.
- Alternatively, use 1 quart nonionic surfactant per 100 gallons of spray.
- To burndown larger than 2 inches grasses and 6 inches broadleaves, tank mix this product with such herbicides as 2,4-D LVE, Synchrony XP, Classic, glyphosate and/or paraquat. When tank mixing this product with glyphosate, substitute nonionic surfactant (1 qt. per 100 gallons spray) for crop oil concentrate. Follow the glyphosate manufacturer's instructions for addition of ammonium sulfate:
- 1 pt. of this product + 1 pt. 2,4-D LVE + 1 gallon crop oil concentrate per 100 gallons spray will burn down the following winter annual weeds (up to 6 inches in size) as well as the weeds included in "Postemergence Use" at the beginning of this label.

ushy wallflower	Henbit
huckweed, common	Pennycress
hickweed, mouseear	Shepherdspu
utleaf evening primrose	Speedwell, co
eadnettle*	White heath a

Pennycress Shepherdspuse Speedwell, corn, field, purslane White heath aster

\* suppression

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#### WHEAT (WINTER) (DRILL-PLANTED)

#### IDAHO, OREGON, WASHINGTON

Plant seed at least 1 inch deep; when seed is planted during abnormally dry weather, treat after soil has been settled by rainfall or irrigation.

Apply as a broadcast spray prior to emergence of wheat or to semi-dormant wheat plant. Application to actively growing plants may result in temporary yellowing (chlorosis) of wheat.

Do not apply after wheat has reach the boot stage of maturity, nor when when maximum daily temperature exceeds 60°F; do not use this product in combination with other pesticides (except as noted), surfactants or control of the solution after wheat has emerged.

Crop injury may result where severe Winter Stress, Bigease or insect damage follows application and also from failure to observe correct planting depth and soil type restrictions. Do not treat wheat where winter climatic conditions have caused heaving of plants, or where plants are lacking in vigor due to poor emergence insect damage, disease, high alkalinity, or other causes.

West of Cascade Range: Make a single application of 2 to 3.5 pints per acre as soon as possible after planting. If Wheat and woeds have emerged, apply before weeds are 3 to 4 inches tall. Cuccc

**East of Cascade Range:** Make a single application of this product alone or, where specified below, as a tank mixture with Bromoxynil. If Fall-planted Wheat fails to grow due to Winter kill or adverse growing conditions after Fall treatment, allow 4 months before planting Spring wheat. Do not retreat field with a second application during the same crop year as injury to the crop may result.

Where Average Annual Rainfall Exception 16 Inches-Fall Treatment: For early Fall-planted Wheat (sel before September 10) apply 1 to 1.5 pints of this product per acre enner before or after Wheat has emerged but before weeds are 2 inches tall. Treatment after October 1 generally gives best results. Do not apply after soil freezes in the Fall. Spring Treatment: Apply 1 to 1.25 pints of this product per acre as soon as Wheat starts to grow in the Spring. Application after weeds have reached a height of 2 inches may give poor results.

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Where Average annual Rainfall is 10 to 16 Inches-Fall or Winter Treatment: After Wheat is planted in the Fall, apply 1 to 1.25 pints of this product per acre when sufficient moisture is available to germinate Wheat seed. Apply either before or after Wheat has emerged, but before weeds are 2 inches tall and before the soil freezes. Application later than March 1 may give poor results.

Where Average Annual Rainfall is 10 to 20 Inches-Fall or Spring Treatment: Apply 0.5 pint of this product plus 0.25 pound of Bromoxynil per acre as a tank mixture, either in the Fall after Wheat has emerged but before soil freezes or in the Spring as soon as soil thaws. Apply before weeds are 2 inches tall or across.

# STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and disposal. PESTICIDE STORAGE: Storage should be under lock and key and secure from access by unauthorized persons and children. Storage should be in a cool, dry area away from any heat or ignition source. Avoid storage at high temperatures. Do not stack over 2 pallets high. Move containers by handles or cases. Do not move containers from one area to another unless they are securely sealed. Keep container tightly sealed when not in use. Keep away from any puncture source. Avoid storage near water supplies, food, feed and fertilizer to avoid contamination. Avoid contamination with acids or alkalies. Store in original containers only. If the contents are leaking or material is spilled, follow these steps:

- 1. Contain spill, absorb with a material such as sawdust, clay granules or dirt.
- 2. Collect and place in suitable containers for disposal.
- 3. Wash area with water and soap to remove remaining pesticide.
- 4. Follow washing with clean water rinse.
- 5. Place a leaking container in a plastic tub and transfer contents as soon as possible to an empty original container.
- 6. Do not allow run off to enter sewer or contaminate water supplies.
- 7. Dispose of waste as indicated below.

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

#### CONTAINER DISPOSAL:

Nonrefillable Container (rigid material; less than 5 gallons): Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container one-fourth 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. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Nonrefillable Container (rigid material; 5 gallons or greater): Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill container one-fourth 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. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. (Continued)

#### ND DISPOSAL (Cont.) STORAG

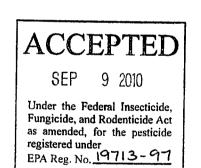
Refillable Containers: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaning 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.

# WARRANTY—CONDITIONS OF SALE

OUR DIRECTIONS FOR USE of this product are based upon tests believed reliable. Follow directions carefully. Timing and method of application, weather and crop conditions, mixtures with other chemicals not specifically recommended and other influencing factors in the use of this product are beyond the control of the seller. To the extent consistent with applicable law. Buver assumes all risks of use, storage and handling of this material not in strict accordance with directions given herewith.

To the extent consistent with applicable law, in no case shall the Manufacturer or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product when such use and/or handling is not in strict accordance with directions given herewith. The foregoing is a condition of sale by the Seller and is accepted as such by the Buyer.

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