

1381-158

9/10/2004

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

SEP 10 2004

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Dr. Alice Walker  
Regulatory Consulting  
For: Agriliance, LLC.  
481 Country Club Drive  
Senatobia, MS 38668

Dear Dr. Walker:

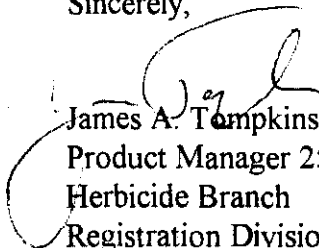
Subject: Agrisolutions Atrazine 4L  
EPA Registration Number 1381-158  
Application dated September 1, 2004  
Resubmission: Amended label per Atrazine MOA

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act as amended is acceptable, provided you make the following changes before you release the product for shipment.

- 1) Under the Engineering Controls Statements, add "for dermal protection" to the end of the statement "Human flaggers supporting aerial applications....."
- 2) Under the section Storage and Disposal, change the heading from "PESTICIDE STORAGE AND DISPOSAL" to "STORAGE AND DISPOSAL." Change the subheading "Storage" to "Pesticide Storage." Move the section "Spill or leak procedures" to the end of the STORAGE AND DISPOSAL section. Change the formatting of the Disposal section to:  
"Pesticide Disposal: (corresponding text)  
Container Disposal: (corresponding text)"

Submit one (1) copy of final printed labeling incorporating the above changes before you release the products for shipment. Amended labeling will supercede all previously accepted ones. A stamped copy of labeling is enclosed for your records. If you have any questions, please contact Hope Johnson at 703-305-5410.

Sincerely,

  
James A. Tompkins  
Product Manager 25  
Herbicide Branch

Registration Division (7505C)

**RESTRICTED USE PESTICIDE**

Due to ground and surface water concerns. For retail sale to and use only by Certified Applicators or persons under their direct supervision, and only for those uses covered by the Certified Applicator's certification.



**Atrazine 4L**

*For season-long weed control in corn, sorghum, and certain other crops*

**ACTIVE INGREDIENTS:\***

Atrazine: 2-chloro-4-ethylamino-6-isopropylamino-s-triazine.....	40.8%
Related Compounds.....	2.2%
<b>INERT INGREDIENTS:</b> .....	<b>57.0%</b>
<b>TOTAL</b>	<b>100.0%</b>

\*Contains 4 lbs. active ingredients per gal.

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

Directions for use: See inside of booklet for complete directions, for use and additional precautionary statements.

**For Professional or Agricultural Use Only**

Shake well before using.

EPA Reg. No. 1381-158

EPA Est. No. 70989-MO-1

**Distributed By**  
Agriliance, LLC  
P.O. Box 64089  
St. Paul, MN 55164-0089

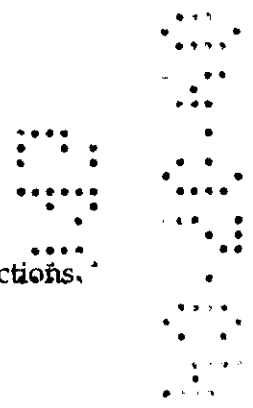
ACCEPTED  
with COMMENTS  
in EPA Letter Dated

SEP 10 2004

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

1381-158

**Net Contents**  
**2-1/2 Gals**  
**(9.48 Liters)**  
**0/1/4**



## PRECAUTIONARY STATEMENTS

### CAUTION

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if swallowed. Do not get in eyes. Avoid contact with skin, inhalation of vapors or spray mist and contamination of food and feed.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are barrier laminate, butyl or nitrile rubber, or viton. If you want more options, follow the instructions for category A on an EPA chemical resistant category selection chart.

Mixers, loaders, applicators, flaggers and other handlers must wear: long-sleeve shirt and long pants, shoes plus socks, chemical-resistant gloves such as barrier laminate, butyl or nitrile rubber, or viton, and chemical-resistant apron when mixing/loading, cleaning up spills, cleaning equipment, or other wise exposes to the concentrate. Applicators using spray equipment mounted on their backs must wear: coveralls over long-sleeve shirt and long pants, chemical-resistant footwear plus socks, chemical-resistant gloves (Category A).

See engineering controls for additional requirements.

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

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

#### ENGINEERING CONTROL STATEMENTS

Mixers and loaders supporting aerial applications at a rate greater than 3 lbs ai/A must use a closed system that meets the requirements for dermal protection listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)] and must wear the personal protective equipment required for mixers and loaders, wear protective eyewear if the system operates under pressure, and be provided and have immediately available chemical-resistant footwear for use in an emergency, such as a spill or equipment breakdown.

Pilots must use an enclosed cockpit in a manner that is consistent with the WPS for agricultural pesticides [40 CFR 170.240(d)(6)] for aerial applications. Pilots must wear the PPE required on this labeling for applicators; however, they need not wear chemical-resistant gloves when using an enclosed cockpit.

Human flaggers supporting aerial applications must use enclosed cabs that meet the definition in the Worker Protection Standard for agricultural pesticides [40 CFR 170.240(d)(6)].

When applicators use enclosed cabs in a manner that meets the requirements listed in the WPS for agricultural pesticides [40CFR 170.240(d)(5)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### USER SAFETY RECOMMENDATIONS

Users should:

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

### FIRST AID

- |                               |   |
|-------------------------------|---|
| <b>If swallowed</b>           | <ul style="list-style-type: none"> <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 do so by the poison control center or doctor.</li> </ul>   |
| <b>If on skin or clothing</b> | <ul style="list-style-type: none"> <li>• Do not give anything by mouth to an unconscious person.</li> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> </ul>  |
| <b>If in eyes</b>             | <ul style="list-style-type: none"> <li>• Call a poison control center or doctor for treatment advice.</li> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> </ul>   |
| <b>If inhaled</b>             | <ul style="list-style-type: none"> <li>• Call a poison control center or doctor for treatment advice.</li> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably to mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul> |

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of emergency call CHEMTREC at (800)424-9300.

**NOTE TO PHYSICIANS:** There is no specific antidote for atrazine. If this product is ingested, induce emesis or lavage stomach. The use of an aqueous slurry of activated charcoal may be considered.

### ENVIRONMENTAL HAZARDS

**Groundwater Protection:** Atrazine can travel (seep or leach) through soil and can enter groundwater which may be used as drinking water. Atrazine has been found in groundwater. Users are advised not to apply atrazine to sand and loamy sand soils where the water table (groundwater) is close to the surface and where these soils are very permeable, i.e., well-drained. Your local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

Product may not be mixed/loaded, or used within 50 feet of all wells, including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing or washing of this product into or from pesticide handling application equipment or containers within 50 feet of any well are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spill or equipment leaks, container or equipment rinse or washwater and rain water that may fall on the pad. Surface water shall not be allowed to either

flow over or from the pad, which means that the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain a minimum of 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad, shall have a minimum containment capacity of 100% of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above specified minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing or loading sites.

Additional state-imposed requirements regarding well-head setbacks and operational area containment must be observed.

Product must not be mixed or loaded within 50 feet of intermittent streams or rivers, natural or impounded lakes and reservoirs. Product must not be applied within 66 feet of the points where field surface water runoff enters perennial or intermittent streams and rivers or within 200 ft. of natural or impounded lakes and reservoirs. If this product is applied to highly erodible land, the 66 foot buffer or setback from runoff points must be planted to crop or seeded with grass or other suitable crop.

This pesticide is toxic to 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 when weather conditions favor drift from treated areas. Runoff and drift from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

One of the following restrictions must be used in applying atrazine to tile outletted fields containing standpipes:

- Do not apply within 66 feet of standpipes in tile-outletted fields.
- Apply this product to the entire tile-outletted field and immediately incorporate it to a depth of 2-3 inches in the entire field.
- Apply this product to the entire tile-outletted field under a no-till practice only when a high crop residue management practice is practiced. High crop residue management is described as a crop management practice where little or no crop residue is removed from the field during and after crop harvest.

#### DIRECTIONS FOR USE

ANY USE OF THIS PRODUCT IN AN AREA WHERE USE IS PROHIBITED IS A VIOLATION OF FEDERAL LAW. Before using this product, you must consult the Atrazine Watershed Information Center (AWIC) to determine whether the use of this product is prohibited in your watershed. AWIC can be accessed through [www.atrazine-watershed.info](http://www.atrazine-watershed.info), or 1-866-365-3014. If use of this product is prohibited in your watershed, you may return this product to your point of purchase or contact registrant for a refund.

Important: Read the entire Directions for Use and the Conditions of Sale and Warranty before using this product. If terms are not acceptable, return the unopened product container at once.

Do not apply this product in a way that contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**AGRICULTURAL USE REQUIREMENT**

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours. Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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, shoes plus socks, and chemical-resistant gloves such as barrier laminate, butyl or nitrile rubber, or viton.

**NON-AGRICULTURAL USE REQUIREMENT**

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.

Do not allow people or pets to enter the treated area until sprays have dried.

**PESTICIDE STORAGE AND DISPOSAL**

**Storage**

Keep this material out of the reach of children. Store only in the original container with cap securely tightened. Containers must be stored in a cool, dry, well-ventilated area. Store away from food, feeds, and fertilizers. Do not contaminate water, food, feed by storage or disposal. Groundwater contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material.

**Spill or Leak Procedures:** In the event of a spill or leak, make sure all personnel involved in spill cleanup follow good industrial hygiene practices. Small spills can be handled routinely. Cover the spill with an absorbent material such as vermiculite or sawdust to prevent dust. Sweep up the material and place in an appropriate chemical waste container. Seal container and dispose of according to pesticide disposal instructions below. Wash the spill area with a saturated solution of sodium carbonate and strong detergent. Flush the spill area with water to remove any residue. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire or other emergency, call 1-800-424-9300 day or night.

**Disposal**

**Containers:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or 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.

**Pesticide:** Do not contaminate water, food, or feed by storage or disposal, or cleaning of equipment. Open dumping is prohibited. Wastes resulting from the use of this product are acutely toxic. Improper disposal of unused pesticide, spray mixture, or rinsate is a violation of Federal Law. Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to federal, state or local procedures. For guidance in proper disposal methods, contact your State Pesticide or Environmental Control Agency, or the Hazardous waste representative at the nearest EPA Regional Office.

**GENERAL INFORMATION AND RESTRICTIONS**

Atrazine 4L herbicide will control many annual broadleaf and grass weeds in corn, sorghum, sugarcane and certain other crops specified on this label.

**Atrazine 4L Applied Alone - Corn, Grain Sorghum and other crops specified on this label.\***

**Preplant Surface-Applied, Preplant Incorporated, or Preemergence  
(or Postemergence at 4 pts./A of Atrazine 4L with Oil)**

**Broadleaf and Grass Weeds Controlled**

Annual Morningglory	Barnyardgrass (watergrass)***	Cocklebur**
Giant Foxtail**	Green Foxtail***	Groundcherry
Kochia	Lambsquarters	Large (hairy) Crabgrass**
Mustards	Nightshade	Pigweed
Purslane	Ragweed	Sicklepod**
Velvetleaf**	Wild Oats	Witchgrass (Panicum capillare)***
Yellow Foxtail***		

**Postemergence with Emulsifiable Oil or Oil Concentrate in Water (at 2.4 pts./A of Atrazine 4L)**

**Broadleaf Weeds Controlled**

Annual Morningglory	Cocklebur	Jimsonweed
Lambsquarters	Mustard	Pigweed
Ragweed	Smartweed	Wild Buckwheat
Velvetleaf**		

\*Where there are state/local requirements regarding atrazine use (including lower maximum rates and/or higher setbacks) which are different from label, the more restrictive/protective requirements apply. Certain states may have established rate limitations within specific geographical areas. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations.

\*\*Partial control only

\*\*\*Partial control only on medium- and fine-textured soils.

Atrazine may be applied before or after weeds emerge. The continuous use of this product and other triazines may cause the development of biotypes of grasses and broadleaf weeds that cannot be effectively controlled by this and related herbicides. Where this is known or suspected and

weeds controlled by this product are expected to be present along with resistant biotypes, Atrazine 4L should be either tank mixed or used in sequence with a herbicide approved for use with triazine which is not in the triazine class of chemicals. If only resistant biotypes are expected to be present, use a registered non-triazine herbicide. Read and follow all directions for use and precautions on the labels of products to be tank mixed with atrazine. Consult your state Extension Service for specific recommendations for your area.

In each case where a range of rates is given, the lower rate should be used on coarse-textured soils and soils low in organic matter, and the higher rate should be used on fine-textured soils and soils high in organic matter. Since atrazine acts mainly through root absorption, its effectiveness depends on rainfall or irrigation to move it into the root zone. Should weeds develop, a shallow cultivation or rotary hoeing will generally result in better weed control.

This product is nonflammable, noncorrosive to equipment and metal surfaces, and has low electrical conductivity.

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

When tank-mixing or sequentially applying atrazine or products containing atrazine to corn or sorghum, do not exceed an application rate of 2.0 pounds active ingredient of atrazine per acre for any single application and the total pounds of atrazine applied (lbs ai/ A) must not exceed 2.5 pounds active ingredient per year.

When tank-mixing or sequentially applying atrazine or products containing atrazine to crops other than corn or sorghum, the total pounds of atrazine applied (lbs ai/ A) must not exceed the specific seasonal rate limits as noted in the use directions.

Care should be taken to avoid using atrazine where adjacent desirable trees, shrubs or plants may be injured. Avoid using near adjacent desirable plants or in greenhouses, or injury may occur.

**Note:** Agrilience, L.L.C. does not recommend the use of Atrazine 4L in combination with other herbicides or oils, except as specifically described on this label.

#### APPLICATION PROCEDURES

**Ground Application:** Use conventional ground sprayers equipped with nozzles that provide accurate and uniform application. For the most uniform distribution of broadcast applications, use 80 degrees flat fan-type nozzles. For band applications, use flat fan even-spray nozzles. Be certain that nozzles are uniformly spaced and are of the same size and type. Calibrate sprayer before use and recalibrate at the start of each season and when changing carriers. Screens and strainers should be no finer than 50 mesh between the pump and boom. Screens on the suction side of the pump should be 16 mesh or coarser. Do not place a screen in the recirculation line.

Use a pump with capacity to: (1) provide sufficient hydraulic agitation during mixing and application to keep the material in suspension, (2) maintain 30-40 psi operating pressure, and (3) provide a minimum of 20% by-pass at all times. (At minimum, 10 gallons/minute per 100 gallon tank size). Unless otherwise specified, use a minimum of 5-10 gallons of water per acre for preplant incorporated, pre-emergence and post (with or without oil or surfactant) applications.



For band applications, calculate the amount to be applied per acre as follows:

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Rate/A for broadcast treatment} = \text{Amount needed for band treatment}$$

**Aerial Application:** For preplant and pre-emergence broadcast treatments, apply at a 1:1 ratio Atrazine 4L to water (Example: Recommendation calls for 1 quart of product and is mixed with 1 quart of water) to be applied per acre. For postemergence treatments on corn and sorghum, apply the recommended rate of Atrazine 4L plus oil in a minimum of 2 gallons of water per acre.

Avoid applications under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur. The above water volumes are the minimum to be applied per acre.

### **AERIAL SPRAY DRIFT MANAGEMENT INFORMATION**

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

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outermost 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 downward more than 45 degrees.

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

The applicator should be familiar with and take into account the information covered in the "Aerial Drift Reduction Advisory Information."

#### **Aerial Drift Reduction Advisory Information**

This section is advisory in nature and does not supersede the mandatory label requirements.

#### **Information on Droplet Size**

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

### Controlling Droplet Size

**Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

**Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

**Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.

**Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the 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 2-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

### Temperature and Humidity

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

### Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

### Sensitive Areas

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

**Atrazine 4L in Water Applications:** Atrazine 4L, a liquified formulation, should be mixed with water and applied as a spray. Pour Atrazine 4L into the tank during or after filling. Hydraulic (jet) or mechanical agitation is recommended during mixing and application to keep the material in suspension. All return lines to the tank must discharge below liquid level and agitation should not be so violent as to cause air bubbles to form in the liquid. Wash sprayer thoroughly after use.

**Atrazine 4L in Liquid Fertilizer Application:** Nitrogen solutions or complete liquid fertilizers may replace all or part of the water as a carrier for pre-emergence, preplant incorporated, or preplant surface ground application on corn and sorghum. Mixing should be accomplished as described under "Water Application." Do not apply in nitrogen solution to complete liquid fertilizer after corn or sorghum emerges or crop injury may occur. Check the compatibility of this product with liquid fertilizer and/or nitrogen solution, as shown below, before use.

**Compatibility Test:** Always check compatibility of liquid fertilizers with herbicide(s) each time before use. Be especially careful when using complete suspension or fluid fertilizers as serious compatibility problems are more likely to occur. Commercial application equipment may improve compatibility in some instances. The following test assumes a spray volume of 25 gal./A. For other spray volumes, make appropriate changes in the ingredients.

Check compatibility using this procedure:

1. Add 1 pt. of fertilizer to each of two (2) 1-qt. jars with tight lids.
2. To one of the jars, add 1/4 tsp. or 1.2 milliliters of a compatibility agent (1/4 tsp. in 1 pt. is equivalent to 2 pts. per 100 gals. of spray). Shake or stir gently to mix.
3. To both jars add the appropriate amount of herbicide (see below). If more than one herbicide is used, add them separately (dry herbicides first, flowables next and emulsifiable concentrates last). After each addition, shake or stir gently to thoroughly mix. The appropriate amount of herbicide for this test is:

Dry herbicides - For each 1 lb. per acre rate, add 1.5 level tsp. to each jar.

Liquid herbicides - For each 1 pt. per acre rate, add 0.5 tsp. (2.5 ml.) to each jar.

4. After adding all ingredients, put lids on tightly and invert each jar 10 times to mix. Let the mixtures stand 15 minutes and then look for separation, large flakes, precipitates, gels, heavy oil film on the jar, or other signs of incompatibility. Determine if the compatibility agent is needed in the spray mixture by comparing the two jars. If either mixture separates but can be remixed readily, the mixture can be sprayed as long as good agitation is used. If the mixtures are incompatible, try adding half the compatibility agent to the fertilizer and half to the herbicide, before combining the herbicide and fertilizer. If incompatibility is still observed, do not use mixture.

**Atrazine 4L Applications in Water plus Emulsifiable Oil or Oil Concentrate:** The addition of emulsifiable oil (petroleum-derived, petroleum-derived oil concentrate, or single or mixed crop derived oil concentrate) to post emergence water-based sprays in corn and sorghum may improve weed control. However, under certain conditions, the use of either type of oil may seriously damage corn or sorghum. To minimize the possibility of damage, follow the directions, procedures and precautions given below.

Use one of the following properly emulsified:

A suitable oil concentrate containing at least 1%, but not more than 20%, suitable emulsifier or surfactant blend.

A petroleum derived oil containing at least 1% suitable emulsifier.

**Note:** In the event of a compatibility problem when mixing oil with this product and water, a compatibility agent should be used. Any of the above oils contaminated with water or other materials can cause compatibility problems and/or crop injury.

#### MIXING PROCEDURES - ALL USES

- (1) Thoroughly clean sprayer prior to use. Do not use sprayer contaminated with 2,4-D or other materials as crop damage or sprayer clogging may result.
- (2) Fill spray tank one-fourth full with clean water, nitrogen solution or complete liquid fertilizer.
- (3) With the agitation system in operation, such that there is a rippling or rolling action on the liquid surface, add the atrazine. Continue filling tank with water, nitrogen solution, or complete liquid fertilizer, until 90% full. Increase agitation if necessary to maintain surface action.
- (4) Add emulsifiable oil, oil concentrate, or tank mix herbicides last, after this product is thoroughly suspended. Finish filling tank.
- (5) Empty the tank as completely as possible before refilling to prevent a buildup of oil or emulsifiable concentrate residue in the tank. Keep the agitation system in operation to avoid separation of materials in any mixture remaining in the tank.

- (6) If an oil or emulsifiable concentrate film starts to build up in the tank, drain the tank and clean out with a strong detergent solution or solvent.
- (7) Clean the sprayer thoroughly immediately after using by flushing the system with water containing a detergent.

#### ROTATIONAL CROP SUGGESTIONS - ALL USES

- (1) Land treated with Atrazine 4L should not be planted to any crop except corn or sorghum until the following year or injury may occur.
- (2) If atrazine is applied after June 10, do not rotate with crops other than corn or sorghum the next year or crop injury may occur.
- (3) In the High Plains and Intermountain areas of the West where rainfall is sparse and erratic or where irrigation is required, use Atrazine 4L only when corn or sorghum is to follow corn or sorghum, or a crop of untreated corn or sorghum is to precede other rotational crops.
- (4) In western Minnesota, eastern parts of the Dakotas, Nebraska and Kansas, corn or sorghum treated with Atrazine 4L should not be followed with soybeans if the broadcast rate applied was more than 4 pints per acre (or comparable rate in a band) or soybean injury may occur.
- (5) Injury may occur to soybeans planted the year following an atrazine application on soils having a calcareous surface layer.
- (6) Do not plant sugarbeets, tobacco, vegetables (including dry beans), spring-seeded small grains, or small-seeded legumes and grasses the year following an atrazine application or injury may occur.

#### CORN:

**ATRAZINE 4L ALONE:** Apply either before planting, at planting or after planting as indicated below. For soil applications prior to crop emergence (i.e., early preplant, preplant incorporated, preplant surface, at planting or preemergence) see Table 1.

**Preplant Surface-Applied (Broadleaf and Grass Control):** Use on medium- and fine-textured soil with minimum-tillage or no tillage systems only in CO, IL, IN, IA, KS, KY, MN, MO, MT, NE, ND, SD, WI and WY. Apply the recommended rate of Atrazine 4L shown in Table 1 up to 45 days prior to planting. On coarse textured soils, do not apply more than two weeks prior to planting. If an unsatisfactory length of weed control results from adverse environmental conditions following early treatment, a follow-up application of an appropriately labeled herbicide may be used. If the follow-up treatment includes atrazine, do not exceed the labeled rate for corn indicated in Table 1.

If weeds are present at the time of treatment, apply in a tank mix combination with a contact herbicide (For example, Gramoxone® Extra or Roundup®). Observe directions for use, precautions and restrictions on the label of the contact herbicide.

**Note:** To the extent possible, do not move treated soil out of the row or move untreated soil to the surface during planting, or weed control will be diminished.

**Preplant Incorporated (Broadleaf and Grass Control):** Broadcast in the spring after plowing at the rate indicated in Table 1. Application may be made before, during or after final seedbed preparation. If soil is tilled or worked after application, avoid deep incorporation of Atrazine 4L. Best results have been obtained when Atrazine 4L is applied within two weeks prior to planting.

**Preemergence or At-Planting (Broadleaf and Grass Control):** Apply during or shortly after planting prior to weed emergence at the rate indicated in Table 1.

**Postemergence (Broadleaf and Grass Control):** Apply before weeds exceed 1.5 inches in height and before corn reaches 12 inches in height. For postemergence applications, if there has been no previous soil application to that crop, the maximum rate is 2 pounds a.i./A. If there has been a previous soil application to that crop, do not exceed a total of 2.5 pounds a.i./A per calendar year. Apply at the rate indicated in Table 1.

**Table 1 - For Control of Broadleaves and Grasses in Corn\***

<p><b>FOR ALL SOIL APPLICATIONS PRIOR TO CROP EMERGENCE</b></p> <p><b>On Highly Erodible Soils</b> If conservation tillage is practiced, resulting in at least 30% of the soil covered with plant residues at planting, apply a maximum of 2 pounds a.i./A (4 pts./A of Atrazine 4L) as a broadcast spray.</p> <p>If less than 30% of the soil is covered by plant residue at planting, a maximum of 1.6 pounds a.i./A (3.2 pts./A of Atrazine 4L) may be applied.</p> <p><b>On Soils That Are Not Highly Erodible</b> Apply 4 pts./A of Atrazine 4L (2 lbs ai/A maximum) as a broadcast spray.</p> <p><b>FOR POSTEMERGENCE APPLICATION</b> Post-emergent applications to corn must be made before the crop reaches 12 inches in height. If no atrazine was applied prior to corn emergence, apply a maximum of 4 pts./A of Atrazine 4L broadcast (2 lbs ai/A). If a postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 lbs. active ingredient (5 pts. of this product) per acre per calendar year.</p>
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\*For preplant or preemergence applications (western Kansas, western Nebraska, eastern Colorado, eastern Wyoming, New Mexico, western Texas and the Panhandle of Oklahoma): On sand, loamy sand, sandy loams, mild to strong alkaline soils and all recently leveled soils, apply no more than 2.4 pints per acre for broadleaf weed control, either preplant surface, preplant surface incorporated, or preemergence. Many broadleaf weeds including pigweed, lambsquarters, nightshade, purslane and kochia will be controlled. On other soil types in the areas above, make applications at the rate shown in Table 1 for broadleaf and grass control.

Where there are state/local requirements regarding atrazine use (including lower maximum rates and/or higher set-backs) which are different from the label, the more restrictive/protective requirements must be followed. Certain states may have established rate limitations within specific geographical areas. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations.

**Postemergence Broadleaf Weed Control with Atrazine 4L plus Emulsifiable Oil or Oil Concentrate in Water:** Broadcast 2.4 pints per acre for control of many broadleaf weeds including annual morningglory, cocklebur, lambsquarters, mustard, pigweed, ragweed, smartweed and wild buckwheat. Application should be made before pigweed and lambsquarters reach 6 inches in height and before all other weeds reach 4 inches in height and before corn reaches 12 inches in height. Add emulsifiable oil at the rate of 1 gallon per acre for ground applications and one-half

gallon per acre for aerial applications. A cultivation may be necessary if all weeds are not controlled or if regrowth of weeds occur.

**Postemergence Broadleaf and Grass Weed Control with Atrazine 4L plus Emulsifiable Oil or Oil Concentrate in Water:** Broadcast 4 pints per acre after weed emergence, but before weeds reach 1.5 inches in height and before corn reaches 12 inches in height. Add the following volume of one of the type oils indicated for aerial or ground application unless the oil label specifies otherwise.

Type Oil	Ground Application	Aerial Application
Oil Concentrate (crop or petroleum-derived)	1 qt./A	1/2-1 qt./A
Petroleum-derived oil	1 gal./A	2 qts./A

**Note:** Crop-derived or petroleum-derived oil concentrates should contain at least 1%, but no more than 20% suitable emulsifier or surfactant blend. Petroleum-derived oil should contain at least 1% suitable emulsifier.

**Precautions for Applications of Atrazine 4L plus Emulsifiable Oil in Water to Corn:**

- (1) Do not use oils in sprays when treating inbred lines or any breeding stock as severe injury may occur.
- (2) Adding other insecticides, herbicides, liquid fertilizers or other materials is not recommended with atrazine and emulsifiable oil in water because they may cause compatibility problems or crop injury.
- (3) Store and handle emulsifiable oil carefully. Oil contaminated with even a small amount of water may not emulsify properly when added to the tank.
- (4) Do not use oil in atrazine sprays when crop is under stress from prolonged cold, wet weather, poor fertility, or other factors, or when crop is wet and succulent from recent rainfall, as crop injury may occur.
- (5) Do not exceed 2.5 lbs. active ingredient (or 5 pts. of this product) per acre per calendar year.
- (6) Postemergence application to corn must be made before corn exceeds 12 inches in height.

**Tank Mixtures with Atrazine 4L on Corn:**

This product may be tank mixed with these herbicides for control of certain broadleaf and grass weeds in corn:

- |                                  |                           |
|----------------------------------|---------------------------|
| Alachlor                         | Dual + Princep + Roundup  |
| Alachlor + Gramoxone Extra       | Gramoxone Extra           |
| Alachlor + Roundup (glyphosate)  | Princep                   |
| Dual® + Roundup                  | Princep + Gramoxone Extra |
| Dual + (metolachlor)             | Princep + Roundup         |
| Dual + Gramoxone Extra           | Ramrod® (propachlor)      |
| Dual + Princep®                  | Roundup                   |
| Dual + Princep + Gramoxone Extra | Sutan®                    |

Use tank mix directions appearing on the labels of the above herbicides when tank mixing with this product. Observe all precautions and limitations on labeling of products used in a particular tank

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mix. When the labels of the above herbicides refer to Atrazine 80W, use equivalent rates of Atrazine 4L. One pound of 80W equals 1.6 pints of 4L.

**Atrazine 4L plus Gramoxone Extra:** For control of existing vegetation and residual control where corn will be planted directly into a cover crop, established sod or in previous crop residues: Broadcast 4 pints Atrazine 4L and 1-2 pints Gramoxone Extra per acre in 20-60 gallons of water per acre. Add 8 ounces of nonionic surfactant per 100 gallons of dilute spray. Add Atrazine 4L to spray tank first and thoroughly mix with water. Add the paraquat and surfactant last. Refer to Gramoxone Extra label for further directions, limitations and cautions.

**Atrazine 4L plus Alachlor 4EC:** Use a tank-mixture of Atrazine 4L plus Alachlor 4EC for the control of many annual broadleaf and grass weeds in corn (field and silage corn only) including annual morningglory, barnyardgrass, black nightshade, Brachiaria, buttonweed (velvetleaf), carpetweed, cocklebur, crabgrass, fall panicum, Florida pusley, giant foxtail, green foxtail, yellow foxtail, goosegrass, lambsquarters, pigweed, purslane, mustard, common ragweed, smartweed and witchgrass.

Make applications at the rates indicated in Table 2. For preplant applications, apply within 7 days of planting and incorporate to a depth of 2-3 inches. For preemergence applications, apply to the soil surface after planting, but before the crop or weeds emerge. For postemergence treatments, make applications until weeds reach the 2-leaf stage, and the corn is no more than 3 inches tall.

**Table 2. Tank Mixtures of Atrazine 4L plus Alachlor 4EC on Corn (Field and Silage Only)**

Broadcast Rate Per Acre				
Less than 3% organic matter			More than 3% organic matter	
Soil Texture	Atrazine 4L (pts./A)	Alachlor 4EC (pts./A)	Atrazine 4L (pts./A)	Alachlor 4EC (pts./A)
Light sandy soils	2	1.5	2	1.5
Silt loam soils	2-2.4	1.5-1.75	2-2.4	1.75-2
Heavy clay soils	2.4-3.2	2-2.5	2.4-3.2	2-2.25

**NOTE:** Apply in a minimum of 20 gallons of water per acre. Non-pressure fluid fertilizer may replace all or part of the water used as a carrier for application applied to the soil surface before crop emerges. Add the Atrazine 4L to the spray tank first and thoroughly mix with water. Add the Alachlor last.

At least 12 weeks must elapse following treatment with Atrazine 4L plus Alachlor 4EC before immature corn forage can be harvested or fed to cattle. Refer to the Alachlor 4EC label for further directions, limitations and cautions.

**Princep 80W, Princep 4L, or Princep Caliber®:** In addition to the weeds listed under GENERAL DIRECTIONS for CORN, this combination also controls crabgrass, fall panicum, and carpetweed. Broadcast tank mix before planting, at planting or after planting, but before crop and weeds emerge, at rates in Table 2A. Use the 1:1 ratio for control of most weeds. Use the 1:2 ratio for expected heavy infestations of crabgrass and fall panicum. Cultivate shallowly if weeds develop.



**Preplant Surface-Applied:** Use on medium and fine-textured soils with minimum tillage or no tillage systems only in CO, IA, IL, IN, KS, KY, MN, MO, MT, ND, NE, SD, WI and WY. Apply the recommended rate of Atrazine 4L and Princep shown in Table 2A up to 45 days prior to planting. Refer to the ATRAZINE 4L ALONE section for information if weeds should develop following early treatment. On coarse-textured soils, do not apply more than 2 weeks prior to planting. Refer to the ATRAZINE 4L ALONE, preplant surface-applied section under CORN for additional details. If weeds are present at the time of treatment, apply in a tank mix combination with a contact herbicide such as a paraquat product or Roundup. Observe directions for use, precautions, and restrictions on the label of the contact herbicide.

**Note:** To the extent possible, do not move treated soil out of the row or move untreated soil to the surface during planting, or weed control will be diminished.

**Preplant Incorporated:** Apply to the soil and incorporate in the spring before, during, or after final seedbed preparation. Avoid deep incorporation. For best results, apply within 2 weeks prior to planting.

**Preemergence:** Apply during or shortly after planting, but before crop and weeds emerge. Refer to CORN section of this label and to Princep 80W, Princep Caliber 90, or Princep 4L labels for further directions, limitations, and precautions.

**Table 2A. Tank Mixtures with Princep for Weed Control in Corn**

Broadcast Rate Per Acre				
Soil Texture	1:1 Ratio*		1:2 Ratio**	
	Atrazine 4L (pts./A)	Princep 80W† (lbs./A)	Atrazine 4L (pts./A)	Princep 80W† (lbs./A)
Sand, loamy sand, sandy loam	2	1.25	1.32	1.67
Loam, silt loam, silt, clay loam, sandy clay loam, silty clay loam, sandy clay, or silty clay with low organic matter	2.4	1.5	1.6	2
Loam, silt loam, silt, clay loam, sandy clay loam, silty clay loam, sandy clay, or silty clay with medium to high organic matter, and clay (including dark prairie soils of the Corn Belt)	3	1.8	1.92	2.4

\*For control of most weeds.

\*\*For control of expected heavy infestations of crabgrass and fall panicum.

†When using Princep Caliber 90 or Princep 4L, use equivalent rates. One (1) lb. of Princep 80W = 0.9 lb. of Princep Caliber 90 or 1.6 pts. of Princep 4L.

**Princep 80W, Princep 4L, or Princep Caliber 90 plus Roundup:** Use as a tank mixture for preemergence and postemergence control of certain broadleaf and grass weeds where corn will be

planted directly into a cover crop, established sod, or in previous crop residues. Refer to the Roundup label for all directions, weeds controlled, precautions and limitations.

**Princep 80W, Princep 4L, or Princep Caliber 90 plus Gramoxone Extra:** Use as tank mixture with Princep and Gramoxone Extra to kill existing vegetation and for residual weed control where corn will be planted directly into a cover crop, established sod, or previous crop residues. Add this product and Princep to water in spray tank, agitating until thoroughly mixed. Then add Gramoxone Extra or Paraquat CL and a nonionic surfactant. Continue agitation during application. Broadcast 2-4 pts. of this product plus 1.25-2.5 lbs. of Princep 80W (or 2-4 pts. of Princep 4L, or 1.1-2.2 lbs. of Princep Caliber 90) plus the recommended labeled rate of Gramoxone Extra for this tank mixture, in 20-60 gallons of water per sprayed acre. Apply before, during or after planting, but before the corn emerges. Add 0.5 pts. of a nonionic surfactant per 100 gallons of spray mixture. Use the higher rate of Gramoxone Extra specified on the label if existing vegetation is 4-6 inches tall. This mixture will not control weeds taller than 6 inches. Refer to further limitations and precautions on the label for this product, Princep and Gramoxone Extra or Paraquat CL.

**Precautions for all Applications to Corn:**

- (1) The maximum application rate for corn, including tank mixtures and sequential treatments, is 2.5 lbs. active ingredient per acre per calendar year. Therefore, do not apply more than 5 pts. of Atrazine 4L on corn in any one year.
- (2) Following harvest of a treated crop, plow (moldboard or disk-plow) and thoroughly till the soil in the fall or spring to minimize possible injury to rotational spring-seeded crops, regardless of the rate used.
- (3) For best control of velvetleaf and cocklebur, the application rate cannot be less than 2 pounds per acre of active ingredient, either alone or in tank mix combinations.
- (4) Do not graze treated areas for 21 days following application.
- (5) Field Corn: Do not harvest for forage within 60 days of application.
- (6) Sweet Corn: Do not harvest for forage within 45 days of application.

For postemergence applications plus emulsifiable oil, see additional precautions under that section of the label.

**SORGHUM AND SORGHUM-SUDAN HYBRIDS (GRAINS AND FORAGE TYPES):**

Atrazine 4L may be applied either before planting or after planting as indicated below. For soil applications prior to crop emergence (i.e., early preplant, preplant incorporated, preplant surface, at planting or pre-emergence), see Table 1.

**Preplant Incorporated (Broadleaf and Grass Control):** Broadcast in the spring after plowing at the rate indicated in Table 3. Application may be made before, during or after final seedbed preparation. If soil is tilled or worked after application, avoid deep incorporation of Atrazine 4L. For best results, apply within two weeks prior to planting.

**Preplant Surface Applied (Broadleaf and Grass Control):** Use on medium and fine textured soils with minimum tillage systems only in CO, IA, IL, IN, KS, KY, MN, MO, MT, ND, NE, SD, WI and WY. Apply the recommended rate of Atrazine 4L shown in Table 3 up to 45 days prior to planting. If an unsatisfactory length of weed control results from adverse environmental conditions following early treatment, a follow-up application of appropriately labeled herbicide may be used.

If the follow-up treatment includes atrazine, do not exceed the labeled rate for corn indicated in Table 1. Under dry conditions, irrigation after application is recommended to move atrazine into the soil. If weeds are present at time of treatment, apply in a tank mix combination with a contact herbicide such as Gramoxone Extra or Paraquat CL, or Roundup. Observe directions for use, precautions and restrictions on the label of the contact herbicide.

**Note:** To the extent possible, do not move treated soil out of the row or move untreated soil to the surface during planting or weed control will be diminished.

**Preemergence or At-Planting (Broadleaf and Grass Control):** Apply during or shortly after planting, but prior to weed or crop emergence at the rate indicated in Table 3.

**Postemergence (Broadleaf and Grass Control):** Apply at rate shown in Table 3 before weeds exceed 1.5 inches in height, and before sorghum is taller than 12 inches.

**Table 3. Broadleaf and Grass Weed Control in Sorghum (1)(2)**

**FOR ALL SOIL APPLICATIONS PRIOR TO CROP EMERGENCE**

**On Highly Erodible Soils**

If conservation tillage is practiced, leaving at least 30% of the soil covered with plant residues at planting, apply a maximum of 2 pounds a.i./A (4 pts./A of Atrazine 4L) as a broadcast spray.

If the soil coverage with plant residue is less than 30% at planting, a maximum of 1.6 pounds a.i./A (3.2 pts./A of Atrazine 4L) may be applied.

**On Soils Not Highly Erodible**

Apply 4 pts./A of Atrazine 4L (2 lbs. ai/A maximum) as a broadcast spray.

**FOR POSTEMERGENCE APPLICATION**

Post-emergent applications to sorghum must be made before the crop reaches 12 inches in height. If no atrazine was applied prior to sorghum emergence, apply a maximum of 4 pts./A of Atrazine 4L (2 lbs ai/A) broadcast.

If a postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 lbs. active ingredient (5 pts. of this product) per acre per calendar year.

(1) Atrazine 4L should not be applied preplant surface or preplant incorporated to sorghum grown in AL, AR, FL, GA, LA, MS, NC, NM, OK, SD, TN, or TX. Do not apply pre-emergence to sorghum grown in NM, OK, or TX, except in northeast OK and the TX Gulf Coast and Blacklands areas.

(2) Where there are state/local requirements regarding atrazine use (including lower maximum rates and/or higher set-backs) which are different from the label, the more restrictive/protective requirements apply. Certain states may have established rate limitations within specific geographical areas. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations.

In case of planting failure, sorghum or corn may be replanted into soil previously treated with Atrazine 4L. Do not make a second broadcast application or injury may occur. If Atrazine 4L is applied in a band and sorghum is replanted in the untreated row middles, Atrazine 4L can be

applied in a band to the second planting provided the maximum application rate of 2.5 a.i./A per calendar year is not exceeded.

**Preemergence Broadleaf Weed Control in Furrow Irrigated, Bedded Sorghum (AZ and CA only):**

For preemergence control of many broadleaf weeds, broadcast 1.6-2.4 pts./A of Atrazine 4L after bed preparation, during or after planting, but before sorghum and weeds emerge and before the first furrow irrigation. Follow with several regular irrigations, making sure to thoroughly wet all soil.

**Precautions for Preemergence Application to Furrow Irrigated Bedded Sorghum in AZ and CA:**

To avoid possible sorghum injury, do not use on sand or loamy sand soil or on sorghum planted in furrows. Application to sorghum growing on alkali soils or where cuts, fills, or erosion have exposed calcareous or alkali subsoils may cause crop injury. In case of crop failure, do not replant sorghum for 8 months following application. Corn may be planted immediately.

**Postemergence Broadleaf Weed Control with Atrazine 4L plus Emulsifiable Oil or Oil Concentrate in Water:**

Broadcast 2.4 pts./A of Atrazine 4L for control of broadleaf weeds including annual morningglory, cocklebur, lambsquarters, mustard, pigweed, ragweed, smartweed and wild buckwheat. Application should be made before pigweed and lambsquarters reach 6 inches in height and before all other weeds reach 4 inches in height. In CO, western KS, NM, OK, TX, and other desert regions of AZ and CA, apply when sorghum is 6-12 inches in height, but before it reaches the boot stage. In all other areas, apply after sorghum reaches 3-leaf stage and before it exceeds 12 inches in height. Add emulsifiable oil at the rate of 1 gallon of emulsifiable oil/A for ground applications and 0.5 gal./A for aerial applications. Add 1 qt./A of oil concentrate for ground application. A cultivation may be necessary if all weeds are not controlled or if regrowth of weeds occur.

For a more complete list of the weeds controlled, see "Broadleaf and Grass Weeds Controlled with Atrazine Alone" under "GENERAL INFORMATION."

**Precautions for Applications of Atrazine 4L plus Emulsifiable Oil in Water to Sorghum:** See precautions under "Atrazine plus Emulsifiable Oil or Oil Concentrate in Water Applications to Corn."

**Postemergence Broadleaf Weed Control with Atrazine 4L plus Surfactant (CO, western KS, NM, OK, TX, and desert regions of AZ and CA only):** Broadcast 2.4 pts./A Atrazine 4L plus .75 to 1.5 pts. of surfactant after sorghum reaches 6 inches in height, but before weeds reach 1.5 inches in height. Apply only on sandy loam and finer textured soils.

**Precautions for All Applications to Sorghum:**

(1) Heavy rains immediately following application tend to result in excessive concentrations of herbicide in seed furrow, resulting in possible crop injury. Applications to furrow-planted sorghum should not be made until furrows are leveled (plowed in). Deep planter marks or seed furrows should also be leveled before application.

(2) Application made to sorghum growing under stress caused by minor element deficiency or to sorghum growing on highly calcareous soils may result in crop injury.

- (3) Following harvest of a treated crop, plow (moldboard or disk-plow) and thoroughly till the soil in the fall or spring to minimize possible injury to rotational spring-seeded crops, regardless of rate used.
- (4) Crop injury may occur when this herbicide is either applied preplant incorporated or preemergence in conjunction with an at-planting systemic insecticide.
- (5) The maximum application rate for sorghum, including tank mixtures and sequential treatments, is 2.5 lbs. active ingredient (5 pts. of this product) per acre per calendar year.
- (6) For all soil applications prior to crop emergence (except for preemergence use on bedded sorghum in AZ and CA), do not apply to coarse-textured soils, i.e., sand, sandy loam, or to medium- and fine-textured soils having less than 1% organic matter, or injury may occur.
- (7) For postemergence applications, do not apply to sand or loamy sand, or injury may occur.

**Note:** Do not graze treated areas for 21 days following application. Do not harvest for forage within 60 days of a pre-emergence application and 45 days of a post-emergent application.

**Rotational Crop Suggestions:** See "Rotational Crop" recommendation under Corn.

#### **Tank Mixtures For Grain Sorghum**

**Dual 8E:** Use as a tank mixture with Dual 8E for control of those weeds listed on the Dual 8E label, as well as on this label. Use this tank mixture only on sorghum seed treated with Concep. Refer to the Dual 8E label for all directions, precautions and limitations.

#### **WINTER WEED CONTROL IN TEXAS**

For postemergence control of winter weeds only, such as henbit, seedling dock, and annual thistle on fall bedded land in the Gulf Coast and Blacklands of Texas, apply 0.8-1 qt./A of Atrazine 4L postemergence to the weeds in November or December to land that will be planted to corn, grain sorghum or forage sorghum the following spring. For best results, add a suitable surfactant, at the rate of 0.5% of the spray volume, or an emulsifiable oil at the rate of 1.0% of the spray volume.

Normal weed control programs may be used in the following corn, grain sorghum, or forage sorghum crop.

**Note:** Do not plant any crops except corn, grain sorghum or forage sorghum the spring following this treatment, or illegal residues may result.

#### **CHEMICAL FALLOW**

**Precautions:** For soils in North and South Dakota with a pH of 7.5 or greater, do not apply more than 1.5 pounds active ingredient per acre for any application. Do not apply more than one application per year. For soils in North and South Dakota with a pH of less than 7.5, do not apply more than 2 pounds active ingredient per acre for any application. Do not apply more than one application per year. For all other locations, do not apply more than 2.25 pounds active ingredient per acre for any application. Do not apply more than one application per year.

#### **ATRAZINE 4L ALONE**

**Wheat-Sorghum-Fallow:** To control annual broadleaf and grass weeds following wheat harvest and in the following sorghum crop, when grown under minimum tillage, broadcast 4.5 pts./A of Atrazine 4L to wheat stubble immediately following wheat harvest. If weeds are present at application, remove them with a sweep plow or other suitable implement after application, or use

an approved contact herbicide before or after application of Atrazine 4L. Plant sorghum into wheat stubble the following spring with minimum soil disturbance. Use a surface planter or a planter leaving a shallow furrow. If weeds are present at sorghum planting, remove them with a sweep plow or other suitable implement before planting. For the list of weeds controlled, see the list under "GENERAL INFORMATION."

**Precautions for Weed Control in Chemical Fallow:** (1) Use only on silt loam or finer textured soil, or crop injury may result. (2) Wheat-Sorghum-Fallow cropping sequence must be followed. (3) Do not apply following sorghum harvest.

**Note:** Do not graze or feed forage from the treated area to livestock. To avoid illegal residues and crop injury, do not plant any crop other than those on this label within 18 months following treatment.

**Wheat-Corn-Fallow: (CO, KS, ND, NE, SD, and WY):** This product controls cheatgrass (downy brome, chess), kochia, mustards, pigweed, Russian thistle, wild lettuce, wild sunflower, and volunteer wheat during the period after wheat harvest. Weed control may extend into the following corn crop grown under minimum tillage. On soils in ND and SD with a pH greater than 7.5, do not exceed 1.5 lb. a.i./A Atrazine 4L. For soils with a pH less than 7.5 in ND and SD, apply 1-2 lb. a.i./A. Use the higher rate on finer textured soils and where heavy weed infestations are expected. Use the lower rate on coarse textured soils and where light weed infestations are expected. In the event grasses are present in the following spring, use a grass herbicide registered for use on corn. Follow directions for use, notes and precautions in the Wheat-Sorghum-Fallow section above, substituting corn where references to sorghum are made.

**Wheat-Fallow-Wheat (CO, KS, ND, NE, SD and WY):** For preemergence control of cheatgrass (downy brome, chess), common lambsquarters, field pennycress, kochia, mustard, Russian thistle, wild lettuce, and suppression of volunteer wheat during fallow period of a wheat-fallow-wheat rotation, broadcast 1-2 pts./A of Atrazine 4L on all soils except those listed under Precautions. For control of pigweed and wild sunflower, use only the higher rate. Apply to stubble ground. Treat only once during the same fallow period.

#### TANK MIXTURES FOR CHEMICAL FALLOW

##### Wheat-Sorghum-Fallow or Wheat-Corn-Fallow (KS, NE)

**Gramoxone Extra:** If weeds are present at application, a tank mix with Gramoxone Extra may be used. Broadcast 4.5 pints of Atrazine 4L plus a suitable amount of Gramoxone Extra in 20-60 gallons of water per acre by ground equipment. Add 0.5-1 pint of nonionic surfactant per 100 gallons of spray mixture. Add this product to the spray tank first and thoroughly mix with water. Then add Gramoxone Extra followed by surfactant. Use the higher rate of Gramoxone Extra specified on label if weeds are 4-6 inches tall. This mixture will not control weeds taller than 6 inches. Apply to stubble ground. Treat only once during the same fallow period. Refer to label for Gramoxone Extra for further directions, precautions and limitations.

##### Wheat-Fallow-Wheat (CO, KS, ND, NE, SD, and WY)

**Gramoxone Extra:** If weeds are present at application, a tank mix with Gramoxone Extra may be used. Broadcast 1-2 pints of Atrazine 4L plus a suitable amount of Gramoxone Extra in 20-60 gallons of water per acre by ground equipment. Add 0.5 to 1 pint of a nonionic surfactant per 100 gallons of spray mixture. Add this product to the spray tank first and thoroughly mix with water.

Then add Gramoxone Extra followed by surfactant. Use the higher rate of Gramoxone Extra specified on label if weeds are 4-6 inches tall. This mixture will not control weeds taller than 6 inches. Apply to stubble ground. Treat only once during the same fallow period. Refer to label for Gramoxone Extra for further directions, precautions and limitations.

If weeds are present at application of this product alone, use an approved contact herbicide either before or after treatment, or tillage after treatment. Use tillage to control weeds which escape during fallow period. Till before planting. For this product applied alone or in tank mixture with Gramoxone Extra, plant at least 2 inches deep and 12 months or more after application.

**Precautions:** To avoid crop injury, (1) do not use on sandy soil. (2) Do not treat eroded hillsides, caliche and rocky outcroppings, or exposed calcareous subsoil. (3) Do not treat soils of the Rosebud and Canyon series in western Nebraska and adjoining counties in CO and WY. (4) Do not treat soils with calcareous surface layers. (5) Avoid spray overlap.

**Note:** Do not graze treated areas within 6 months after application.

**Aerial Application:** In order to assure that spray will be controllable within the target area when used according to label directions, make applications at a maximum height of 10 ft., using low drift nozzles at a maximum pressure of 40 psi, and restrict application to periods when wind speed does not exceed 10 mph. To assure that spray will not adversely affect adjacent sensitive nontarget plants, apply Atrazine 4L by aircraft at a minimum upwind distance of 400 ft. from sensitive plants.

#### **CONSERVATION RESERVE PROGRAM (CRP) (NE, OK, OR AND TX)**

**For Control or Suppression of the Following Weeds:** Annual ragweeds, barnyardgrass, black nightshade, cheat, cocklebur, downy brome, fall panicum, field pennycress, giant foxtail, yellow foxtail, Japanese brome, Kentucky bluegrass, kochia, lambsquarters, little barley, marestalk, pigweed, prickly lettuce, smooth brome, and sunflower, refer to directions, notes, and precautions below.

**Pure Stands of Newly Seeded Big Bluestem, Switchgrass and Eastern Gamagrass:** Use only on loam, silt loam, silty clay loam, clay loam, and silty clay soils with at least 1% organic matter.

**Establishment:** Broadcast 2 qts./A of Atrazine 4L preplant incorporated or preemergence at time of seeding and prior to emergence of weeds. Prepare a good firm seedbed. Plant 1/2 inch deep with a grassland drill (preferred method) or a conventional drill. If a conventional drill is used on prepared seedbeds, remove all tension from the disk openers. For best results, cultipack or roll after planting.

#### **Renovation of Existing Stands of Big Bluestem and Switchgrass Planted on CRP Acres:**

Broadcast 1-2 qts./A of Atrazine 4L to existing stands of big bluestem and switchgrass prior to the emergence of weeds. Use the low rate on soils containing from 1-2% organic matter. Use the high rate on soils with 2% or greater organic matter content.

#### **Renovation of Existing Stands of the Following Perennial Range Grasses Planted on CRP Acres:**

Blue grama, indiangrass, little bluestem, sand lovegrass, sideoats grama and western wheatgrass. Broadcast 0.5 - 1 qt./A of Atrazine 4L in the spring prior to weed emergence, or in the fall before the ground freezes and prior to weed emergence after these species have been established for at

least one growing season for control or partial control of the weeds listed above. Use the low rates for weeds that are controlled or suppressed easily.

**Aerial Application:** Make applications at a maximum height of 10 ft. above vegetation. Use low drift nozzles at a maximum pressure of 40 psi. To control drift, restrict application to periods when wind speed does not exceed 10 mph. To assure that drift will not adversely affect adjacent sensitive nontarget plants, apply Atrazine 4L by aircraft at a minimum upwind distance of 400 ft. from sensitive plants. Use 3-5 gallons/A total water volume when a dense heavy groundcover is present.

**Note:** (1) Do not cut or feed grass hay to livestock. (2) Do not graze treated areas. (3) Do not use seeds for bird food. 4) Do not dump or spill product or dispose of product containers within the reach of livestock. (5) Follow all applicable restrictions of the Conservation Reserve Program.

**Precautions:** Do not make more than one application per year. Slight discoloration of desirable grasses may occur following treatment. Injury may be enhanced when used on neutral or alkaline soils. Do not apply more than 2 pounds active ingredient per acre for any application.

**SEVERE DROUGHT CONDITIONS**  
Do not graze forage or cut forage for hay from CRP acres if treated with atrazine. Under severe drought conditions, the Conservation Reserve Program allows grazing and making of hay from CRP acres, as so specified by the local Agricultural Stabilization & Conservation Service (ASCS) office. This label does not allow for grazing or making of hay from atrazine treated acres, under those or any other circumstances.

**SUGARCANE**

For control of many broadleaf weeds and grass weeds, including amaranths, crabgrass, fireweed, Flora's paintbrush, foxtails, junglerice and wiregrass, apply 4-8 pts./A of Atrazine 4L at time of planting or ratooning, but before sugarcane emerges. For aerial application, broadcast in a minimum of 5 gals./A spray volume. For application by ground, broadcast or band, apply in a minimum of 20 gal./A, unless indicated otherwise. One (1) additional application may be made over the sugarcane as it emerges, and two (2) additional applications may be made interline, after emergence, as directed sprays. Repeat treatments, where needed, may be applied broadcast, band, or interline as suggested with the final application made prior to "close-in."

**Note:** Where high rates of Atrazine 4L are used alone, apply in a minimum of 1 qt. of water for each 1 qt. of Atrazine 4L applied per acre.

**Aerial Application:** In order to assure that spray will be controllable within the target area when used according to label directions, make applications at a maximum height of 10 ft. using low drift nozzles at a maximum pressure of 40 psi, and restrict application to periods when wind speeds do not exceed 10 mph. To assure that spray will not adversely affect adjacent sensitive nontarget plants, apply Atrazine 4L alone by aircraft at a minimum upwind distance of 400 ft. from sensitive plants.

**Precautions:** Do not apply more than 4 pounds active ingredient per acre for any application. Do not apply more than 10 pounds active ingredient per acre per crop.



**Florida**

For control of emerged pellitory (artillery) weed: Apply 0.8-1.2 pts./A of Atrazine 4L in at least 40 gallons of water as a directed spray, by ground equipment, prior to "close-in". Add 4 quarts of surfactant for each 100 gallons of spray. Thoroughly wet weed foliage with spray. For control of alexandergrass, large crabgrass, pellitory (artillery) weed, and spiny amaranth, use one of the following methods at planting or ratooning:

- (1) Apply 8 pts./A of Atrazine 4L preemergence. Follow with 1 or 2 applications as needed, postemergence to sugarcane and weeds at 4 pts./A of Atrazine 4L. Treat before weeds exceed 1.5 inches in height.
- (2) Apply 1-3 times, as needed, at 4 pts./A of Atrazine 4L postemergence to sugarcane and weeds. Treat before weeds exceed 1.5 inches in height.

**Louisiana**

For control of annual weeds during the summer fallow period, apply 4 pts./A of Atrazine 4L to weed-free beds immediately after bed formation. Follow normal weed control program after planting.

**Precautions:** To avoid crop injury, (1) do not apply more than 10 qts./A of Atrazine 4L to any one crop of sugarcane. (2) If making 4 pts./A of Atrazine 4L applications during the summer fallow period, do not exceed 8 qts./A of Atrazine 4L during the remainder of the season.

**Texas**

Use Atrazine 4L for control of barnyardgrass, pigweed, purslane, and sunflower in plant or ratoon sugarcane. Apply 8 pts./A of Atrazine 4L preemergence. Follow with 1 or 2 applications as needed at 6 pts./A of Atrazine 4L postemergence to sugarcane and weeds. For best results, when weeds are emerged, add a nonionic surfactant at a concentration of 2 qts./100 gals. to the spray and apply before weeds exceed 1.5 inches in height.

**Precautions:** (1) Injury to sugarcane may occur when under moisture stress, when soil is of low absorptive capacity, or when land is first cropped to sugarcane. (2) Do not apply after close-in. Do not apply more than 10 qts./A of Atrazine 4L to any one crop of sugarcane, or crop injury may result.

**TURFGRASS FOR SOD (Florida Only)**

**St. Augustinegrass, Centipedegrass, and Zoysiagrass:** Broadcast 4-8 pts./A of Atrazine 4L according to soil texture (Table 4) to control those weeds listed under "General Information" for Atrazine 4L applied alone.

**Table 4. Broadcast Rates of Atrazine 4L for Use on Turfgrass in Florida**

Muck or Peat	8 pints	Old Beds:	Within 2 days after lifting sod.
		New Beds:	Within 3-4 days after sprigging or plugging.
Sandy Soil	4 pints	Old Beds:	Within 2 days after lifting sod.
		New Beds:	Within 7-10 days after sprigging or plugging.

If weeds regrow, apply an additional 4 pts./A of Atrazine 4L on muck or peat, or 2 pts./A of Atrazine 4L on sandy soil.

**Precautions:** To avoid crop injury, (1) Do not apply within 30 days prior to cutting or lifting. (2) Do not apply in combination with surfactants or other spray additives. (3) Use only on turfgrass reasonably free of infestations of insects, nematodes and diseases. (4) On newly sprigged turfgrass, temporary slowing of growth may follow applications. (5) For muck or peat soils, do not apply more than 4 pounds active ingredient per acre for any application. Do not apply more than 6 pounds active ingredient per year. (6) For sandy soils, do not apply more than 2 pounds active ingredient per acre for any application. Do not apply more than 3 pounds active ingredient per year.

**TURFGRASS FOR FAIRWAYS, LAWNS, SOD PRODUCTION (in states other than Florida\*) AND RESIDENTIAL SITES (including homes, daycare facilities, schools, playgrounds, parks, recreational areas, and sports fields)**

\*For use on turfgrass for sod in Florida, see "TURFGRASS FOR SOD (Florida Only)" in above section.

**Bermudagrass, Centipedegrass, St. Augustinegrass and Zoysiagrass:** Apply Atrazine 4L after October 1 before emergence of winter annual weeds, for control of annual bluegrass, burclover, carpet burweed, chickweed, corn speedwell, henbit, hop clover and spurweed. Atrazine 4L will control annual bluegrass even if it is emerged at the time of treatment. For control of summer annual weeds listed in the "GENERAL INFORMATION" section of this label, also apply Atrazine 4L in late winter before the weeds emerge. Apply in a minimum of 15 gallons of water per acre or 1 gallon per 1,000 feet.

Where annual bluegrass is the major weed, use 1 qt./A of Atrazine 4L at least 30 days after the previous application, but not after April 15. However, do not make more than two (2) applications of this herbicide per year.

**Precautions:** On newly sprigged turfgrass and hybrid bermudagrass, temporary slowing of growth and yellowing may occur following application. To avoid turf injury, (1) Use only on turfgrass reasonably free of infestations of insects, nematodes and diseases. (2) Do not use on golf greens. (3) Do not use north of North Carolina, (with the exception of the Virginia Coastal Plains) or west of the high rainfall areas of Eastern Oklahoma and Eastern Texas. (4) Do not use on muck or alkaline soils. (5) For sandy soils, do not apply more than 1 pound active ingredient per acre for any application. Do not apply more than 2 pounds active ingredient per year. (6) Do not apply over the rooting area of trees or ornamentals not listed on this label. (7) Do not overseed with desirable turfgrass within 4 months before or 6 months after treatment. (8) Do not apply this product to newly seeded bermudagrass until it has overwintered and has a well-developed rhizome system. Do not exceed 2 qts./A of Atrazine 4L of this product within 12 months of seeding Bermudagrass.

**Note:** Do not graze or feed turf clippings to animals, or illegal residues may result.

## MACADAMIA NUTS

For preemergence control of many broadleaf and grass weeds, including crabgrass, foxtail, wiregrass, Flora's paintbrush, spanishneedles and fireweed, broadcast 4-8 pts./A of Atrazine 4L before harvest and before weeds emerge. Repeat as necessary. Do not spray when nuts are on the ground or during the harvest period. Do not apply by air.

**Note:** Do not apply more than 4 lbs active ingredient per acre for any application. Do not apply more than 8 pounds active ingredient per year.

## GUAVA

Use only on established plantings which are at least 18 months old. Apply as a directed spray, at 4-8 pts./A of Atrazine 4L in 20-50 gallons of spray mix, preemergence or early postemergence to weeds. When applying postemergence, the use of a surfactant and greater spray volume (80-100 gallons of spray mix per acre) may enhance weed control. This product controls many annual broadleaf and grass weeds, including fireweed, purslane, scarlet pimpernel, spanishneedles and sowthistles.

**Note:** To avoid illegal residues, (1) Do not allow spray to contact guava foliage or fruit. (2) Do not apply more frequently than at 4 month intervals. (3) Do not apply more than 4 lbs active ingredient per acre for any application. Do not apply more than 8 pounds active ingredient per year.

## CONIFERS

For control of annual broadleaf and grass weeds prior to transplanting, after transplanting, or in established conifers [including Douglas fir, grand fir, noble fir, white fir, Austrian pine, bishop pine, Jeffrey pine, knobcone pine, loblolly pine, lodgepole pine (shore pine), monterey pine, ponderosa pine, Scotch pine, slash pine, blue spruce and Sitka spruce]: Broadcast 4-8 pints in a minimum of 5 gallons of water per acre by air or 10 gallons of water per acre by ground, before weeds are 1.5 inches tall. Apply to established trees between fall and early spring while trees are dormant. For new transplants, apply during or soon after transplanting. For applications prior to transplanting, wait for sufficient precipitation to activate Atrazine 4L before transplanting. In areas where spring and summer rainfall is inadequate to activate Atrazine 4L, apply during fall prior to spring transplanting. For the list of weeds controlled, see the "GENERAL INFORMATION" section of this label.

**Note:** Do not apply more than 4 lbs active ingredient per acre for any application. Do not apply more than 4 pounds active ingredient per year.

**Quackgrass Control:** Broadcast 8 pints in a minimum of 5 gallons of water per acre by air or 10 gallons per acre by ground, between fall and early spring while trees are dormant and before quackgrass is more than 1.5 inches in height.

### Precautions:

(1) In areas west of the Rocky Mountains (except the Great Basin) grazing may begin 7 months after a fall application, or 3 months after a winter or spring application. (2) To prevent illegal residues, do not graze treated areas of the Great Basin or east of the Rocky Mountains. (3)

Temporary injury to trees may occur following use of Atrazine 4L on coarse textured soil. (4) To avoid crop injury, do not apply to seedbeds. (5) Apply only once per year.

**Aerial Application:** In order to assure that spray will be controllable within the target area when used according to label directions, make applications at a maximum height of 10 ft. above vegetation, using low drift nozzles at a maximum pressure of 40 psi, and restrict application to periods when wind speeds do not exceed 10 mph. To assure that spray will not adversely affect adjacent sensitive nontarget plants, apply Atrazine 4L alone by aircraft at a minimum upwind distance of 400 ft. from sensitive plants.

**ROADSIDES**

Apply Atrazine 4L to control certain annual weeds in established perennial grasses along roadsides in CO, KS, MT, ND, NE, SD and WY, including cheatgrass (downy brome, chess) common (annual) broomweed, little barley, medusahead, sagewort and tumble mustard. Broadcast this product at a rate of 2 pts./A of Atrazine 4L in a minimum of 10 gallons of water by ground equipment, in the fall before the ground freezes, or after thawing in the spring before the established grasses green-up and before weeds emerge. Examples of established desirable grasses include big bluestem, bluegrama, bromegrass, buffalograss, crested wheatgrass, Indiangrass, little bluestem, side-oats grama, switchgrass and Western wheatgrass. Apply only once per year. Temporary discoloration or other form of injury to the desirable perennial grasses may occur following application.

**Note:** Do not cut or feed roadside hay. Do not allow livestock to graze in treated areas. Do not apply more than 1 pound active ingredient per acre for any application. Do not apply more than one application per year.

**Notice of Warranty**

Seller warrants that the product conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with directions under normal conditions of use. SELLER MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, NOR IS ANY REPRESENTATIVE OF SELLER AUTHORIZED TO MAKE ANY SUCH WARRANTY OR MODIFY THESE TERMS. This warranty does not extend to the storage, handling or use of this product contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to Seller, and Buyer assumes the risk of any such storage, handling or use. Seller shall not be responsible for incidental or consequential damages, if any, resulting from a breach of warranty.

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