

LUXEMBOURG-PAMOL

LEAF-ALL

**Sodium Cacodylate and Cacodylic Acid Liquid Plus Surfactant
Cotton Defoliant and/or aid in preharvest defoliation**

ACTIVE INGREDIENT:

- Sodium Cacodylate.....27.4%
- Dimethylarsenic Acid (Cacodylic Acid).....4.7%
- OTHER INGREDIENTS:.....67.9%**
- TOTAL:.....100.0%**

**Total Arsenic (as elemental) all in water-soluble form 15.4%
Product contains 3.1 lbs. Cacodylic acid equivalent per gallon**

Keep Out Of Reach Of Children

CAUTION

FIRST AID	
If swallowed:	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If in eyes:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If on skin or clothing:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled:	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical information.	

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No.: 42519-10

EPA Est. No.: 42519-ISR-1

_____ **Manufactured for:**
 Company **LUXEMBOURG-PAMOL, INC.**
 Logo **5100 Poplar Avenue, Suite 2700**
 _____ **Memphis, Tennessee 38137, U.S.A.**

ACCEPTED OCT 4 2004 Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 42519-10
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**FOR CHEMICAL SPILL, LEAK, FIRE
OR EXPOSURE CALL TOLL
FREE: 1-800-424-9300**

**AGRICULTURAL CHEMICAL
DO NOT SHIP OR STORE WITH
FOODS, FEEDS, DRUGS, OR
CLOTHING**

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation. Do not apply this product through any type of irrigation system. Do not feed treated foliage to livestock or graze treated areas. 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.

Agricultural Use Requirements

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- coveralls
- chemical-resistant gloves Category A, such as butyl rubber ≥ 14 mils, or natural rubber ≥ 14 mils, or neoprene rubber ≥ 14 mils or nitrile rubber ≥ 14 mils
- shoes and socks
- protective eye wear
- chemical-resistant headgear for overhead exposure

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Open dumping is prohibited. Do not store this product near fertilizers, seeds, insecticides, or fungicides. Do not store near heat or open flame. Freezing point of this product is approximately -5°F. If stored below freezing point, warm to 50°F and agitate thoroughly before using. Containers should not be stacked more than six (6) high. Reclose all partially used containers by thoroughly tightening screw cap. Damaged or leaking containers which cannot be used immediately

should be transferred to suitable sound containers and properly marked. Absorb any spills with a suitable clay absorbent and dispose of as indicated under "Pesticide Disposal". For safety and prevention of unauthorized use, it is suggested that all pesticides be stored in locked facilities.

Opened, partially used pesticides should be stored in original labeled containers when possible. When transfer to another container is necessary because of leakage or damage, carefully mark, and identify contents of the new container.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: 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.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION

Harmful if swallowed. May cause irritation of eyes, nose, throat and skin. Avoid breathing spray mist. Avoid contact with skin, eyes, and clothing. In cases of contact, immediately flush eyes or skin with plenty of water. Get medical attention if irritation occurs.

Personal Protective Equipment

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-resistance category selection chart.

Applicators and other handlers must wear:

- Long sleeved shirt and long pants
- Chemical-resistant gloves Category A, such as butyl rubber ≥ 14 mils, or natural rubber ≥ 14 mils, or neoprene rubber ≥ 14 mils or nitrile rubber ≥ 14 mils
- Shoes and socks
- Protective eyewear when handling concentrate
- Chemical-resistant apron when cleaning equipment, mixing or loading

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

User Safety Recommendations

User should:

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

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning equipment or disposal of equipment washwaters. Do not contaminate waters used by animals, wildlife or aquatic life, or water used for domestic or irrigation purposes. Do not apply when weather conditions favor drift from target area.

Potential spray drift from ground or air applications may be reduced by:

1. Keeping the spray discharge as near to the target as possible while obtaining good coverage.
2. Increasing the volume of spray mixture per acre.
3. Using low spraying pressures (as measured at the nozzle tips).
4. Using nozzles which produce the largest spray droplets that still provide adequate coverage.
5. Avoiding application when wind is blowing toward susceptible crops or valuable plants.
6. Making applications when wind velocity is more favorable for on-target deposition. The following table is a general guide:

Wind Velocity	Comments
0-2 mph	Still air may indicate a temperature inversion which can permit drift.
3-7 mph	Generally good conditions, but check wind direction relative to susceptible crops. Allow for wind shift of swath.
7-10 mph	Possibly acceptable if wind direction is favorable and no susceptible crops are in the vicinity. Allow for wind shift of swath.
10-15 mph	Not usually desirable except in areas of stronger prevailing winds when direction is favorable and no susceptible crops are in the general vicinity. Use an agriculturally accepted drift retardant and allow for wind shift of swath.
Over 15 mph	Do not spray.

7. Properly maintaining and calibrating all spray equipment.
8. For aerial applications, using an effective spray boom length that is no more than 75% of the wingspan or rotor diameter.
9. Using an agriculturally accepted drift retardant designed to increase droplet size.

GENERAL INFORMATION

Leaf-All is a defoliant and/or aid in the preharvest defoliation of irrigated and dryland cotton. Stripper and picker crops may be treated. The phytotoxic properties of this product can affect most vegetation contacted, but are quickly inactivated on contact with soil.

Leaf-All is a combination of a defoliating agent and the required amount of surfactant for certain common applications. Additional surfactant may be used as recommended with tank mix products or to improve coverage with ground applications.

CARE OF EQUIPMENT: Although Leaf-All is only slightly corrosive, avoid prolonged contact with equipment made of zinc, tin, or aluminum. Clean such equipment with water as needed.

MIXING INSTRUCTIONS: Leaf-All is a water-soluble concentrate. To prepare the spray mixture,

fill the spray equipment reservoir about half full with water. If wettable powders or flowables are to be used in a tank mix, add them next with agitation on. Emulsifiable concentrate formulations should follow. Then add the required amount of Leaf-All and finish filling the reservoir with water. Adjuvants should be added last. Maintain agitation during application and until tank is emptied. After use, clean equipment thoroughly by flushing with water. Do not store spray mixture in tank for a prolonged period. If DROPP® is used in the tank mix, special cleanout procedures should be followed. See DROPP® label for cleanout directions.

APPLICATION: Leaf-All may be applied with aerial or ground equipment. For the most effective defoliation good coverage of all leaves is essential. Nozzles must be arranged to provide thorough coverage of the foliage. If applied by airplane, use 3 to 10 gallons of spray mixture per acre. (Note: Spray volumes of less than 5 gallons per acre may reduce coverage and result in less consistent defoliation.) The range of 5 to 10 gallons per acre will generally provide adequate coverage. If applied by ground equipment, a spray volume of 15 to 25 gallons of water per acre is preferred.

The condition of cotton plants, their stage of growth and the environmental conditions will determine the specific application rate and timing. In general, use the lower listed rates of Leaf-All under high temperature conditions and the higher listed rates under low temperature conditions.

Adjuvant Usage: Adjuvants may improve the activity of defoliant and/or make their results more consistent. The following guidelines are provided for selecting adjuvants, but current product labels take precedence. Use only adjuvants approved for application to growing crops.

Type of Leaf-All Application	Adjuvant Selection Guidelines
Leaf-All alone, ground application, 15 to 25 gallons of water per acre	Use adjuvant manufacturer's recommended rate of: Nonionic surfactant (minimum 80% active) such as Activator 90, LI 700®, Surfac 820, or X-77® OR Organosilicone surfactant such as SILWET L-77®
Leaf-All alone, aerial application, 3 to 10 gallons of water per acre	Additional adjuvant is usually not needed, but surfactants listed above for ground application may be used if conditions warrant. Excessive runoff can reduce defoliation.
Most tank mixes recommended on this label	Crop oil concentrate adjuvants such as HERBIMAX® or CLEAN CROP® Oil Concentrate OR Nonionic surfactants such as those listed above for Leaf-All alone OR Organosilicone surfactant such as listed above for Leaf-All alone
CYCLONE®, STARFIRE® tank mixes	Nonionic surfactants such as those listed above for Leaf-All alone at 1 pt./100 gallons by ground and 2 pts./100 gallons by air.

Type of Leaf-All Application	Adjuvant Selection Guidelines
HARVADE® tank mix	Crop oil concentrate such as HERBIMAX® or CLEAN CROP® Oil Concentrate at 1 to 2 pts. per acre

AERIAL SPRAY DRIFT MANAGEMENT

Spray Drift Management

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR AND THE GROWER. The interaction of many equipment-and-weather-related factors determine 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 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 outer most nozzles on the boom must not exceed ¾ the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

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

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

Aerial Drift Reduction Advisory

[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 $\frac{3}{4}$ 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 target 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 downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.)

Wind

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 habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

DEFOLIATION OF COTTON:

Apply Leaf-All before harvest when 50% or more of the bolls are open (about 7 to 10 days prior to anticipated picking). Use a rate of 1-1.6 pints of Leaf-All per acre, preferably in a tank mix as specified below: DO NOT exceed 1.6 pints Leaf-All per acre per year.

DEFOLIATION TANK-MIX RECOMMENDATIONS:

General: Leaf-All is frequently tank mixed with other defoliant or harvest aids for more consistent

results over a range of environmental conditions (except for preconditioning application). For optimum defoliation results, apply when at least 50% of the bolls are open. Follow-up treatment may be necessary, within label limitations of products used. Observe the most restrictive label directions and precautions of the various products tank mixed.

Defoliation (Most Areas): Suggested tank mix partners include products such as DROPP® 50 WP, DEF® 6, PREP™, CYCLONE®, Sodium Chlorate and HARVADE®. Use 1/2 to 1.6 pints of Leaf-All per acre in these mixtures.

Defoliation (California): Suggested tank mix partners include products such as ACCELERATE®, DEF® 6, FOLEX® 6EC, DROPP® 50WP, PREP™, Sodium Chlorate, and STARFIRE®. Use 1 to 1.6 pints of Leaf-All per acre in combination with the labeled defoliant or harvest aids. Consult with your Pest Control Advisor before using the highest rates of Leaf-All.

PRECONDITIONING FOR DEFOLIATION: Leaf-All may be used to precondition cotton for final defoliation. This application removes some leaves to open up the plant canopy thereby providing better air movement and sunlight penetration. Apply 1/2 to 3/4 pint of Leaf-All per acre after approximately 50% of the bolls have opened. Preconditioning also usually results in more complete and thorough defoliation when the final preharvest application is made.

WARRANTY - CONDITION OF SALE

OUR RECOMMENDATIONS FOR USE of this product are based upon field use and 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. Buyer assumes all risks of use, storage and handling of this material not in strict accordance with directions given herewith.

In no case shall Luxembourg-Pamol, Inc. or the Seller be liable for consequential, special, or indirect damages resulting from the use 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 Luxembourg-Pamol, Inc. and is accepted as such by the Buyer.

NET CONTENTS:

Manufactured by Luxembourg Industries (PAMOL), Ltd.
Made in Israel

ACCELERATE® is a Reg. TM of Cerexagri, Inc.

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CYCLONE®* and STARFIRE®* are Reg. TMs of Syngenta Crop Protection, Inc.

DEF®, DROPP®, and FOLEX® are Reg. TMs of Bayer CropScience.

HARVADE® is a Reg. TM of Uniroyal Chemical Company.

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PREP™ is a TM of Bayer CropScience.

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***CYCLONE® and STARFIRE® are Restricted Use Pesticides**