

PM 23 100-729

S-15-97

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Please read instructions on reverse before completing form.

Form Approved. OMB No. 2070-0060. Approval expires 05-31-98



United States Environmental Protection Agency Washington, DC 20460

Registration Amendment Other [X]

OPP Identifier Number

258278

Application for Pesticide - Section I

1. Company/Product Number 100-729
2. EPA Product Manager J. Miller
3. Proposed Classification None Restricted
4. Company/Product (Name) Primo Liquid
5. Name and Address of Applicant (Include ZIP Code) Novartis Crop Protection, Inc.
6. Expedited Review. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. Product Name

Section - II

Amendment - Explain below. Resubmission in response to Agency letter dated. Notification - Explain below. Final printed labels in response to Agency letter dated. "Me Too" Application. Other - Explain below. NOTIFICATION

Explanation: Use additional page(s) if necessary. (For section I and Section II.) MAY 15 1997 Changes to reflect new company name and logo.

Section - III

1. Material This Product Will Be Packaged In: Child-Resistant Packaging, Unit Packaging, Water Soluble Packaging, 2. Type of Container, 3. Location of Net Contents Information, 4. Size(s) Retail Container, 5. Location of Label Directions, 6. Manner in Which Label is Affixed to Product

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.) Name: Thomas J. Parshley, Title: Senior Regulatory Manager, Telephone No.: (910)632-7207
Certification: I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete.
2. Signature: Thomas J. Parshley, 3. Title: Senior Regulatory Manager, 4. Typed Name: Thomas J. Parshley, 5. Date: 4/28/97, 6. Date Application Received (Stamped)

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

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

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 treated areas without footwear until sprays have dried. There is no restricted entry interval (REI) requirement.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not enter treated areas without footwear until sprays have dried.

Observe all precautions and limitations on this label and on the labels of each product used in tank mixtures with this product.

FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN UNEVEN GROWTH REDUCTION OR SEVERELY STUNTED TURF.

General Information

Primo Liquid for turf growth management reduces the frequency of mowing and the amount of grass clippings by reducing the growth of warm- and cool-season turfgrasses. Other benefits, such as increased turf density, increased color, and increased turf quality, are frequently observed after Primo Liquid applications.

Primo Liquid can be applied to well-maintained, quality turfgrass areas, such as residential and commercial lawns, golf courses, sod farms, sports fields, cemeteries, and similar areas. Primo Liquid is useful in the management of difficult-to-mow areas and can be used to minimize the need for edging turfgrass along sidewalks, curbs, parking lots, driveways, flower beds, fences and around posts, storage sheds, and trees.

Primo Liquid reaches the growing point by foliar uptake and is rainfast from rainfall or irrigation after one hour. Watering-in is not necessary for activation.

NOTICE TO USER: Plant tolerances to Primo Liquid have been found to be acceptable for the grasses listed on this label. Due to the large number of species and cultivars of grasses, it is impossible to test every one for tolerance to Primo Liquid. Neither the manufacturer nor the seller has determined whether or not Primo Liquid can be used safely on grasses not specified on this label. The professional user should determine if Primo Liquid can be used safely prior to commercial use. Before using Primo Liquid for grasses not listed in the application table, test Primo Liquid on a small scale first. Apply the lower recommended rate for the turf setting (lawn, fairway, etc.) and evaluate for phytotoxicity and growth inhibition prior to widespread use.



Primo[®] Liquid

FOR TURF GROWTH MANAGEMENT

For managing growth, improving quality, and edging of warm- and cool-season turfgrasses

Active Ingredient:

Trinexapac-ethyl [4-(cyclopropyl- α -hydroxy-methylene)-3,5-dioxo-cyclohexanecarboxylic acid ethyl ester]

12.0%

Inert Ingredients:

88.0%

Total:

100.0%

Primo Liquid is an emulsifiable concentrate.

EPA Reg. No. 100-729

EPA Est. 67517-MO-1

KEEP OUT OF REACH OF CHILDREN.

WARNING/AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See additional precautionary statements and directions for use inside booklet. CGA 108L2C 036

One Gallon
U.S. Standard Measure



NOTIFICATION

MAY 15 1997

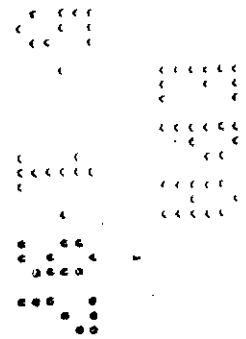
DIRECTIONS FOR USE AND CONDITIONS OF SALE AND WARRANTY

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.

Conditions of Sale and Warranty

The Directions for Use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Turf injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application all of which are beyond the control of Ciba-Geigy or the Seller. All such risks shall be assumed by the buyer.

Ciba-Geigy warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for Use subject to the inherent risks referred to above. **Ciba-Geigy makes no other express or implied warranty of Fitness or Merchantability or any other express or implied warranty. In no case shall Ciba-Geigy or the Seller be liable for consequential, special, or indirect damages resulting from the use or handling of this product.** Ciba-Geigy and the Seller offer this product, and the Buyer and user accept it, subject to the foregoing Conditions of Sale and Warranty, which may be varied only by agreement in writing signed by a duly authorized representative of Ciba-Geigy.



Application Information

Environmental conditions, management, and cultural practices that affect turf growth and vigor will influence the response of the turf to Primo Liquid applications. Fertility level, moisture availability, plant vigor, height, and frequency of mowing, etc. have been shown to influence the activity of Primo Liquid.

The rates presented in the Application Rate Table provide approximately 50% growth inhibition over a 4-week period with little or no discoloration of turf growing under favorable conditions.

Excessive turf growth, which may occur under high fertilization program or during spring flushes, may require higher rates of Primo Liquid. Under these conditions, Primo Liquid rates may have to be increased up to 50% to provide an adequate length of control.

For extended growth suppression up to 8 weeks, where temporary discoloration can be tolerated, a maximum of twice the recommended Primo Liquid rate from the Application Rate Table may be applied. Primo Liquid use rates may need to be reduced up to 50% for turfgrass grown under conditions of low fertility, compaction, or other factors which stress the turf.

Multiple applications can be made each growing season, but do not exceed a total of 7.0 fl. oz./1,000 sq. ft. (305 fl. oz./A; 21.4 pts./A) per year.

Mowing

Generally, Primo Liquid provides more suppression when turfgrasses are mowed at lower mowing heights than higher mowing heights. Application rates have been selected for typical mowing heights. The application rate may need to be adjusted depending on actual mowing conditions. It is suggested that Primo Liquid not be applied less than 4 hours before or 4 hours after mowing to minimize any potential injury.

Application Timing

Apply Primo Liquid to actively growing turf. Reduce Primo Liquid rates on turf going into dormancy due to high or low temperatures or lack of moisture.

Repeat applications of Primo Liquid may be made as soon as the turf resumes growth or more suppression is desired.

Equipment

Apply Primo Liquid with a sprayer capable of accurate and uniform applications. Clean spray equipment thoroughly before use. Primo Liquid may be applied in backpack sprayers, hand sprayers, boom sprayers, and by spray-gun application devices. Rinse sprayer with clean water after use and dispose of rinsate in an approved manner.

Mixing Instructions

Primo Liquid should be applied in sufficient carrier (e.g., 0.5-4.0 gals. of water per 1,000 sq. ft.) to provide uniform and thorough coverage.

Prepare no more mixture than is necessary for the immediate operation. Agitate thoroughly before and during application. Primo Liquid may be tank-mixed with many commonly used pesticides and liquid fertilizers.

If using Primo Liquid in a tank mixture, observe all directions for use, sites, use rate dilution ratios, precautions, and limitations which appear on the tank mix product label. No label dosage rate should be exceeded and the most restrictive label precautions and limitations should be followed. This product should not be mixed with any product which prohibits such mixing.

Backpack and Hand Sprayers (0.5-4.0 gals. capacity)

Primo Liquid Alone: Add $\frac{1}{2}$ - $\frac{2}{3}$ of the required water to the mix tank. Add the appropriate amount of Primo Liquid, close, and vigorously shake the unit before application.

Boom and Hand Gun Sprayers

Primo Liquid Alone: Add $\frac{1}{2}$ - $\frac{2}{3}$ of the required amount of water to the spray tank. Then, while agitating, add Primo Liquid. Continue agitation while adding the remainder of the water. Maintain agitation until all of the mixture has been applied.

Primo Liquid + Tank Mixtures

If Primo Liquid is tank mixed with other products, use the following sequence:

1. Always check the compatibility of the tank mix, using a jar test with proportionate amounts of Primo Liquid, other chemicals to be used, and water, before mixing in the spray tank.
2. Provide sufficient agitation during filling and application to keep the tank mix uniformly suspended.
3. Fill tank at least $\frac{1}{2}$ full with clean water.
4. Add Gel formulations to the spray tank first. Allow the packet to completely dissolve and the product to completely disperse into the mix water.

5. Next, add wettable powders to the tank, allowing them to completely suspend in the tank before proceeding. This process can be hastened by pre-mixing the product in water before adding to the tank.
6. Add flowables or suspensions next.
7. Add Primo Liquid and other emulsifiable concentrates last.
8. Do not leave tank mix combinations in the spray tank for prolonged periods without agitation. Mix and apply them the same day.
9. Primo Liquid should not be mixed with any product which prohibits such mixing. No label application rate should be exceeded and the most restrictive label precautions and limitations should be followed. Refer to the tank-mix product label(s) for further information.

Dyes

A water-soluble dye to mark the sprayed area can be used to ensure uniform application, and to avoid skips and overlaps. Refer to the instructions which accompany the dye for proper concentrations and mixing procedures.

Application Near and Around Monuments and Hardscape Materials

Primo Liquid, at normal dilution rates, will not stain brass, bronze, concrete, marble, granite, or other types of stone. Before using Primo Liquid around other types of stone, test on a small scale basis first.

Poa annua Conversion/Renovation

Primo Liquid can be applied to existing turf infested with stands of *Poa annua* as part of an overseeding/renovation program. Such an application allows better germination and seedling growth of more desirable turf. Primo Liquid, in conjunction with the use of appropriate cultural practices that help to ensure the vigor and growth of new seedlings, will also result in fewer clippings and thus, less maintenance traffic on new seedlings. Since Primo Liquid is foliarly absorbed, seed germination is not affected. Apply Primo Liquid 1-5 days before seeding; and before verticutting, scalping, spiking, or other similar operations.

Temporary initial discoloration is possible with aggressive application rates of Primo Liquid to turf with *Poa annua*. Primo Liquid applications the following spring should use the upper end rate for the turf type and setting listed in the Application Rate Table. Actual conversion success will also depend on growing conditions, fertilization, rainfall, and other agronomic and environmental conditions.

Bermudagrass Overseeding

An application of Primo Liquid to bermudagrass will enhance the establishment of cool-season turfgrasses. Primo Liquid, in conjunction with the use of cultural practices that help ensure new seedling vigor and growth, will also result in fewer clippings and less maintenance traffic on new seedlings. Primo Liquid is foliarly absorbed, so germination and seedling growth is not affected.

Apply Primo Liquid before verticutting, scalping, spiking, or other similar operations to the bermudagrass. Apply Primo Liquid 1-5 days before seeding.

Temporary initial discoloration is possible with aggressive application rates of Primo Liquid. Use normal seeding rates for your area and turf setting (lawn, fairway, etc.). Actual overseeding success will also depend on growing conditions, fertilization, rainfall, and other agronomic and environmental conditions. For maintenance application, see the Application Rate Table.

Application with Turf Marking Paint

Primo Liquid can extend the duration of marking visibility when applied before or with marking agents. Mix Primo Liquid with water first when combining with latex-based marking agents. Refer to the marking agents product label for further instructions.

Apply Primo Liquid at 1 oz./gal. of marking paint mix to treat approximately 1,000 sq. ft. of line surface area. Refer to the **Primo Liquid + Tank Mixtures** section of this label for additional instructions.

Notes: (1) Do not apply to bare ground since Primo Liquid is foliarly absorbed. (2) Areas treated with Primo Liquid should continue to receive regular maintenance practices, including irrigation; fertilization; and weed, disease, and insect control when necessary, and as recommended for quality turf. Since some herbicides can injure turf, tank mixes with Primo Liquid should be tested on a small scale before widespread use. (3) Primo Liquid may cause temporary yellowing. This usually disappears about one week after application. To minimize yellowing and to enhance the green color of turf, apply readily available nitrogen at 0.2-0.5 lb. of actual nitrogen per 1,000 sq. ft. If desirable, 1-2 oz. of Sprint® 330 or recommended rates of other iron sources per 1,000 sq. ft. can also be used. (4) Full growth regulation by Primo Liquid begins at about 3-5 days after application.

Table 1. Recommended Primo Liquid Application Rates^{1,2}

Turf Type	Residential and Commercial Turf ³		Golf Course Fairways (Cut at 0.5 inch or less)		Golf Course Greens		Edging/Banding ⁴	
	fl. oz./1,000 sq. ft.	fl. oz./A	fl. oz./1,000 sq. ft.	fl. oz./A	fl. oz./1,000 sq. ft.	fl. oz./A	fl. oz./1,000 sq. ft.	fl. oz./A
Cool-Season								
Bentgrass	0.75	33	0.25	11	0.125	6	1.0	44
Fescue, Red	0.75	33					1.0	44
Fescue, Tall (Ky-31)	1.0	44					1.0	44
Fescue, Tall (Turf Types)	0.75	33					1.0	44
Kentucky Bluegrass	0.6	26	0.25	11			0.75	33
Mixture (Bentgrass/Poa annua)			0.25 ⁵	11	0.15 ⁵	7		
Mixture (K. Bluegrass/Fescue/Ryegrass)	0.75	33						
Mixture (K. Bluegrass/Ryegrass/Poa annua)			0.50 ⁵	22				
Ryegrass, Annual	1.0	44					1.0	44
Ryegrass, Perennial	1.0	44	0.50	22			1.0	44
Warm-Season								
Bahiagrass	1.0	44					1-2	44-88
Bermudagrass⁶								
Bermudagrass, Common	0.75	33	0.25	11			1-2	44-88
Bermudagrass, Other Hybrids	0.25	11	0.20	9			0.5-0.75	22-33
Bermudagrass, Tifdwarf	0.20	9	0.20	9	0.062	3	0.5-0.75	22-33
Bermudagrass, Tifgreen (328)	0.25	11	0.20	9	0.125	6	0.75	33
Bermudagrass, Tifway (419)	0.38	16	0.25	11			0.75	33
Buffalograss	1.0	44					1.0	44
Carpetgrass	0.25-0.4	11-18					0.5	22
Centipedegrass	0.5	22					1.0	44
Kikuyugrass	0.3-0.5	13-22	0.3	13			1.0	44
St. Augustinegrass	0.25-0.38	11-16					1-2	44-88
St. Augustinegrass, Texas Common	0.25	11					0.50	22
Zoysiagrass	0.25	11	0.125	6			0.75	33

¹ These rates should provide 50% suppression of turf growth under good growing conditions for 4 weeks with minimal yellowing.

² **Seedheads:** At rates equal to or higher than the rates below, Primo Liquid provides seedhead suppression of hybrid bermudagrass, and partial seedhead suppression of annual bluegrass, bahiagrass, buffalograss, carpetgrass, common bermudagrass, Kentucky bluegrass, and tall fescue. Primo Liquid must be applied prior to seedhead formation.

³ Including, but not limited to, home lawns, parks, recreation areas, golf course roughs, cemeteries, business sites, sports fields, and sod farms.

⁴ Primo Liquid can be applied along the perimeter of lawns, sidewalks, curbs, parking lots, driveways, posts, storage buildings, pet pens, fences, or other areas. Primo Liquid can be used around trees, shrubs, flower beds, and other border plants or similar areas with no injury. Apply Primo Liquid in an 8 to 12-inch band with a single nozzle sprayer. Use the higher concentration to reduce the growth of the turfgrass into adjacent areas.

⁵ Where yellowing of poa annua is a concern, use half this rate and apply more frequently. For Poa annua conversion/renovation, where temporary discoloration can be tolerated, twice this rate may be applied.

⁶ Bermudagrass overseeding preparation: 0.5 oz./1,000 sq. ft.

Precautions: (1) Do not apply Primo Liquid through any type of irrigation system. (2) Do not graze areas or feed clippings to livestock.

Storage and Disposal

Pesticide Storage and Disposal

Do not store below 0°F. If crystals do form, store above 70°F, shaking periodically until crystals are dissolved.

Do not contaminate water, food, or feed by storage, disposal, or cleaning of equipment. Pesticide wastes are toxic. Improper disposal of unused pesticide, spray mixture, or rinse is a violation of federal law. If these wastes cannot be disposed of by use according to label instructions, they must be disposed of according to federal, state, or local procedures. 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) and offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or by open burning, if allowed by state and local authorities. If burned, keep out of smoke.

Primo® Liquid

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For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. 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 1-800-888-8372, day or night.

Precautionary Statements

Hazards to Humans and Domestic Animals

WARNING/AVISO

Causes eye irritation. Do not get in eyes. Harmful if swallowed, inhaled, or absorbed through skin. Avoid contact with skin or clothing. Avoid breathing vapor or spray mist.

Statement of Practical Treatment

If in eyes: Hold eyelids open and flush with a steady, gentle stream of water. Get medical attention.

If swallowed: Call a physician or Poison Control Center. Do not induce vomiting. Drink promptly a large quantity of milk, egg whites, or gelatin solution; or, if these are not available, drink large quantities of water. Never give anything by mouth to an unconscious person.

If inhaled: Remove victim to fresh air.

If on skin: Wash with plenty of soap and water. Call a physician if irritation persists.

Note to Physician: If ingested, lavage stomach with care to prevent aspiration of stomach contents. An aqueous suspension of activated charcoal can be given to absorb remaining toxicant.

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 G on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate or viton
- Shoes plus socks
- Protective eyewear

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

Engineering Control Statements

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

User Safety Recommendations

Users should:

- 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.

Environmental Hazards

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 contaminate water when disposing of equipment wash waters. Do not apply when weather conditions favor drift from treated areas.

Primo® and Sprint® trademarks of Ciba-Geigy Corporation
U.S. Patent No. 4,693,745

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Ciba Crop Protection
Turf and Ornamental Products
Ciba-Geigy Corporation
Greensboro, North Carolina 27419
CGA 108L2C 036

This booklet manufactured using
post-consumer, recycled paper.



Primo® Liquid

FOR TURF GROWTH MANAGEMENT

For managing growth, improving quality, and edging of warm- and cool-season turfgrasses

Active ingredient:
Trinexapac-ethyl [4-(cyclopropyl-
oxycarbonyl)-3,5-dioxo-
cyclohexanecarboxylic acid ethyl
ester]..... 12.0%

Inert ingredients: 88.0%

Total: 100.0%

Primo Liquid is an emulsifiable concentrate.

See directions for use in attached booklet.

AGRICULTURAL USE REQUIREMENTS

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

EPA Reg. No. 100-729
EPA Est. 67517-MO-1

Primo® trademark of
Ciba-Geigy Corporation

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One Gallon
U. S. Standard Measure

**KEEP
OUT OF
REACH
OF CHIL-
DREN.**

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