

241-419

1-14-2002

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U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Registration Division (75050)  
1201 Pennsylvania Ave., NW  
Washington, D.C. 20460

EPA Reg. Number:

241-419

Date of Issuance:

JAN 14 2002

NOTICE OF PESTICIDE:  
  X   Registration  
       Reregistration

Term of Issuance:

Conditional

Name of Pesticide Product:

Ardent Fungicide

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

BASF Corporation  
P.O. Box 400  
Princeton, NJ 08543

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.
2. Make the following labeling changes before you release the product for shipment:
  - a. Add the phrase "EPA Registration No. 241-419".
  - b. Under Compatibility, revise the second sentence by changing "If" to "When" and deleting "if desired" since the product must be tank mixed.
3. Submit one copy of the final printed label for the record.

Signature of Approving Official:

*Mary L. Waller*  
Mary L. Waller, PM (21)

Date:

1/14/02

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If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely yours,



Mary L. Waller  
Product Manager (21)  
Fungicide Branch  
Registration Division (7505C)

Enclosure

7505C:CGrable:cg:1/11/02

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# ARDENT™ 50WP fungicide

## For Use in Potatoes to Manage Late Blight and Tuber Blight

<b>ACTIVE INGREDIENT:</b>	
Dimethomorph .....	50.0%
<b>INERT INGREDIENTS:</b> .....	50.0%
<b>TOTAL:</b> .....	100.0%

EPA Reg. No. 241-  
U.S. Patent No. 5,952,496

EPA Est. No. 241-MO-001

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION!/PRECAUCION**

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.)

### FIRST AID

**If Swallowed:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

**If on Skin or Clothing:** 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.

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

In case of an emergency endangering life or property involving this product,  
call day or night 800-832-HELP.

**ACCEPTED with COMMENTS** See inside for Additional Precautionary Statements  
**In EPA Letter Dated:**

JAN 14 2002

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

241-419

**BASF Corporation**  
26 Davis Drive  
Research Triangle Park, NC 27709

**BASF**

Net Contents: 4 Pounds

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## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

#### CAUTION

Harmful if swallowed or absorbed through skin. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling.

#### Personal Protection Equipment (PPE):

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

Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- chemical resistant gloves made of any waterproof material, such as polyethylene or polyvinyl chloride
- shoes plus socks

Follow manufacturer's instructions for cleaning and 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:

- 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 cleaning equipment or disposing of equipment washwaters.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. **THIS LABELING MUST BE IN THE POSSESSION OF THE USER AT THE TIME OF FUNGICIDE APPLICATION.** Do not apply this product through any type of irrigation system unless the label instructions on chemigation are followed. See below for Chemigation Use Directions.

Do not apply this product when wind conditions favor drift.

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.

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### 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.

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, wear:

- : coveralls
- chemical resistant gloves made of any waterproof material, such as polyethylene or polyvinyl chloride
- shoes plus socks

### STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal.

#### Storage:

Store in a cool, well-ventilated area. DO NOT allow to become overheated in storage. Keep container closed when not in use.

#### Pesticide Disposal:

Wastes resulting from the use of this product may be disposed of on-site or at an approved waste disposal facility.

**Container Disposal:** Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

### GENERAL INFORMATION

ARDENT 50WP can be used in a preventative spray program to manage late blight and tuber blight in potatoes. Maximum results can only be achieved by thorough plant coverage. ARDENT 50WP must be used in accordance with this label. It is recommended that this product be used within an Integrated Pest Management Program.

In order to reduce the risk of the development of fungicide resistance, ARDENT 50WP must be used as a tank-mix with fungicides, EXCEPT MEFENOXAM OR METALAXYL, registered for late blight or tuber blight control.

Carefully read, understand, and follow all directions and precautions.

Disease pressure, plant growth rate, and environmental conditions will determine the length of the spray interval and the rate of ARDENT 50WP. Consult local late blight advisory system recommendations to determine the predicted disease pressure and the associated application rates and intervals. Sprayers should be properly calibrated before application. Determine the size of the area to be sprayed and the output rate to determine the quantities of ARDENT 50WP and water needed for accurate application. Apply material with adequate spray pressure, gallonage, and proper nozzle arrangement to provide full coverage.

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## MIXING INSTRUCTIONS

Fill the spray tank until it is approximately 1/2 full with clean water. Slowly, add ARDENT 50WP to the spray tank while agitating. Agitation must be engaged prior to the addition of the product to obtain a complete and uniform mixture of ARDENT 50WP.

## COMPATIBILITY

The tank-mixing behavior of this fungicide with other pesticides has not been fully investigated. If tank mixing with other pesticides is desirable, conduct a jar test with rates and volumes of carrier typically used in an agricultural application. Look for signs of separation, globules, sludge, flakes or other precipitates. **DO NOT** tank mix with the other pesticide if the jar test with ARDENT 50WP has indicated incompatibility.

## TANK MIXES WITH FUNGICIDES

**DO NOT** apply ARDENT 50WP alone. ARDENT 50WP must be used in a tank-mix with fungicides, EXCEPT MEFENOXAM OR METALAXYL, registered for late blight or tuber blight control. Potential tank mix partner fungicides include but are not limited to Polyram, EBDC fungicides or triphenyltin hydroxide. Refer to the respective tank-mix partner labeling for rates, methods of applications, proper timing, restrictions and precautions. Always use in accordance with the more restrictive label restrictions and precautions.

## AERIAL SPRAY APPLICATIONS

Prior to aerial application, check the aircraft for uniformity of spray pattern, spray swath width and output. If hollow cone or whirlplate nozzles are used, it is recommended that they be positioned straight down or slightly backwards. When using nozzles that produce relatively straight streams (e.g., D-series orifice with no core), the recommended positioning is straight back or slightly down from back.. Uniformly apply with properly calibrated aerial equipment in 5 or more gallons of water per acre. If foliage is dense, use an output that will ensure optimum fungicide penetration. Spray swaths should be marked using flaggers who are in completely enclosed vehicles, by counting rows, or by using some other marking device.

**DO NOT** apply when weather conditions favor drift.

## CHEMIGATION USE DIRECTIONS

ARDENT 50WP can be applied prior to the onset of disease infection on a regular protectant spray schedule, not an irrigation schedule. Chemigation applications must be made on a 5-10 day spray schedule depending on disease pressure and environmental conditions. Consult local late blight advisory system recommendations to determine the predicted disease pressure and the associated application rates and intervals. Chemigation applications may need to be supplemented with ground or aerial applications if irrigation cycles are less frequent than what is recommended on the label to obtain optimum control.

Apply ARDENT 50WP fungicide only through sprinkler irrigation systems including center-pivot, lateral move, side (wheel) roll, solid set, or hand move irrigation systems. **DO NOT** apply product through any other type of irrigation system.

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

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

The irrigation system must be correctly calibrated (with water only) to ensure that the recommended rate of ARDENT 50WP is applied.

**DO NOT** connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

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

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

The system should have properly working nozzles providing the recommended output and pattern. The chemigation system should also be free of leaks.

**Overhead Sprinkler Irrigation System Requirements**

1. The system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
5. The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point that pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. DO NOT apply when wind speed favors drift beyond the area intended for treatment.

**The following routine checks will help to ensure that the sprinkler irrigation system is working properly.**

1. Use a calibrated injection metering pump as specified by the manufacturer.
2. Metering pumps, the supply tank, and any associated equipment must be clean and dry before adding diluted ARDENT 50WP to the system for injection.
3. Check the metering pump periodically to confirm that ARDENT 50WP is being injected continuously and at the proper calibration throughout the irrigation period.
4. Continuous agitation must be maintained in the supply tank during the entire overhead sprinkler irrigation period.

**Center Pivot, and Lateral Move Irrigation Equipment**

(Use only with electric or oil hydraulic drive systems which provide a uniform water distribution)

1. Determine size of area to be treated
2. Determine the time required to apply the least amount of water. No more than 0.2 inches of water should be applied over the area to be treated when the system and injection equipment are operated at normal pressures recommended by the equipment manufacturer's rated capacity.
3. Using only water, determine the injection pump output when operated at normal line pressure.
4. Determine the amount of ARDENT 50WP fungicide required to treat area.
5. Add the required amount of ARDENT 50WP fungicide and sufficient water to meet the injection time requirements of the solution tank.
6. Maintain constant solution tank agitation during the injection period.
7. Stop injection equipment after treatment is completed. Continue to operate the system until ARDENT 50WP fungicide solution has cleared the last sprinkler head.

**Solid-set, Side (wheel) Roll, and Hand Move Irrigation Equipment:**

1. Determine acreage covered by sprinkler.
2. Fill injector solution tank with water and adjust flow rate to use contents over a 10 to 30 minute interval.
3. Determine the amount of ARDENT 50WP fungicide required to treat the area.
4. Add the required amount of ARDENT 50WP fungicide into the same quantity of water used to calibrate the injection equipment.
5. Maintain constant solution tank agitation during the injection period.
6. Operate system at normal pressures recommended by the manufacturer of the injection equipment and use for the time interval established during calibration.
7. Inject ARDENT 50WP fungicide at the end of the irrigation cycle or as a separate application to maximize foliar fungicide retention.
8. Stop injection equipment after treatment is completed. Continue to operate the system until ARDENT 50WP fungicide solution has cleared the last sprinkler head.

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## Use Directions

### For Control of Potato Late Blight, *Phytophthora infestans*

	Rate of ARDENT 50WP Per Acre Per Application Based on Spray Interval		
Disease Pressure	5-Day Interval	7-Day Interval	10-Day Interval
Low	4 oz	5 oz	6.4 oz
Moderate	5 oz	6.4 oz	Not Labeled for This Disease Pressure & Spray Interval
High	6.4 oz	6.4 oz	Not Labeled for This Disease Pressure & Spray Interval

Disease pressure and environmental conditions determine application rates and spray intervals. Consult local late blight advisory system recommendations to determine the predicted disease pressure and the associated application rates and intervals. Applications should begin prior to the onset of disease infection and based on the recommendation of the local late blight advisory system. Apply ARDENT 50WP to insure spray runoff.

DO NOT exceed 6.4 oz/acre/application. DO NOT exceed more than 32 oz total/acre in any one season.

### For Management of Tuber Blight, *Phytophthora infestans*

When used according to label recommendations for Late Blight control, ARDENT 50WP can also reduce tuber blight.

To maximize activity against tuber blight, begin fungicide applications before disease onset occurs and in accordance with local late blight advisory system recommendations. Also, maintain regular application schedules and obtain thorough plant coverage.

ARDENT 50WP may be applied after vine kill. DO NOT apply within 4 days of harvest in all states. DO NOT exceed more than 6.4 oz/acre/application. DO NOT exceed more than 32 oz total/acre in any one season.

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### ADDITIONAL RESTRICTIONS

To reduce the possibility of developing *Phytophthora infestans* resistance to both ARDENT 50WP and to mefenoxam or metalaxyl products, the tank mixing of ARDENT 50WP with any of these products is STRICTLY PROHIBITED.

*Phytophthora infestans* strains have developed resistance to some crop protection products after repeated use. Since the development of resistance cannot be predicted, ARDENT 50WP should always be used in a resistance management program. Tank mixing and thorough spray coverage are necessary to minimize the development of *Phytophthora infestans* strains with resistance to ARDENT 50WP.

### ROTATIONAL CROP GUIDELINES

After making the last ARDENT 50WP application, rotational crops may be planted at the following intervals:

**1. Any time**

Potatoes

**2. One month**

Barley

Tobacco

Oats

Wheat

Leafy vegetables, such as head lettuce, leaf lettuce, spinach, and celery

Brassica vegetables, such as broccoli, cabbage, and cauliflower

Root/tuber and bulb vegetables, such as carrot, onion, radish, and sugar beet

**3. Seven months**

Alfalfa

Peas

Beans

Rice

Clover

Sorghum

Corn

Soybeans

**4. Twelve months**

All other crops

### DISCLAIMER

The label instructions for the use of this product reflect the opinion of experts based on research and field use. 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. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the use of, or application of the product contrary to label instructions, all of which are beyond the control of BASF Corporation (BASF). All such risks shall be assumed by the user.

BASF shall not be responsible for losses or damages resulting from use of this product in any manner not set forth on this label. User assumes all risks associated with the use of this product in any manner not specifically set forth on this label.

BASF warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above.

**BASF DOES NOT MAKE OR AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTIES, EXPRESS OR IMPLIED AND EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

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**BUYER'S EXCLUSIVE REMEDY AND BASF'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF ARDENT 50WP.** In no case shall BASF or the seller be liable for consequential, special or indirect damages resulting from the use or handling of this product.

**USES WITH OTHER PRODUCTS (TANK MIXES)**

**If this product is used in combination** with any other product except as specifically recommended in writing by BASF, then BASF shall have no liability for any loss, damage, or injury arising out of its use in any such combination not so specifically recommended. If used in a combination recommended by BASF, the liability of BASF shall in no manner extend to any damage, loss or injury not directly caused by the inclusion of the BASF product in such combination use, and in any event shall be limited to return of the amount of the purchase price of the product.

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