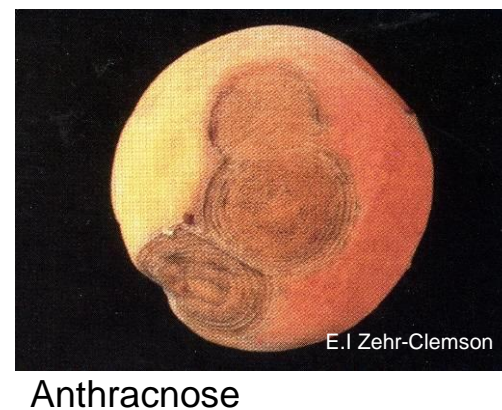


Peach Disease Management

Review and Update -- 2018



Review of Information on Fungicide Labels

GROUP 3 FUNGICIDE PULL HERE TO OPEN



syngenta.

Fungicide
Broad spectrum fungicide for control of plant diseases

Active Ingredient:
Propiconazole*..... 41.8%
Other Ingredients**..... 58.2%
Total:..... 100.0%

*CAS No. 60207-90-1
**Contains petroleum distillates
Tilt formulation is an emulsifiable concentrate (EC).
Contains 3.6 lb of propiconazole per gallon.

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.
See First Aid statement inside booklet or on container label.

EPA Reg. No. 100-817
EPA Est. 39578-TX-1
SCP 617A-L2V 1016
4080380

1 gallo
Net Contents

BASF
We create chemistry

Group 7 11 Fungicide

Pristine®

Fungicide

For use in disease control and plant health in the following crops: alfalfa; Belgium endive; berries; bulb vegetables; carrot; celery; citrus fruit; cucumber; vegetables; globe artichoke; grape; hops; pome fruit; radish; stone fruit; strawberry; and tree nut.

Active Ingredients:
pyraclostrobin; carbamic acid, [2-[[1-(4-chlorophenyl)-1H-pyrazol-3-yl]methyl]phenylmethoxy, methyl ester)..... 12.5%
boscalid**; 3-pyridinylpropanoic acid; 2-chloro-N(4'-chloro-1,1'-biphenyl-2-yl)..... 25.2%
Other Ingredients:..... 62.0%
Total:..... 100.0%

*C 128 or 0.008 lb of pyraclostrobin in 1 gal of product
**C 252 or 0.016 lb of boscalid in 1 gal of product

EPA Reg No. 7969-199

EPA Est. No.

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.)

See inside for complete First Aid, Precautionary Statements, Directions For Use, Conditions of Sale and Warranty, and state-specific crop and/or use site restrictions.

In case of an emergency endangering life or property involving this product, call day or night, 1-800-832-HELP (4357).

Net Contents:

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



Bumper® 41.8 EC
FUNGICIDE

ACTIVE INGREDIENT:..... % BY WT.
Propiconazole: 1-[[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]Methyl]-1H-1,2,4-triazole..... 41.8%
INERT INGREDIENTS:..... 58.2%
TOTAL:..... 100.0%

Bumper 41.8 EC contains 3.6 lbs. of active ingredient per gallon.

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.)

EPA Reg. No. 66222-42

For additional First Aid, precautionary, handling, and use statements,



Manufactured for:
Makhteshim Agan
of North America, Inc.
4515 Falls of Neuse Road
Suite 300
Raleigh, NC 27609

EPA 10221

Net Contents: 1 Gallon

GROUP 9 9 FUNGICIDES PULL HERE TO OPEN



Inspire Super®

Fungicide

Active Ingredients:
Difenoconazole*..... 8.4%
Cyprodinil**..... 24.1%
Other Ingredients:..... 67.5%
Total:..... 100.0%

*CAS No. 119446-68-3
**CAS No. 121552-61-2

Contains 0.73 lb of difenoconazole active ingredient and 2.09 lb of cyprodinil active ingredient per gallon.

KEEP OUT OF REACH OF CHILDREN.
CAUTION

See additional precautionary statements and directions for use inside booklet.

EPA Reg. 100-1317
EPA Est. 08655-MO-001
SCP 1317A-L1G 0515
4052903

1 gallon
Net Contents

TM

Peach Leaf Curl



Symptoms – petalfall to shuck off

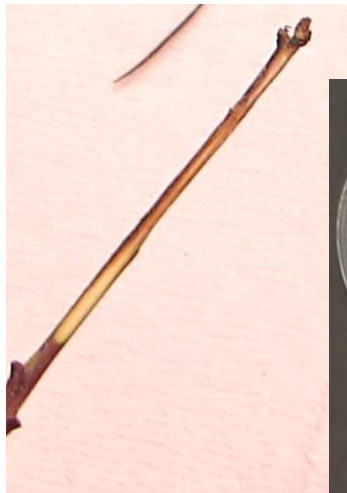
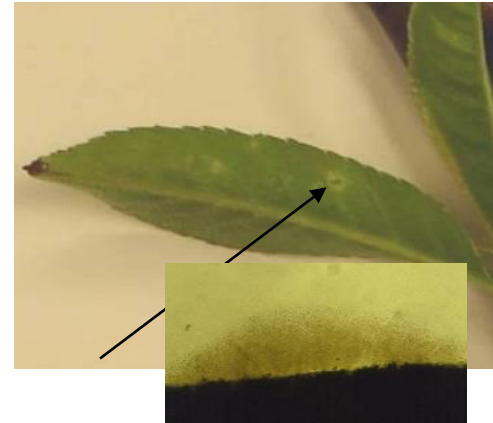
Time for Control – before bud break



Bacterial spot

Symptoms – Spring cankers – early February
 Leaves – late March-mid April
 Fruit – mid April

Time for Control – before green tissue
 and then depending on weather
 Cannot wait until symptoms



Harvest



Blossom blight



2-3 weeks after infection



1st Blossoms open

Symptoms – 1 to 3 weeks after bloom

Time for Control –

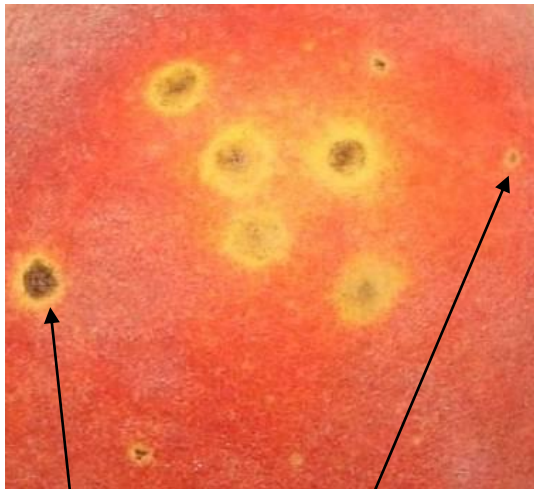
A fungicide spray at 10% bloom and again at 75-95% bloom may reduce blossom blight, when the bloom period is extended and **weather conditions are wet.**

Peach Scab



Symptoms – 5-6 weeks after infection.
Late May to mid-June

Time for Control – shuck split and 4-5 weeks



Scab vs. Bacterial Spot



Brown Rot

Symptoms – Fruit ripening/harvest

Time for Control – 2-3 weeks before
start of harvest



Fruit color break



Preharvest period usually
begins about 2-3 weeks
before expected harvesting of
the fruit.

Anthracnose/Ripe Rot



Captan in cover sprays effective but may not be effective as fruit ripen.

Abound, Pristine, Merivon are effective but resistance can rapidly occur.

DMIs generally not effective, but difenoconazole is different.

Not labeled as a 'stand-alone' for peaches. It is available in several pre-mixes, but the most effective not labeled for peaches.

Recommendation – Monitor for the disease and if seen, spray a tank-mix of **Inspire Super 20 fl oz + 4 fl oz of a propiconazole and rotate with Merivon.**

Things That Affect Fungicide Efficacy and Disease Control

Selection of appropriate fungicide – The selected fungicide must have against the target pathogen/disease.

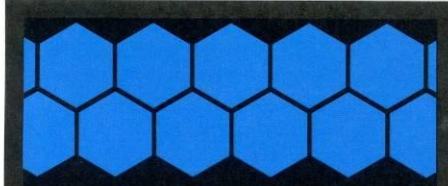
Time of fungicide application - For optimal disease control, the fungicide should be present prior to occurrence of conditions for infection – that is before rainfall or other moisture.

Application method - For optimal results, must “hit the target”. Sprayer must work properly, use correct rate of fungicide and proper amount of water per acre (100 gal/acre), conditions when fungicide is applied (wind, rain). Wind should be minimal (<5 mph) and there should be adequate time for the fungicide to dry or be absorbed.

Disease pressure - This involves two main components – pathogen inoculum and environmental conditions for infection and disease development.

[illegible]

What is different and what is similar about these 4 labels?



Bumper® 41.8 EC

FUNGICIDE

| | |
|--|-----------------|
| ACTIVE INGREDIENT: | % BY WT. |
| Propiconazole: 1-[[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]Methyl]-1H-1,2,4-triazole | 41.8% |
| INERT INGREDIENTS: | 58.2% |
| TOTAL | 100.0% |

Contains petroleum distillates.
 Bumper 41.8 EC contains 3.6 lbs. of active ingredient per gallon.

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.)

EPA Reg. No. 66222-42

For additional First Aid, precautionary, handling, and use statements, see inside of this booklet.



MANA

Manufactured by:

Makhteshim Agan

of North America, Inc.

4515 Falls of Neuse Road

Suite 300

Raleigh, NC 27609

EPA 102210/NOTIF 032411/Rev 0

Trade Name
and target

SPECIMEN

Pristine®

Fungicide

For use in disease control and plant health in the following crops: alfalfa; Belgium endive; berries; bulb vegetables; carrot; celery; citrus fruit; cucurbit vegetables; globe artichoke; grape; hops; pome fruit; radicchio; stone fruit; strawberry; and tree nut

Active Ingredients:

pyraclostrobin*: (carbamic acid, [2-[[[1-(4-chlorophenyl)-1H-pyrazol-3-yl]oxy]methyl]phenyl]methoxy-, methyl ester) 12.8%
boscalid**: 3-pyridinecarboxamide, 2-chloro-N-(4'-chloro(1,1'-biphenyl)-2-yl)-... 25.2%

Other Ingredients: 62.0%

Total: 100.0%

* 0.128 oz (0.008 lb) of pyraclostrobin in 1 oz of product

** 0.252 oz (0.0158 lb) of boscalid in 1 oz of product

EPA Reg No. 7969-199

EPA Est. No.

KEEP OUT OF REACH OF CHILDREN

CAUTION/PRECAUCION

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In case of an emergency endangering life or property involving this product, call day or night, 1-800-832-HELP (4357).

Net Contents:

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

NOTE: Emphasis of specific information does not mean other information on label is less important

Trade Name

Common name

SPECIMEN

Pristine®

Fungicide

For use in disease control and plant health in the following crops: alfalfa; Belgium endive; berries; bulb vegetables; carrot; celery; citrus fruit; cucurbit vegetables; globe artichoke; grape; hops; pome fruit; radicchio; stone fruit; strawberry; and tree nut

Active Ingredients:

| | | |
|---------------------------|--|--------------|
| pyraclostrobin | (carbamic acid, [2-[[[1-(4-chlorophenyl)-1H-pyrazol-3-yl]oxy]methyl]phenyl]methoxy-, methyl ester) | 12.8% |
| boscalid** | 3-pyridinecarboxamide, 2-chloro-N-(4'-chloro(1,1'-biphenyl)-2-yl)- | 25.2% |
| Other Ingredients: | | <u>62.0%</u> |
| Total: | | 100.0% |

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



Group 7 11 Fungicide

Trade Name

Common name

Fungicide Group(s)

SPECIMEN

Pristine®

Fungicide

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Active Ingredients:

| | |
|---|--------------|
| pyraclostrobin*: (carbamic acid, [2-[[[1-(4-chlorophenyl)-1H-pyrazol-3-yl]oxy]methyl]phenyl]methoxy-, methyl ester) | 12.8% |
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| Other Ingredients: | <u>62.0%</u> |
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EPA Est. No.

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CAUTION/PRECAUCION**

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Net Contents:

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

Trade Name

SPECIMEN

Common name

Fungicide Group(s)

Signal Words

Pristine®

Fungicide

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EPA Est. No.

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CAUTION/PRECAUTION**

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Net Contents:

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

Trade Name

Common name

Fungicide Group(s)

Signal Words

Safety and Precautions

| FIRST AID | |
|---|---|
| If on skin or clothing | <ul style="list-style-type: none"> Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice. |
| If 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 to an unconscious person. |
| If in eyes | <ul style="list-style-type: none"> Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes; then continue rinsing eyes. 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. |
| HOTLINE 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 BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357). | |

| Precautionary Statements |
|---|
| Hazards to Humans and Domestic Animals <p>CAUTION. Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing.</p> <p>Personal Protective Equipment (PPE) Some materials that are chemically resistant to this product are nitrile, butyl, neoprene, and/or barrier laminate.</p> <p>Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals.</p> <p>Applicators and other handlers must wear:</p> <ul style="list-style-type: none"> Long-sleeved shirt and long pants Chemical-resistant gloves made of any waterproof material (such as nitrile, butyl, neoprene, and/or barrier laminate) Shoes plus socks <p>Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.</p> <p>Engineering Controls Statement When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.</p> |

| USER SAFETY RECOMMENDATIONS |
|--|
| <p>Users should:</p> <ul style="list-style-type: none"> Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove clothing/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, areas where surface water is present, or intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment washwaters or rinsate.

Groundwater Advisory

Boscalid and pyraclostrobin are known to leach through soil into groundwater under certain conditions as a result of label use. These chemicals may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of boscalid and pyraclostrobin from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when

Trade Name

Common name

Fungicide Group(s)

Signal Words

Safety and
Precautions

Directions for Use

rainfall or irrigation is expected to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

This pesticide is toxic to fish and aquatic invertebrates. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

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), notification to workers 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 all crop uses except when performing cane tying, cane turning or cane girdling on grapes. The REI is **5 days** for treated grapes when conducting cane tying, cane turning or cane girdling.

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, made of any waterproof material (such as nitrile, butyl, neoprene, and/or barrier laminate)
- Shoes plus socks

STORAGE AND DISPOSAL

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

Pesticide Storage

Store in original containers only. Keep container closed when not in use. **DO NOT** store near food or feed.

(continued)

STORAGE AND DISPOSAL (continued)

Pesticide Disposal

Wastes resulting from using this product may be disposed of on-site or at an approved waste disposal facility. If these wastes cannot be disposed of according to label instructions, contact your state pesticide agency or environmental control agency, or the Hazardous Waste representatives at the nearest EPA Regional Office for guidance.

Container Handling

Nonrefillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake (capacity ≤ 50 pounds) as follows. Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Triple rinse containers too large to shake (capacity > 50 pounds) as follows. Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or mix tank. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

In Case of Emergency

In case of large-scale spillage regarding this product, call:

- CHEMTREC 1-800-424-9300
- BASF Corporation 1-800-832-HELP (4357)

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- BASF Corporation 1-800-832-HELP (4357)

Trade Name

Common name

Fungicide Group(s)

Signal Words

Safety and
Precautions

Directions for Use

Storage and Disposal

rainfall or irrigation is expected to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

This pesticide is toxic to fish and aquatic invertebrates. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

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.

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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), notification to workers and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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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, made of any waterproof material (such as nitrile, butyl, neoprene, and/or barrier laminate)
- Shoes plus socks

STORAGE AND DISPOSAL

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

Pesticide Storage

Store in original containers only. Keep container closed when not in use. **DO NOT** store near food or feed.

(continued)

STORAGE AND DISPOSAL (continued)

Pesticide Disposal

Wastes resulting from using this product may be disposed of on-site or at an approved waste disposal facility. If these wastes cannot be disposed of according to label instructions, contact your state pesticide agency or environmental control agency, or the Hazardous Waste representatives at the nearest EPA Regional Office for guidance.

Container Handling

Nonrefillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake (capacity ≤ 50 pounds) as follows. Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Triple rinse containers too large to shake (capacity > 50 pounds) as follows. Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or mix tank. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

In Case of Emergency

In case of large-scale spillage regarding this product, call:

- CHEMTREC 1-800-424-9300
- BASF Corporation 1-800-832-HELP (4357)

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- BASF Corporation 1-800-832-HELP (4357)

Trade Name

Common name

Fungicide Group(s)

Signal Words

Safety and
Precautions

Directions for Use

Storage and Disposal

Product Information

Steps to be taken in case material is released or spilled:

- In case of spill on floor or paved surfaces, mop and remove to chemical waste storage area until proper disposal can be made if product cannot be used according to label.
- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing, and wash affected skin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

Product Information

This package contains **Pristine® fungicide**, a water dispersible granule (WG). The active ingredients in **Pristine** belong to two classes of fungicides, the strobilurins and anilides. Preventive applications optimize disease control resulting in improved plant health. Overall increased plant health may result in an improvement in crop growth and crop quality as well as increased crop yields. **Pristine** is effective against pathogens resistant to other fungicides. **Pristine** has a protective effect because it inhibits spore germination. It also has a curative effect because it inhibits mycelial growth and sporulation of the fungus on the leaf surface. However, optimum disease control is achieved when **Pristine** is applied in a regularly scheduled protective spray program and is used in a rotation program with other fungicides. Because of its high specific activity and rainfastness, **Pristine** has good residual activity against target fungi.

Information regarding the contents and levels of metals in this product is available on the internet at <http://www.aapfco.org/metals.htm>.

Pristine is not for use in greenhouse or transplant production.

Sensitive Crop Precaution

Grapes - **DO NOT** use on Concord or Noiret (NY73.0136.17) due to foliar injury. Possible foliar injury could occur to Worden, Fredonia, Niagara, Steuben, Rougeon or related grape varieties. Use special care when applying **Pristine** to prevent contact with these sensitive varieties. Not all varieties have been thoroughly tested. Consult a BASF representative for more information concerning these sensitive grape varieties. Thoroughly rinse spray equipment, including the inside of the tank, hoses and nozzles after and before using the same equipment on grape varieties sensitive to **Pristine**.

Blueberry (highbush and lowbush) - **DO NOT** apply **Pristine** to blueberries as a tank mix with other pesticide products except fungicide products that contain captan (N-Trichloromethylthio-4-cyclohexene-1,2-dicarboxamide) as the **ONLY** active ingredient. **DO NOT** apply **Pristine** as a tank mix with adjuvants, liquid fertilizers, nutrients or other additives. Only use water as the spray carrier.

Modes of Action

Pyraclostrobin and boscalid, the active ingredients of **Pristine**, belong to the groups of respiration inhibitors classified by the U.S. EPA and Canada PMRA as target site of action **Group 7** and **Group 11** fungicides, respectively.

Resistance Management

Pristine contains pyraclostrobin and boscalid, a premix of a **Group 7** and a **Group 11** fungicide, and is effective against pathogens resistant to fungicides with modes of action different from those of target site **Group 7** and **Group 11**, such as dicarboximides, sterol inhibitors, benzimidazoles, or phenylamides. **Pristine** is also effective against certain pathogens with resistance to **Group 11** fungicides, such as pyraclostrobin, azoxystrobin, trifloxystrobin, or kresoxim-methyl. However, fungal isolates resistant to **Group 7** or **Group 11** fungicides may eventually dominate the fungal population if **Group 7** or **Group 11** fungicides are used predominantly and repeatedly in the same field in successive years as the primary method of control for the targeted pathogen species, especially if resistance to either **Group 7** or **Group 11** fungicides is already present in the pathogen population. This may result in reduction of disease control by **Pristine** or other **Group 7** or **Group 11** fungicides. To maintain the performance of **Pristine** in the field, **DO NOT** exceed the specified number of applications of **Pristine** and the total number of applications of **Pristine** per year stated in **Restrictions and Limitations** and **Crop-specific Use Requirements**. Adhere to the label instructions regarding the sequential use of **Pristine** or other target site of action **Group 7** and **Group 11** fungicides that have a similar site of action on the same pathogens.

Resistance Management Advisory

The following instructions can delay the development of fungicide resistance:

1. **Tank mixtures** - **Pristine** provides more effective resistance management of most of its target pathogens, because it is a premix of two fungicides with different modes of action. If **Pristine** is used in tank mixtures with fungicides from different target site of action groups that are registered/permitted for the same use and that are effective against the pathogens of concern, use at least the minimum labeled rates of each fungicide in the tank mix.
2. **IPM** - Integrate **Pristine** into an overall disease and pest management program. Follow cultural practices known to reduce disease development. Consult your local extension specialist, certified crop advisor and/or BASF representative for additional IPM strategies established for your area. **Pristine** may be used in agricultural extension advisory (disease forecasting) programs, which recommend application timing based on environmental factors favorable for disease development.
3. **Monitoring** - Monitor efficacy of all fungicides used in the disease management program against the targeted

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pathogen and record other factors that may influence fungicide performance and/or disease development.

4. **Reporting** - If a **Group 7** or **Group 11** target site fungicide appears to be less or no longer effective against a pathogen that it previously controlled or suppressed, contact a BASF representative, local extension specialist, or certified crop advisor to assist in determining the cause of reduced performance.

Cleaning Spray Equipment

Clean spray equipment thoroughly before and after applying this product, particularly if a product with the potential to injure crops was used prior to **Pristine® fungicide**.

Application Instructions

Apply directed rates of **Pristine** as instructed by **Table 2. Pristine® fungicide Crop-specific Requirements**.

Ground application is recommended for thorough coverage. Aerial application can be made, including conditions where applications are not possible using ground equipment. **Pristine** can be applied through sprinkler irrigation equipment. Check equipment frequently for calibration. Under low-level disease conditions, use the minimum application rates; use maximum application rates and shortened spray schedules for severe or threatening disease conditions.

Ground Application

Apply **Pristine** in sufficient water to ensure thorough coverage of foliage, bloom, and fruit. Thorough coverage is required for optimum disease control.

Directed or Banded Sprays

The application rates on the **Pristine** label reflect the amount of product to be applied uniformly over an acre of ground on a broadcast basis.

In some crops, **Pristine** may be used as a directed or banded spray over the rows or plant beds with the alleys or row middles left unsprayed. For such uses, reduce the labeled **Pristine** rates in proportion to the area actually sprayed. This adjustment is necessary to avoid applying the product at use rates higher than permitted according to label directions.

Use the following formula to determine the broadcast equivalent rate for doing directed or banded sprays:

$$\begin{array}{rcccl} \text{sprayed bed} & & & & \\ \text{width} & + & \text{unsprayed row} & = & \text{total row width} \\ & & \text{middles width} & & \\ \\ \text{sprayed bed} & & & & \\ \text{width in inches} & \times & \frac{\text{broadcast rate}}{\text{treated acre}} & = & \frac{\text{band rate}}{\text{field acre}} \\ \text{total row} & & & & \\ \text{width in inches} & & & & \end{array}$$

Example: A directed spray application will be made to 45-inch plant beds that are separated by 15-inch unsprayed row middles.

$$\begin{array}{rcccl} 45 \text{ inches} & & & & \\ \text{sprayed} & + & 15 \text{ inches} & = & 60 \text{ inches} \\ \text{bed width} & & \text{unsprayed} & & \text{total row width} \\ & & \text{row middles} & & \end{array}$$

The calculation to determine the appropriate equivalent rate of product to use for this situation based on a label broadcast rate recommendation of 12 ozs/acre follows:

$$\begin{array}{rcccl} 45 \text{ inches} & & & & \\ \text{sprayed} & & & & \\ \text{bed width} & \times & \frac{12 \text{ ozs}}{\text{treated acre}} & = & \frac{9 \text{ ozs}}{\text{field acre}} \\ 60 \text{ inches} & & & & \\ \text{total row width} & & & & \end{array}$$

Aerial Application

For aerial application in New York State, DO NOT apply within 100 feet of aquatic habitats (such as, but not limited to lakes, reservoirs, rivers, streams, marshes, ponds, estuaries, and commercial fish ponds).

Aerial application can be made and thorough coverage is required to obtain optimum disease control. Avoid applications under conditions when uniform coverage cannot be obtained or when spray drift may occur. Use no less than 5 gallons of spray solution per acre. For aerial application to citrus fruit, grape, hops, pome fruit, stone fruit, and tree nut, use no less than 10 gallons of spray solution per acre. Thorough coverage is required for optimum disease control.

Directions for Use Through Sprinkler Irrigation Systems

Sprayer Preparation

Clean chemical tank and injector system thoroughly. Flush system with clean water.

Application Instructions

Apply **Pristine** at rates and timings as described in this label.

Use Precautions for Sprinkler Irrigation Applications

- This product can be applied through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. **DO NOT** apply this product through any other type of irrigation system.
- Add this product to the pesticide supply tank containing sufficient water to maintain a continuous flow by the injection equipment. In continuous moving systems, inject this product-water mixture continuously, applying the labeled rate per acre for that crop. **DO NOT** exceed 1/2 inch (13,577 gallons) per acre. In stationary or non-continuous moving systems, inject the product-water mixture in the last 15 to 30 minutes of each set allowing sufficient time for all of the required pesticide to be applied by all the sprinkler heads and applying the labeled rate per acre for that crop. **DO NOT** apply when

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1. **Water** - For 100 gallons per acre spray volume, use 16 cups (1 gallon) of water. For other spray volumes, adjust rates accordingly. Use only water from the intended source at the source temperature.
2. **Water-dispersible products** (dry flowables, wettable powders, suspension concentrates, or suspo-emulsions). Cap the jar and invert 10 cycles.
3. **Water-soluble products** - Cap the jar and invert 10 cycles.
4. **Emulsifiable concentrates** (oil concentrate or methylated seed oil when applicable). Cap the jar and invert 10 cycles.
5. **Water-soluble additives** - Cap the jar and invert 10 cycles.
6. Let the solution stand for 15 minutes.
7. **Evaluate** the solution for uniformity and stability. The spray solution should not have free oil on the surface, nor fine particles that precipitate to the bottom, nor thick (clabbered) texture. **DO NOT** use any spray solution that could clog spray nozzles.

Mixing Order

1. **Water** - Begin by agitating a thoroughly clean sprayer tank 3/4 full of clean water.
2. **Agitation** - Maintain constant agitation throughout mixing and application.
3. **Inductor** - If an inductor is used, rinse it thoroughly after each component has been added.
4. **Products in PVA bags** - Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
5. **Water-dispersible products** (such as **Pristine® fungicide**, dry flowables, wettable powders, suspension concentrates, or suspo-emulsions)
6. **Water-soluble products**
7. **Emulsifiable concentrates** (such as oil concentrates when applicable)
8. **Water-soluble additives** (such as ammonium sulfate [AMS] or urea ammonium nitrate [UAN] when applicable)
9. **Remaining quantity of water**

Make sure that each component is thoroughly mixed and suspended before adding tank mix partners. Maintain constant agitation during application. See **Table 2. Pristine® fungicide Crop-specific Requirements** for more details.

Restrictions and Limitations

- **DO NOT** exceed the maximum product rate (ozs/A) per year, the maximum product rate per application, or the total number of applications of **Pristine** per year as stated in **Table 1. Pristine® fungicide Restrictions and Limitations Overview** and **Table 2. Pristine® fungicide Crop-specific Requirements**. Preharvest interval (PHI) restrictions are also included in these tables.

- **DO NOT** apply more than the maximum annual use rate of ai/acre or ozs of product/acre for each specific crop from any combination of products containing pyraclostrobin or boscalid (e.g. **Pristine**, **Endura® fungicide**, **Cabrio® EG fungicide**, **Headline® fungicide**). To determine lbs of pyraclostrobin per acre, multiply ozs of product/acre by 0.008. To determine lbs of boscalid per acre, multiply ozs of product/acre by 0.0158.

- **Pristine** is not for use in greenhouse or transplant production.

- **Blueberry (highbush and lowbush)** - **DO NOT** apply **Pristine** to blueberries as a tank mix with other pesticide products except fungicide products that contain captan (N-Trichloromethylthio-4-cyclohexene-1,2-dicarboxamide) as the **ONLY** active ingredient. **DO NOT** apply **Pristine** as a tank mix with adjuvants, liquid fertilizers, nutrients, or other additives. Only use water as the spray carrier.

- **Grape** - **DO NOT** use on Concord or Noiret (NY73.0136.17) due to foliar injury. Possible foliar injury could occur to Worden, Fredonia, Niagara, Steuben, Rougeon or related grape varieties. Not all varieties have been thoroughly tested.

- **Aerial application in hops** - **DO NOT** make more than one (1) aerial application of **Pristine** per year and include a myclobutanil product as a tank mix.

- **For aerial application in New York State, DO NOT apply within 100 feet of aquatic habitats (such as, but not limited to lakes, reservoirs, rivers, streams, marshes, ponds, estuaries, and commercial fish ponds).**

- **DO NOT** use on cowpea, field pea, grain lupin, sugar beet, garden beet, turnip root or radish.

Crop Rotation Restriction

Crops listed on the **Pristine**, **Cabrio EG**, **Endura** and **Headline** labels may be planted immediately following the last application.

All other crops can be planted 14 days after the last application.

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| Crop/Crop Group** | Minimum Time from Application to Harvest (PHI) (days) | Maximum Rate per Application (ozs product/A) | Maximum Number of Applications per Year*** | Maximum Rate per Year (ozs product/A) |
|---|---|--|--|---------------------------------------|
| Alfalfa (including alfalfa grown for seed) | 14 | 18 | 3 | 54 |
| Belgium endive | 19 | 1.6 (cold storage) | 1 | 3.4 |
| Berry subgroups | 0 | 23 | 4 | 92 |
| Bulb vegetables | 7 | 18.5 | 6 | 111 |
| Carrot | 0 | 10.5 | 6 | 63 |
| Celery | 0 | 25 | 2 | 50 |
| Citrus fruit | 0 | 18.5 | 4 | 74 |
| Cucurbit vegetables | 0 | 18.5 | 4 | 74 |
| Globe artichoke | 0 | 23 | 3 | 69 |
| Grape*** | 14 | 23 | 3 | 69 |
| Hops**** | 14 | 28 | 3 | 84 |
| Pome fruit | 0 | 18.5 | 4 | 74 |
| Radicchio (red chicory) | 14 | 25 | 2 | 50 |
| Stone fruit crop group 12-12 | 0 | 14.5 | 5 | 72.5 |
| Strawberry | 0 | 23 | 5 | 115 |
| Tree nut crop group 14-12 | 14 (for almond - 25 days) | 14.5 | 4 | 58 |

* See **Table 2. Pristine® fungicide Crop-specific Requirements** for complete directions and exceptions, including restrictions and recommendations regarding crop sensitivity as well as tank mixtures.

** For a complete list of crops labeled within a group, see **Table 2. Pristine® fungicide Crop-specific Requirements**.

*** At maximum use rate, except for grape. See **Table 2. Pristine® fungicide Crop-specific Requirements** for additional exceptions.

**** For additional ground and/or aerial application restrictions and limitations, see **Table 2. Pristine® fungicide Crop-specific Requirements**.

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Specific Crop Information

Table 2. Pristine® fungicide Crop-specific Requirements (continued)

| Crop | Target Disease | Product Use Rate per Application (ozs/A) | Maximum Number of Applications per Year | Maximum Product Rate per Year (ozs/A) | Minimum Time from Application to Harvest (PHI) (days) |
|-------------------------------------|---|--|---|---------------------------------------|---|
| Stone fruit crop group 12-12 | Alternaria leaf spot (<i>Alternaria</i> spp.) Anthracnose (<i>Colletotrichum</i> spp.) Blossom blight (<i>Monilinia</i> spp.) Brown rot (<i>Monilinia</i> spp.) Leaf spot (<i>Blumeriella jaapii</i>) Powdery mildew (<i>Sphaerotheca</i> spp., <i>Podosphaera</i> spp.) Ripe fruit rot (<i>Monilinia fructicola</i> , <i>Monilinia laxa</i> , <i>Botrytis cinerea</i> , <i>Rhizopus</i> spp.) Rust (<i>Tranzschelia discolor</i>) Scab (<i>Cladosporium carpophilum</i>) Shothole (<i>Wilsonomyces carpophilus</i>) | 10.5 to 14.5 | 5* | 72.5 | 0 |
| Nectarine | Suppression Only: | | | | |
| Peach | Leaf curl** (<i>Taphrina deformans</i>) | | | | |

Application Directions. Begin application of **Pristine** at pink bud or prior to onset of disease development and continue on a 7 to 14 day interval.

Use the shorter interval and/or the higher rate when disease pressure is high.

For aerial application to stone fruit, use no less than 10 gallons of spray solution per acre.

* **DO NOT** make more than the Maximum Number of Applications per Year for applications made at the maximum Product Use Rate per Application. Additional applications per year are permitted when a lower Product Use Rate per Application is used, as long as the Maximum Product Rate per Year is not exceeded.

Resistance Management. To limit the potential for development of resistance, **DO NOT** make more than two (2) sequential applications of **Pristine** or other **Group 7** or **Group 11** fungicides before alternating to a labeled fungicide with a different mode of action.

** Not registered for use in California.

How Will La Niña Impact Winter 2017?

Forecast 10 November 2017

