SHEPHERD® Fungicide

An ArborSystems™ Direct-Inject™ Chemical

For Systemic Fungicide Suppression of Selected Diseases in Ornamental Trees

ACTIVE INGREDIENT:

Propiconazole (CAS No. 60207-90-1) ........... 14.3%

OTHER INGREDIENTS .......................... 85.7%

Total 100.0%

Contains 0.5 oz (14 grams) active ingredient per 4 fl oz (120 ml) pack.

DIRECTIONS FOR USE

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

The ArborSystems Direct-Inject units are designed to be used only with ArborSystems pre-packed chemicals. Tampering with packs or contents may cause non-warrantied damage to your injection system.

STORAGE AND DISPOSAL

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

Pesticide Storage: Store in original container in a cool, dry place. 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: Non-refillable container; do not reuse or refill this container. Completely empty pack into application equipment, then offer for recycling, if available, or dispose of empty pack in a sanitary landfill or by incineration.

Keep Out of Reach of Children

WARNING

See booklet for First Aid, additional Precautionary Statements and complete Directions for Use.
SHEPHERD® Fungicide
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For Systemic Fungicide Suppression of Selected Diseases in Ornamental Trees
Intended for use by professional arborists/applicators, foresters, grounds maintenance professionals and landscapers.

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Net Contents: 4 fl oz (120 ml)
EPA Reg. No. 69117-3
EPA Est. 69117-NE-1

Keep Out of Reach of Children
WARNING
See booklet for First Aid, additional Precautionary Statements and complete Directions for Use.

ArborSystems™
The No-Drill® Injection Solution
800-698-4641 • Fax: 402-339-5011
P.O. Box 34645 • Omaha, NE 68134
SHEPHERD® Fungicide
An ArborSystems™ Direct-Inject™ Chemical

SHEPHERD® Fungicide

For Systemic Fungicide Suppression of Selected Diseases in Ornamental Trees

Intended for use by professional arborists/applicators, foresters, grounds maintenance professionals and landscapers.

ACTIVE INGREDIENT:
Propiconazole (CAS No. 60207-90-1) ....................... 14.3%
OTHER INGREDIENTS ...................................... 85.7%

Total 100.0%

Contains 4.25 oz (117 grams) active ingredient per 1 qt 2 fl oz (1000 ml) pack.

DIRECTIONS FOR USE
It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
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STORAGE AND DISPOSAL
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Net Contents: 1 qt 2 fl oz (1000 ml)
EPA Reg. No. 69117-3
EPA Est. 69117-NE-1
Table 2. Ornamentals – Plant Species

<table>
<thead>
<tr>
<th>Wood Ornaments</th>
<th>Nonbearing Fruits and Nuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ash (4c)</td>
<td>Apple (3g, 4g, 5a)</td>
</tr>
<tr>
<td>Azaleas (2c, 4b)</td>
<td>Cherry (3h, 3d)</td>
</tr>
<tr>
<td>Crabapples (3c, 3q, 4c, 5a)</td>
<td>Citrus (3m)</td>
</tr>
<tr>
<td>Crape Myrtles (4a)</td>
<td>Honeysuckle (2b)</td>
</tr>
<tr>
<td>Dogwood (3h, 4c)</td>
<td>Lawn/Landscape Plantings (Outdoor Uses Only)</td>
</tr>
<tr>
<td>Douglas Fir (5b)</td>
<td>Shasta (3f, 4e)</td>
</tr>
<tr>
<td>Hawthorn (5a)</td>
<td>Shrub (3b)</td>
</tr>
<tr>
<td>Juniper (3a)</td>
<td>Walnut (2j)</td>
</tr>
</tbody>
</table>

OAK WILT AND DUTCH ELM DISEASE

Use Shepherd Fungicide only as a preventative for Oak Wilt and Dutch Elm Disease.

- OAK WILT affects the vascular system and causes plugging throughout the tree; treat- ment of infected trees is rarely successful.
- DUTCH ELM DISEASE causes plugging between the tree and branches, and ultimately entire trees. The most conspicuous symptom of Dutch Elm Disease is brown, stunted new shoots with short, narrow needles.

Note: 1. Accurate diagnosis of Oak Wilt and Dutch Elm Disease is important, since Shepherd Fungicide provides only suppression of these diseases on this label.
2. Shepherd Fungicide will be most effective when used in conjunction with other cultural practices recommended for management of Oak Wilt and Dutch Elm Disease (removal of dead elm trees, pruning of diseased tree limbs and branches, control of bark beetles, etc.).

Conifer Blights

Diploida Tip Blight affects a variety of pines. It kills current-year shoots and branches, and ultimately entire trees. The most conspicuous symptom of diploida blight is brown, stunted new shoots with short, narrow needles. Infected new shoots often become discolorated (tan, brown) while still encased in dust-like sheaths. Presence of resin droplets and one or a few very small needles are usually the first indications that a new shoot is infected. Entire new shoots are killed rapidly by the fungus. Trees repeatedly infected have some branches killed back to the main stem. Repeated infections reduce growth, deform trees, and ultimately kill them.

Treatment will not cure already affected areas of the tree but will prevent the spread of infection. Removal of dead branches, cones and fallen debris will reduce the amount of fungal spores available to cause new infections. Wait for dry weather to prune to avoid spreading spores on pruning equipment. Between cuts, sanitize tools by dipping in 70% alcohol or a 10% solution of household bleach in water.

How to Use the ArborSystems Direct-Inject Chemicals with Shepherd® Wedgle® Direct-Inject Tree Injection System

1. Use only ArborSystems Direct-Inject chemicals with your unit as they have been formulated specifically for the Direct-Inject system.

2. Attach the chemical pack to the Direct-Inject unit and prepare the unit to make injections.
3. Set the delivery volume on the unit.
4. Follow the label directions in this booklet to determine the amount of chemical and number of injection sites.
5. Determine where to make injections in the bark. Generally, the injection tip is inserted into the fissure (valley) of the tree bark. Injek thin-barked trees in the thicker part of the tree bark. Thick-barked trees require fungi longer injection times.
6. Make injections working along the circumference of the tree. Make Wedgle® Tip injections within 6” to 12” off the ground. Use the Portle® Tip for injecting Sycamores or thick-barked hardwoods such as elms at the base of the tree.
7. With a smooth motion, firmly squeeze the injection unit handles. This releases a pre- measured chemical dose to the tree.
8. Continue making injections moving around the tree until the entire tree trunk has been treated.
9. During use, periodically clean the Wedgle® Direct-Inject unit to prevent clogging.

Storage and Disposal

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

Pesticide Storage: Store in original container in a cool, dry place.

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

Conservation Disposal: Non-refillable container; do not reuse or refill this container. Completely empty pack into application equipment, then offer for recycling, if available, or dispose of empty pack in a sanitary landfill or by incineration.

Table 3. Diseases

1. Conifer Blights
   a. Phomopsis juniperovora (Phomopsis Blight)
   b. Siroccocus strobolos (tip blight)
   c. Sphaeropsis sapinea (Oak Wilt)
   d. Siroccocus strobolos (tip blight)
   e. Sphaeropsis sapinea (Oak Wilt)
   f. Siroccocus strobolos (tip blight)

2. Flower Blight
   a. Acroclaytrum chrysanthemum (Ray Blight)
   b. Monilinia spp.
   c. Oidium spp.
   d. Leaf Blights/Spots
   a. Alternaria spp.
   b. Cercospora spp. (Brown Leaf Spot)
   c. Closodium spp. (Sclerotinia)
   d. Cyclaconium spp.
   e. Diocoma spp.
   f. Erysiphe spp.
   g. Microsyphe spp.
   h. Phomopsis juniperovora (Brown Leaf Spot)
   i. Gymnosporangium juniperi-virginianae (Anthracnose)
   j. Plutia syfis (Anthracnose)
   k. Venturia inaequalis (Black spot)
   l. Podospora spp. (Zonate leaf spot)
   m. Podospora spp. (Zonate leaf spot)
   n. Phomopsis juniperovora (Brown Leaf Spot)
   o. Phomopsis juniperovora (Brown Leaf Spot)
   p. Microsyphe spp.
   q. Phomopsis juniperovora (Brown Leaf Spot)
   r. Microsyphe spp.
   s. Phomopsis juniperovora (Brown Leaf Spot)
   t. Microsyphe spp.
   u. Phomopsis juniperovora (Brown Leaf Spot)
   v. Microsyphe spp.
   w. Phomopsis juniperovora (Brown Leaf Spot)
   x. Microsyphe spp.
   y. Phomopsis juniperovora (Brown Leaf Spot)
   z. Microsyphe spp.
   AA. Phomopsis juniperovora (Brown Leaf Spot)
   BB. Phomopsis juniperovora (Brown Leaf Spot)

3. Galls
   a. Entomosporium maculatum (Galls of Pines and Needles)
   b. Gymnosporangium juniperi-virginianae (Galls of Pines and Needles)
   c. Gymnosporangium juniperi-virginianae (Galls of Pines and Needles)
   d. Gymnosporangium juniperi-virginianae (Galls of Pines and Needles)
   e. Gymnosporangium juniperi-virginianae (Galls of Pines and Needles)

4. Rust
   a. Gymnosporangium juniperi-virginianae
   b. Melampsora mistiaca (Rust)
   c. Phragmidium spp.
   d. Phyllactinia spp.
   e. Phyllactinia spp.
   f. Phyllactinia spp.
   g. Phyllactinia spp.

5. Fungi
   a. Alternaria sp.
   b. Alternaria sp.
   c. Alternaria sp.
   d. Alternaria sp.
   e. Alternaria sp.
   f. Alternaria sp.
   g. Alternaria sp.
   h. Alternaria sp.
   i. Alternaria sp.
   j. Alternaria sp.

6. The most conspicuous symptom of Dutch Elm Disease is brown, stunted new shoots with short, narrow needles. Infected new shoots often become discolorated (tan, brown) while still encased in dust-like sheaths. Presence of resin droplets and one or a few very small needles are usually the first indications that a new shoot is infected. Entire new shoots are killed rapidly by the fungus. Trees repeatedly infected have some branches killed back to the main stem. Repeated infections reduce growth, deform trees, and ultimately kill them.

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7. With a smooth motion, firmly squeeze the injection unit handles. This releases a pre- measured chemical dose to the tree.
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9. During use, periodically clean the Wedgle® Direct-Inject unit to prevent clogging.

Storage and Disposal

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Pesticide Storage: Store in original container in a cool, dry place.

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

Container Disposal: Non-refillable container; do not re-use or refill this container. Completely empty pack into application equipment, then offer for recycling, if available, or dispose of empty pack in a sanitary landfill or by incineration.

NOTICE OF WARRANTY

ArborSystems warrants that this product conforms to the chemical description on the label and is fit for use as advertised strictly in accordance with the directions on the labeling. To the extent consistent with applicable law, ArborSystems does not make or authorize any agent or representative to make any other warranty, guarantee or representation, express or implied, concerning this product.

If on Skin or Clothing:
treatment advice.
Call a poison control center or doctor for

Selected Diseases in Ornamental Trees

FIRST AID
To be used only with the ArborSystems professionals and landscapers, applicators, foresters, grounds maintenance professionals and landscapers.

An ArborSystems Wedgle® Direct-Inject Tree Injection System.

Phased®
Chemical
category selection chart.
Category C 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; butyl, nitrile and neoprene rubber; polyvinyl chloride (PVC); or Viton
• Shoes plus socks
• Protective eyewear
Discard clothing and other absorbent materials that have been drenched or heavily contami-
nated with this product’s concentrate; do not reuse them. Follow manufacturer’s instructions for cleaning/maintaining PPE. If no such instructions are available, use detergent and hot water. Keep and wash PPE separately from other laundry.

PERSONAL PROTECTIVE EQUIPMENT (PPE)
Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category C on an EPA chemical-resistance category selection chart.

If on Skin or Clothing: Take off contaminated clothing. Immediately rinse skin with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

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

If Inhaled: 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.

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

Note to Physician: If ingested, induce emesis or lavage stomach; treat symptomatically.

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTICAL ANIMALS
WARNING: Causes substantial but tempo-
rary eye injury. Wear goggles or face shield.
Causes skin irritation. Do not get in eyes, on skin or on clothing. Harmful if swallowed, inhaled or absorbed through the skin. Avoid breathing vapor. Thoroughly wash with soap and water after handling. Remove and wash contaminated clothing before reuse.

DIRECTIONS FOR USE
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Intended for use by professional arborists/appli-
cators, foresters, grounds maintenance profes-
sionals and landscapers.

PRODUCT INFORMATION
Do Not Inject Food Bearing Plants
The No-Drilling Injection Solution

ARBORSYSTEMS™ WEDGLE®
DIRECT-JECT™ TREE INJECTION SYSTEM
The ArborSystems Wedgle® Direct-Inject Tree Injection System is a no-drill trunk injection method and is easy to use. Most trees are treated in as little as five minutes or less, allowing applicators to treat trees quickly. There is no need to wait for absorption (translocation). Chemical is injected into the cambial area (the active vascular system) of the tree. Because the chemical is placed right where the tree can use it, effectiveness of the chemical is increased. Use in sunny or overcast conditions, rainy or dry, at any time of day. As no drilling or implants are required, you can treat trees year after year, with no threat of long-term or permanent damage to the tree. This system minimizes wound ing and promotes long-term tree health and vigor.

The ArborSystems Wedgle® Direct-Inject Tree Injection System is a no-drill trunk injection system. There is no need to wait for absorption (translocation). Chemical is injected into the cambial area (the active vascular system) of the tree, right where the tree can use it, effectiveness of the chemical is increased. Use in sunny or overcast conditions, rainy or dry, at any time of day. As no drilling or implants are required, you can treat trees year after year, with no threat of long-term or permanent damage to the tree. This system minimizes wound ing and promotes long-term tree health and vigor.

Table 1. Overview of Diseases and Treatments

<table>
<thead>
<tr>
<th>Diseases</th>
<th>Treatment</th>
<th>Dosage per injection site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conifer Blights (See additional notes below)</td>
<td>Use for curative or preventative treatment.</td>
<td>Higher dosages generally provide longer control</td>
</tr>
<tr>
<td>Diploida Tip Blight and other Conifer blights such as Tip Blight in Pines and Junipers</td>
<td>2-4 ml</td>
<td></td>
</tr>
<tr>
<td>Oak Wilt Disease for an uninfected Oak (not including Red Oak)</td>
<td>3-5 ml</td>
<td>Apply only to uninfected trees. Wilt diseases can only be prevented, not cured.</td>
</tr>
<tr>
<td>Dutch Elm Disease for an uninfected Elm</td>
<td>5-10 ml</td>
<td>Applications should be made early during the growing season, spring through late summer, providing a minimum of 12-month protection.</td>
</tr>
</tbody>
</table>

Anthracnose and Leaf Diseases in hardwoods

Anthracnose in Sycamore

Leaf diseases in Oaks, Crapabope, and non-ornamental orchard trees including Cherry, Pecan, Pyracantha and Walnut

Powdery Mildew in Ash, Dogwood, Lilac and non-ornamental Crapabope and Pecan

Flower Blight of non-ornamental ornamental Cherry, Pecan, Plum

Rust on Douglas Fir, Hawthorn, Poplars, Shaasta Fir, and non-ornamental Crapabope

Trees with leaf disease symptoms can be treated to prevent recurrence for the following year. Annual treatments are required for prevention.

Note: Because some treatments require large amounts of chemical per site, there may be occasions where it is difficult to keep all of the chemical dose in the injection site. If this is experienced, several options are possible:

1) Use the Portle or WedglePlus Injection Tips which have a check valve in the hub of each tip which keeps chemical in the tree until it is absorbed.
2) Reduce dosage volume by half and double the number of injection sites.
3) Inject half the dose at each site, mark the tree, and one week later check valves in the hub of each tip which keeps chemical in the tree until it is absorbed.
4) Return to the marked tree and inject remaining dosage in each site.

SH_BK_13-1