

68539-4

2/27/2013

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FEB 27 2013

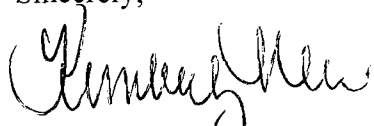
Ms. Jamie Aggas  
Regulatory Coordinator  
BioWorks, Inc.  
100 Rawson Road, Suite 205  
Victor, NY 14564

Re: Product Name – T-22 WP Biological Fungicide  
EPA Reg. No. 68539-4  
Your application dated February 7, 2013 to add four alternate brand names (RootShield® Seed Treatment, RootShield® Seed Treatment Biological Fungicide, RootShield® AG, and RootShield® AG Biological Fungicide) and add an optional marketing claim related to the product's composition consistent with Pesticide Registration (PR) Notice 98-10 Decision No. 475509

Dear Ms. Aggas:

The Biopesticides and Pollution Prevention Division is in receipt of your application, as indicated above, for notification under PR Notice 98-10. A preliminary screen of this request has been conducted for its applicability under PR Notice 98-10, and it has been determined that the action requested falls within the scope of this document. Our records have been duly noted, and the label submitted with this application has been stamped "Notification Accepted" and will be placed accordingly in our records. Submit two (2) copies of final printed labeling before the product, as modified, is sold or distributed [40 C.F.R. § 156.10(a)(6)].

Questions concerning this action should be directed to Ms. Jeannine Kausch by phone (703-347-8920) or email ([kausch.jeannine@epa.gov](mailto:kausch.jeannine@epa.gov)).

Sincerely,  
  
Kimberly Nesch, Chief  
Microbial Pesticides Branch  
Biopesticides and Pollution  
Prevention Division (7511P)

CONCURRENCES

SYMBOL	7511P	7511P	7511P				
SURNAME	KAUSCH	Borges	Mear				
DATE	02/26/2013	2/26/13	2/27/13				

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Please read instructions on reverse before completing form.

Form Approved. OMB No. 2070-0060

Print Form

 United States <b>Environmental Protection Agency</b> Washington, DC 20460	<input type="checkbox"/> Registration <input type="checkbox"/> Amendment <input checked="" type="checkbox"/> Other	OPP Identifier Number
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**Application for Pesticide - Section I**

<b>1. Company/Product Number</b> BioWorks, Inc./68539-4	<b>2. EPA Product Manager</b> Sheryl Reilly	<b>3. Proposed Classification</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
<b>4. Company/Product (Name)</b> BioWorks, Inc./T-22 WP Biological Fungicide	<b>PM#</b> Microbial Pesticides/BPPD	
<b>5. Name and Address of Applicant (Include ZIP Code)</b>  BioWorks, Inc. 100 Rawson Road, Suite 205    Victor, NY 14564  <input type="checkbox"/> Check if this is a new address	<b>6. Expedited Review.</b> 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**

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

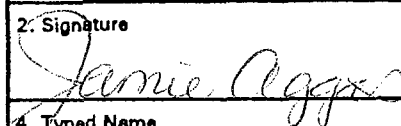
**Explanation:** Use additional page(s) if necessary. (For section I and Section II.)

Notification to add alternate brand names and optional marketing language. This notification is consistent with the provisions of PR notice 98-10 and EPA regulations at 40 CFR 152.46 and no other changes have been made to the labeling or CSF for this product.

**Section - III**

<b>1. Material This Product Will Be Packaged In:</b>				<b>2. Type of Container</b>	
<b>Child-Resistant Packaging</b> <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No	<b>Unit Packaging</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>Water Soluble Packaging</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
* Certification must be submitted		If "Yes" Unit Packaging wgt.    No. per container	If "Yes" Package wgt    No. per container	<input type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input checked="" type="checkbox"/> Other (Specify) _____	
<b>3. Location of Net Contents Information</b> <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		<b>4. Size(s) Retail Container</b> 2.63, 4oz, 1, 3, 30, 500 lb		<b>5. Location of Label Directions</b> <input checked="" type="checkbox"/> On Label <input checked="" type="checkbox"/> On Labeling accompanying product	
<b>6. Manner in Which Label is Affixed to Product</b> <input checked="" type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled				<input type="checkbox"/> Other _____	

**Section - IV**

<b>1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)</b>		
<b>Name</b> Jamie Aggas	<b>Title</b> Regulatory Coordinator	<b>Telephone No. (Include Area Code)</b> 585-924-4362
<b>Certification</b> I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		<b>6. Date Application Received (Stamped)</b>        
<b>2. Signature</b> 	<b>3. Title</b> Regulatory Coordinator	
<b>4. Typed Name</b> Jamie Aggas	<b>5. Date</b> February 7, 2013	

# T-22 WP

## *Biological Fungicide*

*(Alternate Brand Names: PlantShield® HC Biological Foliar and Root Fungicide; PlantShield® HC Biological Fungicide; T-22™ HC Biological Fungicide; RootShield® Home and Garden Biological Fungicide; Root Guardian; RootShield® Seed Treatment; RootShield® Seed Treatment Biological Fungicide, RootShield® AG, RootShield® AG Biological Fungicide)*

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[Optional Marketing Claim: Wettable Powder Formulation]

**ACTIVE INGREDIENT:**

*Trichoderma harzianum* Rifai strain T-22\* ..... 1.15%

**OTHER INGREDIENTS:** ..... 98.85%

**TOTAL:** ..... 100.00%

\*Contains at least 1.0 x 10<sup>7</sup> colony forming units per gram dry weight.

**Notification Accepted**

**Date:** 02/27/2013

**Reviewer:** J. KAUSCH

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

[See attached label booklet for First Aid, Precautionary Statements, Storage and Disposal Instructions and Directions for Use]

[See foldout panel for First Aid]

[See foldout panel for Directions for Use]

FIRST AID	
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15 – 20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<p><b>HOT LINE NUMBER:</b> Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-222-1222 for emergency medical treatment information.</p>	

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## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Harmful if absorbed through skin, inhaled, or swallowed. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Avoid breathing dust. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear protective eyewear, long sleeved shirt, long pants, waterproof gloves, shoes and socks. Mixers/loaders and applicators must wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95 or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization. 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.

### USER SAFETY RECOMMENDATIONS

Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing. Users should remove clothing / PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

### ENVIRONMENTAL HAZARDS

(Agricultural Use) For terrestrial uses: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate.

(Residential; Home and Garden Use) To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area.

EPA Reg. No.: 68539-4  
EPA Est. No.: 068539-NY-001

**Manufactured by:** BioWorks, Inc., 100 Rawson Road, Ste. 205, Victor, NY 14564 (800) 877-9443

Net Weight: (2.63 oz., 4 oz. (Residential Use)); (1 lb, 3 lb, 30 lb, 500 lb (Agricultural))  
Lot No.: \_\_\_\_\_  
Expiration Date: \_\_\_\_\_

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### 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 workers may be in the area during application. For any requirement specific to your State or Tribe, consult the State or Tribal 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 or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours.

Exception: If the product is soil injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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 protective eyewear, coveralls, waterproof gloves, shoes, and socks.

#### 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.

Keep unprotected persons out of treated areas until sprays have dried or dusts have settled.

#### PRODUCT INFORMATION

T-22 WP Biological Fungicide (T-22 WP) is a preventative biological fungicide for control of plant diseases. The active ingredient is a microbe, *Trichoderma harzianum* Rifai strain T-22, which when applied to seeds, transplants or other propagative material, or to soil or planting mixes, grows onto plant roots as they develop and provides protection against plant root pathogens such as *Pythium*, *Rhizoctonia*, *Fusarium*, *Cylindrocladium* and *Thielaviopsis*. In the greenhouse, T-22 WP is a preventative that suppresses foliar\*\* pathogens such as *Botrytis* and mildews on flowers, bedding plants and ornamentals. T-22 WP can be used alone or in conjunction with certain chemical fungicides; consult the appropriate tank mix compatibility charts below or your BioWorks Representative for more information.

This product must not be tank mixed with chemicals that contain the following active ingredients: imazilil, propiconazole, tebuconazole, and triflumizole. Do not apply T-22 WP immediately before these pesticides are used. **See specific instructions for tank mixing.** Where early season seed rot and seedling diseases are expected, use chemically treated seed or other appropriate measures for stand establishment and T-22 WP for root disease control.

Note [ATTENTION:]: T-22 WP contains live spores of a microbe that must be used prior to disease onset. T-22 WP becomes active in soil or on plants when temperatures are above 50°F and is not effective while temperatures remain cold. T-22 WP can be applied to sterilized or fumigated soil but must be applied after sterilization or fumigation.

\*\*This product is not intended for foliar application in California.

T-22 WP is for use in soil applications (drench, in soil furrow, and potting soil), seed treatments and greenhouse foliar applications on ornamentals, landscape plants, turf, and ornamental trees, including tree seedlings for transplanting into the forest.

**ATTENTION: DO NOT APPLY to sugarcane, peachay, rice, mushrooms, kiwi, tobacco, barley, oats, lemon, apple, and chickpea. Not for use on aquatic crops. Greenhouse foliar applications are for non-food crops only. This product is not intended for foliar application in California.**

**For food commodities: In the table immediately following this paragraph, greenhouse chemigation and field chemigation of food commodities are annotated with an asterisk (\*) to indicate that these methods are limited to flood, drip, furrow, micro-irrigation, and ebb and flow systems with NO OVERHEAD SPRAY. Do not apply product when above-ground harvestable food commodities are present. Refer to Chemigation section for additional specific directions.**

**APPLY VIA GROUND APPLICATION ONLY.**

**CROPS ON WHICH T-22 WP MAY BE USED**

CROPS	USE	APPLICATION RATE OF T-22 WP
<b>Berries and Small Fruits:</b> Blackberries, Blueberries, Currants, Elderberries, Gooseberries, Huckleberries, Loganberries, Raspberries, Strawberries, Grapes	Cutting or bare-rooted transplant dip	0.25 – 5.0 lb / 5 gal water or dip directly into dry powder.
	Greenhouse soil drench	1.0 – 32.0 oz / 100 gal water
	Nursery soil drench	1.0 – 32.0 oz / 100 gal water
	In-furrow spray or transplant starter solution	1.0 – 32.0 oz / acre
	Home & garden soil drench	1.0 – 3.0 tbsp / gal water
	*Greenhouse chemigation	1.0 – 32.0 oz / 100 gal water
	*Field chemigation	1.0 – 32.0 oz / 100 gal water
<b>Bulb Vegetables:</b> Garlic, Leeks, Onions, Shallots, Ornamental Bulbs	Dust (pre-plant)	0.03 – 3.0 lb / cwt seed
	Home & garden soil drench	1.0 – 3.0 tbsp / gal water
<b>Cereal Grains:</b> Buckwheat, Corn (grain, seed, sweet corn, silage, popcorn, high oil), Rye, Wheat, Sorghum, Millet	Planter box (onsite)	1.0 - 10.0 oz / cwt seed
	Commercial seed treatment	0.0176 – 0.529 lb / cwt seed
	*Field chemigation	1.0 – 32.0 oz / 100 gal water
<b>Citrus Fruits:</b> Citrus Hybrids, Grapefruit, Kumquat, Limes, Oranges, Pummelos	Cutting or bare-rooted transplant dip	0.25 – 5.0 lb / 5 gal water or dip directly into dry powder.
	Greenhouse soil drench	1.0 – 32.0 oz / 100 gal water
	Nursery soil drench	1.0 – 32.0 oz / 100 gal water
	In-furrow spray or transplant starter solution	1.0 – 32.0 oz / acre
	*Greenhouse chemigation	1.0 – 32.0 oz / 100 gal water
	*Field chemigation	1.0 – 32.0 oz / 100 gal water
<b>Cucurbit Vegetables:</b>	Planter box (onsite)	1.0 – 10.0 oz. / cwt seed

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CROPS	USE	APPLICATION RATE OF T-22 WP
Cucumbers, Melons (i.e. Chinese waxgourd, Citron melon, Muskmelons, or Watermelon) Gourds, Pumpkins, Squash	Commercial seed treatment Greenhouse soil drench In-furrow spray or transplant starter solution Home & garden soil drench *Greenhouse chemigation *Field chemigation	0.088 – 3.5 lb / cwt seed 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / acre  1.0 – 3.0 tbsp / gal water 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / 100 gal water
<b>Flowers, Bedding Plants, and Ornamentals</b>	Cutting or bare-rooted transplant dip Commercial seed treatment Greenhouse soil drench Nursery soil drench Home & garden soil drench Greenhouse foliar spray** Greenhouse chemigation Field chemigation	0.25 – 5.0 lb / 5 gal water or dip directly into dry powder. 0.088 – 26.4 lb / cwt seed 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / 100 gal water 1.0 – 3.0 tbsp / gal water 0.1 – 1.0 oz / gal water 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / 100 gal water
<b>Fruiting Vegetables:</b> Eggplant, Sweet and Hot Peppers, Tomatillos, Tomatoes	Commercial seed treatment Greenhouse soil drench In-furrow spray or transplant starter solution Home & garden soil drench *Greenhouse chemigation *Field chemigation	0.35 – 26.4 lb / cwt seed 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / acre  1.0 – 3.0 tbsp / gal water 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / 100 gal water
<b>Herbs, Spices, and Mints</b>	Commercial seed treatment Greenhouse soil drench In-furrow spray or transplant starter solution Home & garden soil drench *Greenhouse chemigation *Field chemigation	0.35 – 26.4 lb / cwt seed 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / acre  1.0 – 3.0 tbsp / gal water 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / 100 gal water
<b>Hydroponic Crops:</b> Cucumbers, Tomatoes, Lettuce, Herbs and Spices	Greenhouse soil drench Home & garden soil drench *Greenhouse chemigation	1.0 – 32.0 oz / 100 gal water 1.0 – 3.0 tbsp / gal water 1.0 – 32.0 oz / 100 gal water
<b>Leafy and Brassica (Cole) Leafy Vegetables:</b> Arugula, Celery, Chervil, Endive, Fennel, Lettuce (head and leaf), Parsley, Radicchio, Rhubarb, Spinach, Swiss Chard, Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Collards, Kale, Kohlrabi, Mustard Greens  <b>Asparagus</b>	Cutting or bare-rooted transplant dip Commercial seed treatment Greenhouse soil drench In-furrow spray or transplant starter solution Home & garden soil drench *Greenhouse chemigation *Field chemigation	0.25 – 5.0 lb / 5 gal water or dip directly into dry powder. 0.35 – 26.4 lb / cwt seed 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / acre  1.0 – 3.0 tbsp / gal water 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / 100 gal water
<b>Legume Vegetables (Succulent or Dried):</b> Beans (soybean, snap, dry), Lentils, Peas	Planter box (onsite) Commercial seed treatment Home & garden soil drench *Field chemigation	1.0 – 10.0 oz / cwt seed 0.0004 – 0.529 lb / cwt seed 1.0 – 3.0 tbsp / gal water 1.0 – 32.0 oz / 100 gal water
<b>Nongrass Animal Feeds (Forage, Fodder, Straw, and</b>	Planter box (onsite) Commercial seed treatment	1.0 – 10.0 oz / cwt seed 0.35 – 26.4 lb / cwt seed

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CROPS	USE	APPLICATION RATE OF T-22 WP
<b>Hay):</b> Alfalfa, Clover, Vetch, Trefoil		
<b>Oilseed Crops:</b> Cotton, Canola, Safflower, Sunflower	Planter box (onsite) Commercial seed treatment *Field chemigation	1.0 – 10.0 oz / cwt seed 0.0176 – 0.529 lb / cwt seed 1.0 – 32.0 oz / 100 gal water
<b>Peanuts</b>	Planter Box (onsite) Commercial seed treatment Home & garden soil drench	1.0 – 10.0 oz / cwt seed 0.0004 – 0.529 lb / cwt seed 1.0 – 3.0 tbsp / gal water
<b>Pome Fruits:</b> Pears, Quince	Greenhouse soil drench Nursery soil drench In-furrow spray or transplant starter solution Home & garden soil drench *Greenhouse chemigation *Field chemigation	1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / acre 1.0 – 3.0 tbsp / gal water 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / 100 gal water
<b>Root and Tuber Vegetables:</b> Beets, Sugar Beets, Carrots, Celeriac, Chicory, Horseradish, Parsnip, Radish, Rutabaga, Salsify, Turnips	Planter box (onsite) Commercial seed treatment	1.0 – 10.0 oz / cwt seed 0.088 – 3.52 lb / cwt seed
Potatoes, Sweet Potatoes, Yams, Jerusalem Artichoke, Cassava, Ginger	Planter box (onsite) In-furrow spray or transplant starter solution *Field chemigation	0.03 – 3.0 lb / cwt seed tubers or cut potato seed pieces 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / 100 gal water
<b>Shadehouse and Outdoor Nursery Crops:</b> Deciduous Trees (i.e. Maple, Oak), Ornamentals, Grapes, Citrus, Pine	Cutting or bare-rooted transplant dip Greenhouse soil drench Nursery soil drench In-furrow spray or transplant starter solution Home & garden soil drench *Greenhouse chemigation *Field chemigation	0.25 – 5.0 lb / 5 gal water or dip directly into dry powder. 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / acre 1.0 – 3.0 tbsp / gal water 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / 100 gal water
<b>Stone Fruits:</b> Apricots, Cherries, Nectarines, Peaches, Plums, Prunes	Cutting or bare-rooted transplant dip Greenhouse soil drench Nursery soil drench In-furrow spray or transplant starter solution Home & garden soil drench *Greenhouse chemigation *Field chemigation	0.25 – 5.0 lb / 5 gal water or dip directly into dry powder. 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / acre 1.0 – 3.0 tbsp / gal water 1.0 – 32.0 oz / 100 gal water 1.0 – 32.0 oz / 100 gal water
<b>Tree Nuts:</b> Almonds, Beech Nuts, Brazil Nuts, Butternuts, Cashews, Chestnuts, Filberts,	Cutting or bare-rooted transplant dip Greenhouse soil drench	0.25 - 5.0 lb / 5 gal water or dip directly into dry powder. 1.0 - 32.0 oz / 100 gal water



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CROPS	USE	APPLICATION RATE OF T-22 WP
Hickory Nuts, Macadamia Nuts, Pecans, Pistachios, Walnuts	Nursery soil drench	1.0 – 32.0 oz / 100 gal water
	In-furrow spray or transplant starter solution	1.0 – 32.0 oz / acre
	Home & garden soil drench	1.0 – 3.0 tbsp / gal water
	*Greenhouse chemigation	1.0 – 32.0 oz / 100 gal water
	*Field chemigation	1.0 – 32.0 oz / 100 gal water
<b>Turfgrass:</b> Turf, Sports Fields, Parks, Established and New Preparation of Golf Course Tees, Greens, Fairways and Roughs, Seed Production, Sod Production	Planter box (onsite)	1.0 – 10.0 oz / cwt seed
	Commercial seed treatment	0.35 – 26.43 lb / cwt seed

\*\* This product is not intended for foliar application in California.

**SEED TREATMENT FOR TRUE SEED CROPS**

**ONSITE APPLICATION TO SEED:** For protection against root diseases, apply 1.0 - 10.0 ounces of T-22 WP/hundredweight of seed. For example, for large, smooth seeds such as soybean and dry bean and smaller or rougher seeds such as peas and field corn, apply 1.0 – 8.0 ounces of T-22 WP /hundredweight of seed. For sweet corn, apply 1.0 – 10.0 ounces T-22 WP/hundredweight of seed. To assure uniform application, add half the required amount of T-22 WP to half the seed in the hopper, mix with a wooden paddle, and then add the remaining seed and T-22 WP. T-22 WP can also be applied in sufficient water to coat seeds. For maximum seed protection, especially in cold soils, apply T-22 WP to commercially treated seed such as seed treated with Captan, Apron and or Demosan for stand establishment.

Do not use treated seed for food or feed purposes or process for oil. Treat only those seeds needed for immediate use, minimizing the interval between treatment and planting. Do not store excess treated seeds beyond planting time.

**COMMERCIAL SEED TREATMENT:** Apply T-22 WP as a slurry, a coating, in a pellet, or during seed priming. See table below.

Note: This product does not contain dye and is not covered by an appropriate tolerance exemption, or other clearance under the Federal Food, Drug and Cosmetic Act. To comply with 40 CFR 153.155 therefore, all seeds treated commercially with this product must be colored with an EPA-approved dye or colorant of suitable color to prevent accidental use as food for man or feed for animals.

The Federal Seed Act requires that bags containing seed treated with this product shall be labeled with the following information: "This seed has been treated with *Trichoderma harzianum* Rifai strain T-22. Do not use for food, feed or oil purposes."

**AGRICULTURAL CROPS**

Seed Size (#seeds/oz)	Grams of T-22 WP per lb of seed	Ounces of T-22 WP per lb of seed
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Large (1-100) such as: peanuts, green & dry beans, field corn	0.0016 -- 0.32 g	0.00006 -- 0.0113 oz
Medium (100-1,000) such as: sweet corn, soybeans, sorghum	0.08 -- 2.4 g	0.0028- 0.0847 oz
Small (1,000-10,000) such as: cabbage, cucumbers, sugar beets	0.4 – 16 g	0.0141 – 0.564 oz
Fine (10,000-100,000) such as: tomatoes	1.6 – 120 g	0.0564 – 4.23 oz

**ORNAMENTAL CROPS**

Seed Size (#seeds/oz)	Grams of T-22 WP per lb of seed	Ounces of T-22 WP per lb of seed
Small (1,000 – 10,000) such as: Echinacea, Cosmos	0.4 – 16 g	0.0141 – 0.564 oz
Fine (10,000 – 100,000) such as: Texas bluegrass, ryegrass	1.6 – 120 g	0.0564 – 4.23 oz
Very Fine (100,000 – 500,000) such as: bentgrass	8.0 – 80 g	0.282 – 2.82 oz

**SEED TREATMENT FOR VEGETATIVELY PROPAGATED CROPS (INCLUDING POTATOES, OTHER ROOT AND TUBER VEGETABLES, AND BULB VEGETABLES)**

For planting or storage, treat at 0.03 – 3.0 pounds T-22 WP to 100 lbs (1 cwt) of bulbs or cut potato seed pieces. Alternatively, dip bulbs, tubers or cut potato seed pieces in a suspension consisting of 0.25 - 5.0 pounds of T-22 WP in 5 gallons of water.

For potatoes, apply T-22 WP with compatible chemical seed dusts. Consult your BioWorks Representative for more information. All surfaces, knives, and other equipment used to cut and plant potatoes should be thoroughly sterilized before cutting and planting and at regular intervals. The cut and treated seed pieces may be held for a week or more at cool temperatures, 45-50°F, and high relative humidity to promote suberization, or they may be planted immediately.

**DIP FOR CUTTINGS AND BARE-ROOTED TRANSPLANTS**

Dip cuttings and bare-rooted transplants in T-22 WP dry powder or in a suspension of 0.25 - 5.0 pounds of T-22 WP in 5 gallons of water. Plant treated cuttings and bare-rooted transplants in potting mix or soil in the usual manner.

**SOIL DRENCH**

**GREENHOUSE SOIL DRENCH:** Suspend 1.0 – 32.0 ounces of T-22 WP in 100 gallons of water with agitation, and apply prepared suspension as a soil drench to greenhouse planting mixes. For seeding flats

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or shallow (up to 4-inch depth) beds or pots, apply prepared suspension at a rate of 50 - 100 gallons per 800 square feet. For deeper beds or pots, apply prepared suspension at a rate of 100 gallons per 400 square feet, 1/2 cup (4 fluid ounces) for pots with a 3-inch diameter, or 1 cup (8 fluid ounces) for pots with a 6-inch diameter.

Apply T-22 WP directly to the soil through low pressure watering nozzles such as fan nozzles or other drench watering systems. Constant agitation is required to maintain T-22 WP in suspension. T-22 WP can be tank mixed and is compatible with many commonly used fungicides, liquid fertilizers, herbicides, insecticides and biological control products registered for use on greenhouse/ornamental plants. If tank mixes are desired, observe the most restrictive of labeling limitations and precautions of all products used in mixtures. Consult the tank mix compatibility chart below or your BioWorks representative for more information.

**NURSERY SOIL DRENCH:** Suspend 1.0 – 32.0 ounces of T-22 WP in 100 gallons of water with agitation, and apply prepared suspension as a soil drench to container nursery crops. For shallow (up to 4-inch depth) beds or pots, apply prepared suspension at a rate of 50 - 100 gallons per 800 square feet. For deeper beds or pots, apply prepared suspension at a rate of 100 gallons per 400 square feet, 1/2 cup (4 fluid ounces) for pots with a 3-inch diameter, or 1 cup (8 fluid ounces) for pots with a 6-inch diameter. Apply T-22 WP directly to the soil through low pressure watering nozzles such as fan nozzles, other drench watering systems, handheld sprayers or backpack sprayers.

Constant agitation is required to maintain T-22 WP in suspension. T-22 WP can be tank mixed and is compatible with many commonly used fungicides, liquid fertilizers, herbicides, insecticides and biological control products registered for use on nursery plants. If tank mixes are desired, observe the most restrictive of labeling limitations and precautions of all products used in mixtures. Consult the tank mix compatibility chart below or your BioWorks representative for more information.

**IN-FURROW SPRAY OR TRANSPLANT STARTER SOLUTION:** Apply T-22 WP as an in-furrow spray or transplant starter solution at a rate of 1.0 – 32.0 ounces/acre in sufficient water to achieve uniform application. Maintain constant agitation. T-22 WP can be tank mixed and is compatible with many commonly used fungicides, liquid fertilizers, herbicides, insecticides and biological control products registered for use on nursery plants. If tank mixes are desired, observe the most restrictive of labeling limitations and precautions of all products used in mixtures. Consult the tank mix compatibility chart below or your BioWorks representative for more information.

**TANK MIXING:** T-22 WP can be tank mixed and is compatible with many commonly used fungicides, liquid fertilizers, herbicides, insecticides and biological control products. If tank mixes are desired, observe the most restrictive of labeling limitations and precautions of all products used in mixtures. Consult the tank mix compatibility chart below or your BioWorks representative for more information. **This product must not be tank mixed with chemicals that contain the following active ingredients: imazilil, propiconazole, tebuconazole, and triflumizole.** Do not apply T-22 WP immediately before these pesticides are used.

In accordance with the most restrictive of label limitations and precautions (for all products used in a tank mixture), this product can be mixed with specific products (see table immediately below), their active ingredient percentages and their application rates for use in greenhouse soil drench, nursery drench, in-furrow spray and transplant starter solution. Do not exceed label dosage rates. This product cannot be mixed with any product containing a label prohibition against such mixing.

**COMPATIBILITY FOR GREENHOUSE SOIL DRENCH, NURSERY DRENCH, IN-FURROW SPRAY OR TRANSPLANT STARTER SOLUTION TANK MIXES:**

Note: While the information presented in this table is believed to be up-to-date, the user must always read the label of the other products used in a tank mix to confirm application rates and dilutions.

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Chemical Name	% A.I., Formulation Type	Product Name	Application Rate (Amount of Product / Unit Area)	Dilution (Amount of Product / Amount of Water)
Captan	85%, Wettable Powder	Captan 85WP	1.88 lb/Acre	0.1 oz/gal
Chlorothalonil	82.5%, Water Dispersible Granules	Daconil Ultrex	3.7 ounces per 1000 ft <sup>2</sup>	0.56 oz/gal
Iprodione	23.3%, Flowable	Chipco 26019 Flo	4 ounces per 1000 ft <sup>2</sup>	0.6 oz/gal
Thiophanate methyl	50%, Wettable Powder	Cleary's 3336 in water soluble bags	8 ounces per 1000 ft <sup>2</sup>	1.2 oz/gal
Iprodione	50%, Soluble Granules	Rovral	0.75 lb/Acre	0.04 oz/gal
Metalaxyl	21.3%, Liquid	Subdue Maxx	0.25 ounces per 800 ft <sup>2</sup>	0.05 oz/gal
Chlorpyrifos	50%, Emulsifiable Liquid	Lorsban 4E	3.2 ounces per gallon	3.2 oz/gal

**HOME & GARDEN SOIL DRENCH:** For preventative control of root diseases of vegetable, flower, and ornamental plants. For drench application to seeds, mix 1.0 to 3.0 tablespoons of T-22 WP per gallon of water, and apply mixture with a watering can or other device to 25 feet of planting furrow before covering the seeds with soil.

For transplants, mix 1.0 to 3.0 tablespoons of T-22 WP per gallon of water, and apply 1/2 - 1 cup (4 - 8 fluid ounces) of mixture per plant at transplanting. For new plant beds, mix 1.0 - 3.0 tablespoons of T-22 WP per gallon of water, and apply mixture at a rate of one gallon per 25 square feet of plant bed.

For established beds or potted plants, mix 1.0 - 3.0 tablespoons of T-22 WP per gallon of water, and apply mixture at a rate of 1 gallon per 25 square feet of plant bed or 1/2 - 1 cup (4 - 8 fluid ounces) per 4 - 8 inch diameter pot.

T-22 WP is designed for application to seeds, plant roots and soil for control of plant root diseases and is not to be used for spray application to foliage or fruit.

**FOLIAR SPRAY**

**GREENHOUSE FOLIAR SPRAY\*\*:** Greenhouse foliar applications are for non-food crops only. For preventative control of *Botrytis*, powdery mildew, and other fungal pathogens on greenhouse-grown flowers, bedding plants and ornamentals, apply T-22 WP to foliage and blossoms every 7 - 14 days depending on disease pressure. T-22 WP can be applied 7 - 10 days after application of a chemical/biorational fungicide. Consult manufacturer or sales representative for specific product recommendations.

NOTE: \*\*This product is not intended for foliar application in California.

Apply T-22 WP at a rate of 0.10 - 1.0 ounce per gallon of water. Use a quantity of spray sufficient to thoroughly cover foliage. Spray to wet, but avoid runoff. T-22 WP can be applied using hand-held backpack or ground spray equipment. Do not use in low-volume sprayers.

To improve plant surface coverage, consider tank mixing T-22 WP with a nonionic spreader sticker. Agitation is required to maintain suspension. Clean application equipment before use of this product and use sprays within 4 hours of preparation.

To prevent nozzle tip clogging, the manufacturer recommends using 50 - 100 mesh inlet screens in all spray equipment.

**TANK MIXING:** T-22 WP can be tank mixed and is compatible with many commonly used fungicides, liquid fertilizers, herbicides, insecticides and biological control products registered for use on greenhouse plants. If tank mixes are desired, observe the most restrictive of labeling limitations and precautions of all products used in mixtures. Consult the tank mix compatibility chart below or your BioWorks representative for more information. **This product must not be tank mixed with chemicals that contain the following active ingredients: imazilil, propiconazole, tebuconazole, and triflumizole.** Do not apply T-22 WP immediately before these pesticides are used.

In accordance with the most restrictive of label limitations and precautions (for all products used in a tank mixture), this product can be mixed with specific products (see table immediately below), their active ingredient percentages and their application rates for use in greenhouse foliar spray. Do not exceed label dosage rates.

This product cannot be mixed with any product containing a label prohibition against such mixing.

#### COMPATIBILITY FOR GREENHOUSE FOLIAR SPRAY TANK MIXES\*\*:

Note: While the information presented in this table is believed to be up-to-date, the user must always read the label of the other products used in a tank mix to confirm application rates and dilutions.

Chemical Name	% A.I., Formulation Type	Product Name	Application Rate (Amount of Product / Unit Area)	Dilution (Amount of Product / Amount of Water)
Captan	85%, Wettable Powder	Captan 85WP	1.88 lb/Acre	0.1 oz/gal
Chlorothalonil	82.5%, Water Dispersible Granules	Daconil Ultrex	3.7 ounces per 1000 ft <sup>2</sup>	0.56 oz/gal
Iprodione	23.3%, Flowable	Chipco 26019 Flo	2 ounces per 1000 ft <sup>2</sup>	0.3 oz/gal
Triadimefon	25%, Soluble Granules	Bayleton 25 Turf & Ornamental Fungicide	0.75 ounces per 1000 ft <sup>2</sup>	0.11 oz/gal
Azoxystrobin	50%, Soluble Granules	Heritage	0.4 ounces per 1000 ft <sup>2</sup>	0.06 oz/gal
Vinclozolin	50%, Wettable Powder	Ronilin DF	0.75 lb/Acre	0.04 oz/gal
Iprodione	50%, Soluble Granules	Rovral	0.75 lb/Acre	0.04 oz/gal

\*\*This product is not intended for foliar application in California.

To reduce potential residue and minimize clogging of spray equipment, the manufacturer recommends the following decanting procedure. Place one gallon of water in a container. Add the desired nonionic spreader-sticker. Mix. Based on the final spray volume, add appropriate amount of T-22 WP. Let the solution sit for 10 minutes. Agitate for 10 minutes. Let the solution sit for less than one minute. Pour off the liquid that now contains T-22 WP into the spray tank. Add a small amount of water to the settled material in the container to remove any remaining T-22 WP. Briefly mix and let solution sit for less than one minute. Pour off liquid into the spray tank. Bring spray volume to the desired level.

#### GREENHOUSE AND FIELD CHEMIGATION

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Suspend 1.0 – 32.0 ounces T-22 WP in 100 gallons of water with agitation and apply only through the following systems: 1) pressurized drench (flood) or drip (trickle), 2) furrow, 3) micro-irrigation such as spaghetti-tube or individual tube irrigation, 4) hand-held calibrated irrigation equipment such as the hand-held wand with injector, and 5) ebb and flow. Do not apply this product through any other type of irrigation system.

Crop injury or lack of effectiveness 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.

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.

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

**Requirements for Chemigation Systems Connected to Public Water Systems:**

- 1) 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.
- 2) Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back flow preventer (RPZ) 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 flow 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.
- 3) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 4) 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.
- 5) 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.
- 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.
- 8) Apply T-22 WP during the last half of the water application period. Mix T-22 WP in enough water to be able to draw through the system for the last half of the water application. Maintain constant agitation.
- 9) Apply enough water to move T-22 WP into the root zone. Amounts will vary depending on soil type and existing moisture level. Do not apply water volumes that would cause runoff or excessive leaching.

**Drip (Trickle) Chemigation and Micro-irrigation Requirements:**

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- 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.
- 5) The irrigation line or water pump must include a functional pressure switch, which will stop the water pump motor when the water pressure decreases to the point where 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) Apply T-22 WP during the last half of the water application period. Mix T-22 WP in enough water to be able to draw through the system for the last half of the water application. Maintain constant agitation.
- 8) Apply enough water to move T-22 WP into the root zone. Amounts will vary depending on soil type and existing moisture level. Do not apply water volumes that would cause runoff or excessive leaching.

**Flood and Furrow Chemigation Requirements:**

- 1) Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity, such as a drop structure or weir box, to decrease potential for water source contamination from back flow if water flow stops.
- 2) Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:
  - a. 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.
  - b. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
  - c. 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.
  - d. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
  - e. The irrigation line or water pump must include a functional pressure switch, which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

f. 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.

3) Apply T-22 WP during the last half of the water application period. Mix T-22 WP in enough water to be able to draw through the system for the last half of the water application. Maintain constant agitation.

4) Apply enough water to move T-22 WP into the root zone. Amounts will vary depending on soil type and existing moisture level. Do not apply water volumes that would cause runoff or excessive leaching.

**PLANT SAFETY:** T-22 WP has been tested on numerous plant varieties with no phytotoxic effects. However, since T-22 WP has not been tested on all plant varieties or in combination with all available tank mixes, the manufacturer recommends testing T-22 WP on a small number of plants to check for adverse plant effects before applying to a larger number of plants.

**STORAGE AND DISPOSAL (Agricultural Use)**

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

**PESTICIDE STORAGE:** Store in a cool, dry place. Do not store at temperatures above 75°F for prolonged periods. Keep container tightly closed when not in use.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product must be disposed of on-site or at an approved waste disposal facility.

**CONTAINER HANDLING:** Nonrefillable container. Do not reuse or refill this container. Completely empty bag by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then offer for recycling if available, or dispose of empty bag in sanitary landfill or by incineration. Do not burn, unless allowed by state and local ordinances. If burned, stay out of smoke. If outer box is contaminated, dispose of in same manner as required for the bag.

**STORAGE AND DISPOSAL (Residential; Home and Garden Use)**

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

**PESTICIDE STORAGE:** Store in original container in a cool, dry and locked place inaccessible to children and pets. Do not store at temperatures above 75°F for prolonged periods. Keep container tightly closed when not in use.

**PESTICIDE DISPOSAL AND CONTAINER HANDLING:** Nonrefillable container. Do not reuse or refill this container. **If empty** –Place in trash or offer for recycling if available. **If partly filled** – Call your local solid waste agency or 1-800-CLEANUP for disposal instructions. Never place unused product down indoor or outdoor drain.

**NOTICE TO BUYER AND SELLER:** Seller warrants that this product conforms to the description on this label and is reasonably fit for the purposes stated on this label when used and stored in accordance with the directions for use. This warranty does not extend to use of this product contrary to label directions or under conditions not reasonably foreseeable by the Seller, and Buyer and User assume the risk of any such use. To the extent consistent with applicable law, Seller disclaims all other warranties, express or implied, including any warranty of fitness or merchantability. To the extent consistent with applicable law, Seller shall not be liable for consequential, special or indirect damages resulting from use or handling of this product, and Seller's sole liability and Buyer's and User's exclusive remedy shall be limited to refund of the purchase price. This product is sold only for uses stated on its label.

[Country: United States of America]



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[In Case of Emergency, Call CHEMTREC: (800) 424-9300]

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