

For Greenhouse, Nursery, Interiorscapes, Agriculture and Turf

## ACTINOVATE® SP

Biological Fungus Control.

Controls soil-borne plant diseases such as *Pythium*, *Rhizoctonia*, *Phytophthora*, *Verticillium*, *Fusarium* and others.

Suppresses and Controls Foliar Disease such as Powdery Mildew, and *Botrytis* 100% Soluble. Will not clog machinery.

### ACTIVE INGREDIENTS:

Streptomyces lydicus\* .....00.0371%

OTHER INGREDIENTS: .....99.9629%

\*End-use product contains not less than 1 X 10<sup>7</sup> colony forming units per gram Streptomyces lydicus WYEC 108

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

### KEEP OUT OF REACH OF CHILDREN

### CAUTION

See back panel for additional precautionary statements.

US Patent Number: 5,403,584  
EPA Reg. No.: 73314-1  
EPA Establishment No.: 73314-TX-001

### Manufactured by:

Natural Industries, Inc.  
6223 Theall Road

Houston, Texas 77066  
Questions? (888) 261-4731

Net Contents: 18-oz

### PRECAUTIONARY STATEMENTS

**Hazard to humans and domestic animals:** Caution. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

**Personal Protective Equipment (PPE):** Applicators and other handlers must wear long-sleeved shirt and long pants, and shoes plus socks. Mixer/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. Keep and wash PPE separately from other laundry.

**User Safety Requirements:** Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove PPE immediately after handling this product. If gloves are worn, wash the outside of gloves before removing. Users should remove clothing immediately if pesticide gets inside. As soon as possible, wash thoroughly and change into clean clothing.

### ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean highwater mark. Do not contaminate water when cleaning equipment or disposing of equipment washwater.

### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

### Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and

exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry intervals (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

For foliar application such as foliar greenhouse and turfgrass, do not allow worker entry into treated areas during the restricted entry interval (REI) of one (1) hour or until solution has dried. Exception: If the product is soil incorporated (such as landscape, ornamental bulbs, seed coating and drench) the Worker Protection Standard, under certain circumstances, allows workers to enter treated area if there is no contact with anything that has been treated.

PPE requirements 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, waterproof gloves and shoes plus socks. Exception: If the product is soil-incorporated, the Worker protection Standard, under certain circumstances, allows workers to enter treated area if there will be no contact with anything that has been treated.

### Non-Agricultural Use Requirements

The requirements in this box apply to uses of the 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.

### General Information:

Actinovate® SP is a biological fungicide for the suppression/control of root rot and damping-off fungi and the suppression/control of foliar fungal pathogens. Soil borne fungi controlled include *Fusarium*, *Rhizoctonia*, *Pythium*, *Phytophthora*, *Phytophthora*, *Aphanomyces*, *Monosporascus*, *Armillaria*, *Sclerotinia*, *Postia*, *Verticillium*, *Geotrichum*, and other root-decay fungi. The active ingredient in Actinovate® SP colonizes the root system and protects it from harmful fungi. Actinovate® SP effectively suppresses/controls foliar diseases such as Powdery Mildew and *Botrytis* and others.

### APPLICATION DIRECTIONS:

#### Compatibility

Actinovate® SP is completely soluble and does not require agitation to keep suspended in a solution. Actinovate® SP is compatible with chemical fungicides, insecticides and fertilizers. If tank mixes are desired, observe all directions, precautions and limitations on labeling of all products used. Actinovate® SP can be tank mixed with all chemical fungicides, insecticides, and fertilizers unless otherwise restricted. Avoid tank mixing with bactericides. Avoid applying bactericides and soil fumigants to the areas treated with Actinovate® SP. Consult manufacturer for compatibility questions.

#### Application Timing

Apply Actinovate® SP throughout the growing season from early spring to late fall on all types of turf, ornamental, and vegetable crops.

#### Application Uses:

Actinovate® SP is a biological fungicide for use in soil and seed coating applications (drench and in furrow) and greenhouse foliar applications in or on all raw agricultural commodities, food and fiber crops (greenhouse use only), ornamentals, landscape plants, including tree seedlings for transplanting to the field.

### GREENHOUSE, NURSERY OR INTERIORSCAPE DRENCH

Mix 6 oz. of Actinovate® SP in 100 gallons of water to create solution. Apply solution as a drench to plants/growing media at a rate of 1 gallon per cubic foot of growing media (this equates to enough solution to saturate soil without creating run-off).

**For smaller quantities: Use 1 teaspoon of Actinovate SP per 2 gallons of water to create solution and apply as above.**

Actinovate® SP can be applied through low pressure watering nozzles such as fan nozzles, through overhead boom type sprayers or sprinklers, hydroponics systems, injectors, flood benches or other drench watering systems. Actinovate® SP is compatible with chemical fungicides, insecticides, and fertilizers as well as other biological products.

### GREENHOUSE FOLIAR SPRAYS

For preventative suppression/control of powdery mildew, *Botrytis* and other foliar diseases on indoor greenhouse crops.

Apply 6-12 oz Actinovate® SP per acre. Dissolve Actinovate® SP in 50-100 gallons of water and apply to foliage and blossoms every 7 to 14 days depending on disease pressure. Crop size, spray equipment and local practice will determine the volume of water needed. Spray to wet, but avoid run-off. Actinovate® SP can be applied using hand-held backpack or ground spray equipment. Clean application equipment before use of this product, and use prepared sprays within 4 hours of preparation.

For best results use a non-ionic spreader-sticker in conjunction with application. Consult manufacturer or sales representative for specific product recommendations.

#### **Cutting or Bare Rooted Transplant Dip:**

Dip cuttings or transplants in Actinovate® SP dry powder or in a solution of 18-oz Actinovate® SP and 5 gallons water. For larger trees or woody ornamental, dissolve 18-oz of Actinovate® SP in 50 gallons of water and let bare root plants soak in the solution for 4-12 hours prior to planting. Plant treated cuttings or transplants in potting mix or soil in the usual manner.

#### **Ornamental Bulb Crops:**

**Bulb Soak:** Soak bulbs in solution of Actinovate® SP at 6-18 oz per 100-lbs of bulbs. Thoroughly cover all surfaces of bulbs with solution for 1 hour prior to planting.

**Soil Drench:** Apply to soil through irrigation or as an in furrow seed spray at 6-12 oz per acre.

**Bulb Dusting:** Prior to planting or shipping, evenly dust bulbs at a rate of 2-6 oz per 100-lbs of bulbs.

#### **TURF GRASS:**

Mix Actinovate® SP with appropriate amount of water (100-125 gallons per acre). Apply at a rate of 54-oz of Actinovate® SP per acre for initial application or problem areas. Apply maintenance applications of 18 oz. per acre every 4 to 8 weeks. For best results use a wetting agent to best move solution to the root zone of the turf. Consult manufacturer for product recommendations.

#### For smaller application areas:

*For initial application or problem area use 3 heaping tablespoons of Actinovate dissolved in 5 gallons of water to create a solution. Apply solution to soil at a rate of 5 gallons per 1,000 sq. ft. of turf grass.*

*Reapply every 6-8 weeks as a maintenance application. Use 1 heaping tablespoon of Actinovate® SP dissolved in 5 gallons of water to create a solution. Apply solution to soil at a rate of 5 gallons per 1,000 sq. ft. of turf.*

#### **GREENHOUSE CHEMIGATION**

Apply Actinovate® SP at 6 oz per 100 gallons of water. Actinovate® SP may be applied through 1) overhead boom and mist-type systems, sprinklers such as impact or micro-sprinklers 2) pressurized drench (flood) or drip (trickle) systems 3) micro irrigation such as spaghetti-tube or individual tube irrigation, 3) hand-held calibrated irrigation equipment such as hand-held wand with injector and 5) ebb and flow systems.

Do not apply this product through any other type of irrigation system.

Plant injury or lack of effectiveness can result from non-uniform distribution of treated water. Questions concerning calibration should be directed to your State Extension Service Specialist, the equipment manufacturer or other expert.

Do not connect an irrigation system used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

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.

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

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

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.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

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.

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.

If you have any questions regarding calibrations, contact equipment manufacturers, state extension specialists or other experts.

#### **STORAGE AND DISPOSAL**

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

**Pesticide Storage:** Store in a dry, cool place out of direct sunlight and away from heat sources. Keep from overheating or freezing. Optimum storage temperature is 40<sup>o</sup> F to 85<sup>o</sup> F.

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

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

#### **Limited Warranty / Disclaimer**

Manufacturer warrants that this product is suited for the labeled use when applied according to label directions. Manufacturer makes no warranty of merchantability. There are no warranties that extend beyond the description on this label and in no event shall manufacturer be liable for any consequential damages.

Manufactured By:  
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**BEST IF USED BY:**

**LOT NUMBER:**

**Label Version: 6.0**