

PM 21 4581-373 4-3-98 10/4

elf atochem

ATO

# MICROTHIOL<sup>®</sup> SPECIAL

## MICRONIZED WETTABLE SULFUR

ACTIVE INGREDIENT:

Sulfur ..... 80.0%

INERT INGREDIENTS: ..... 20.0%

TOTAL ..... 100.0%

EPA Registration No. 4581-373

EPA Establishment No. 44420-FR-1

**KEEP OUT OF REACH OF CHILDREN**

### CAUTION

#### STATEMENT OF PRACTICAL TREATMENT

**IF ON SKIN:** Wash with soap and water.

**IF IN EYES:** Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

**IF SWALLOWED:** Give one or two glasses of water and induce vomiting by sticking finger down throat. Never give anything by mouth to an unconscious person.

#### PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS (AND DOMESTIC ANIMALS)

### CAUTION

May cause irritation of eyes. Harmful if swallowed, inhaled, or absorbed through skin. Avoid breathing dust or spray mist. Avoid contact with skin, eyes, or clothing.

#### PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- waterproof gloves, and
- shoes plus socks
- protective eyewear

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:

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

#### ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply where runoff is likely to occur. Do not contaminate water when disposing of equipment washwaters.

#### 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 24 hours.

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
- waterproof gloves
- shoes plus socks
- protective eyewear

#### 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.

OBSERVE SPECIFIC INSTRUCTIONS FOR USE IN CALIFORNIA.

#### APPLICATION INSTRUCTIONS

Apply through any type of handheld, knapsack, mechanical or pneumatic spraying equipment.

**MIXING:** Pour the required amount of MICROTHIOL SPECIAL into the indicated amount of water while stirring. MICROTHIOL SPECIAL disperses instantly.

##### Dilute Application:

Field: Specified rate in 20 to 60 gallons of water per acre.

Orchard: Specified rate in 100 to 800 gallons of water per acre.

##### Concentrated Application:

Field: Specified rate in 5 to 10 gallons of water per acre.

Orchard: Specified rate in 20 to 100 gallons of water per acre.

##### Aerial Application:

Field: Specified rate in 3 to 20 gallons of water per acre.

Orchard: Specified rate in 10 to 20 gallons of water per acre.

#### COMPATIBILITY

Microthiol Special is completely compatible with Bordeaux mixture, copper fungicides, liquid fertilizers and all organic fungicides, insecticides, acaricides and herbicides.

#### USE INSTRUCTIONS

Some crops may be damaged by sulfur under certain climatic conditions, such as when temperature is high. Elf Atochem does not recommend application if temperature will exceed 90°F within the three days following spraying, due to the risk of crop injury. Crops grown in greenhouses may be much more sensitive to sulfur injury, so the lowest labeled rate (or below labeled rates) should be tried initially. Do not use on any crop unless sulfur has been shown to be safe in your locality. Do not allow spray to drift onto sulfur-sensitive crops such as apricots, cranberries, spinach and d'Anjou pears.

Do not use within two weeks of an oil spray treatment, except for Dormant, Delayed Dormant, or Postharvest applications with a suitable oil. For citrus, do not apply within 21 days of an oil spray. Spreader/stickers are not required for use with

3044

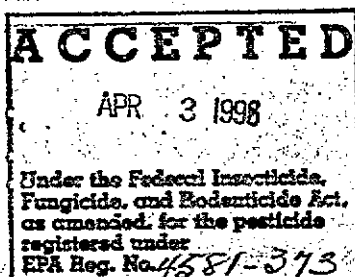
MICROTHIOL. If spreader/stickers are used with MICROTHIOL, foliar injury may be enhanced under high temperatures. When growing crops for processing, consult the processor before applying sulfur.

NOTE: The application rates specified for each crop are the maximum that should be applied. These amounts may be reduced if experience or local practice indicate that lesser amounts may be effective. Consult State Agriculture Experiment Station or State Extension Service specialist for rates recommended in your local area.

VEGETABLE CROPS

CROP	PEST	RATE LBS/A	DIRECTIONS
Beans	Leaf Spot Powdery Mildew	7	Apply at early leaf stage and repeat at 14-day intervals or as needed.
Broccoli, Brussels Sprouts, Cabbage, Cauliflower	Powdery Mildew Red Spider Mite	3-10	Begin in early leaf stage. Repeat every 10 to 14 days or as needed.
Carrots	Powdery Mildew Petrobia Mite	3-10	Apply at early leaf stage and repeat every 14 days or as needed.
Cucumbers	Powdery Mildew	2-4	Apply when disease first appears and repeat as necessary. Do not apply more than 2 pounds MICROTHIOL per acre per application during periods of high temperatures.
Greens: Collards, Kale, Mustard	Powdery Mildew Red Spider Mite	3-10	Apply at early leaf stage and repeat every 14 days or as needed.
Lettuce (Head and Leaf)	Powdery Mildew Rust Red Spider Mite	5-6	Apply at early leaf stage and repeat every 14 days or as needed. Thorough coverage is required.
Onions, Garlic, Dry Onions, Dry Shallots	Powdery Mildew Petrobia Mite	3-10	Apply when disease first appears and repeat as needed. California Only: Apply 6 lbs per acre when disease first appears and repeat as necessary.
Potatoes	Powdery Mildew Red Spider Mite	5	Apply at early leaf stage and repeat every 14 days or as needed.
Peppers	Powdery Mildew Broad Mite* Red Spider Mite	3-10	Apply at early leaf stage and repeat every 14 days or as needed.
Rutabagas	Powdery Mildew Red Spider Mite	3-10	Apply at early leaf stage and repeat every 14 days or as needed. California Only: Apply 5 lbs per acre at early leaf stage and repeat every 14 days or as needed.
Squash	Powdery Mildew	5-10	Apply when disease first appears and repeat as needed. Sulfur can injure plants, especially when temperature reaches 95° F. Do not use on sulfur sensitive varieties.
Tomatoes	Two-Spotted Mite* Russet Mite Powdery Mildew	5-10	Begin application when symptoms first appear. Thorough coverage is required.
Turnips	Powdery Mildew Red Spider Mite	3-10	Apply at early leaf stage and repeat every 14 days or as needed. California Only: Apply 5 lbs per acre at early leaf stage and repeat every 14 days or as needed.

\*NOT FOR THIS USE IN CALIFORNIA



FRUIT AND NUT CROPS

CROP	PEST	RATE LBS/A	DIRECTIONS
Almonds	Brown Rot Leaf Spot Silver Mite Flat Mite Red Spider Mite	10-20	Apply at bloom or early petal fall. Repeat as necessary, usually 10 to 14 days or after a period of wet weather.
Apples, Pears	Powdery Mildew Scab Blister Mite Two-Spotted Mite* Red Spider Mite	10-20	Apply at prebloom and petal fall. Apply with cover sprays throughout the season. Do not apply to d'Anjou pears.
Apples, Pears (Dormant, Delayed Dormant, or Postharvest)	Pear Psylla Blister Mite Two-Spotted Mite* Red Spider Mite	10-20	Apply with a suitable spray oil postharvest and during the dormant periods of bud development. Do not apply to sensitive varieties of pears except at these stages.
Avocados	Brown Mite	10-20	Apply as needed.
Citrus	Broad Mite* Citrus Rust Mite* Flat Mite Silver Mite Bud Mite* Red Spider Mite Six-spotted Mite* Thrips* Yuma Spider Mite*	10-15	Apply as needed. Do not apply within 21 days of an oil spray.
Figs	Mites, including Fig Mite, Eriophyid Mites	5	Apply at a minimum of 100 gallons per acre. Begin applications in April, and continue on a 3-4 week schedule through June.
Grapes	Powdery Mildew Bud Mite Blister Mite Red Spider Mite Phomopsis	3-10	Apply throughout the season at 7 to 14-day intervals or as needed. Thorough coverage is required. Note: Use with caution on concord or labrusca type grapes as injury can occur after bloom.
Mangos	Powdery Mildew	10-30	Begin application before bloom. Repeat at bloom, after fruit set, and 3 weeks later or as necessary.
Melons	Powdery Mildew	5-10	Apply when disease first appears and repeat as needed. Sulfur can injure plants, especially when temperature reaches 95° F. Do not use on sulfur sensitive varieties.
Pecans NOT FOR USE IN CALIFORNIA	Powdery Mildew Sooty Mold Two-Spotted Mite Red Spider Mite Eriophyid Mites (including Pecan and Hickory)	5-10	Apply throughout the season as needed. Note: Some varieties of pecans are sensitive to sulfur sprays under certain conditions. Do not apply unless varieties are known to be tolerant of sulfur.
Pistachios	Mites	10-20	Begin applications in June-July. Make additional applications as necessary. When temperatures exceed 95° F, lower rates and more frequent applications are advised in order to avoid crop injury.
Pomegranates	Mites	3-10	Begin applications in May or June. Make additional applications on a 3-4 week schedule, or as necessary. Use higher rates if past mite damage has been high. If temperatures exceed 95° F, lower rates and more frequent applications are advised in order to avoid crop injury.
Stone Fruits: Peaches, Plums, Cherries, Nectarines, Prunes	Powdery Mildew Brown Rot Leaf Spot Silver Mite Flat Mite Red Spider Mite	10-20	Follow directions for almonds, above. For Brown Rot of fruit, apply when fruit starts to ripen. Do not apply to apricots.
Walnuts, Macadamias*	Pacific Mite Almond Mite Two-Spotted Mite* Red Spider Mite Broad Mite*	10-20	Apply throughout the season as needed. Note: Some varieties of walnuts are sensitive to sulfur sprays under certain conditions. Do not apply unless varieties are known to be tolerant of sulfur.

\*NOT FOR THIS USE IN CALIFORNIA

**FIELD CROPS**

CROP	PEST	RATE LBS/A	DIRECTIONS
Alfalfa NOT FOR USE IN CALIFORNIA	Atlantic Mite Red Spider Mite	8-10	Apply throughout the season as necessary.
Cereals: Corn, Wheat, Barley, Oats, Rye, Sorghum	Red Spider Mite Two-Spotted Mite* Pacific Mite Atlantic Mite	8-10	Apply when symptoms first appear and repeat applications as necessary.
Cotton	Atlantic Mite* Two-Spotted Mite* Red Spider Mite	5-10	Apply throughout the season as necessary. California Only: Apply a maximum of 5 lbs per acre as necessary.
Peanuts	Powdery Mildew Leaf Spot Two-Spotted Mite Red Spider Mite Rust*	5-8	Apply at early leaf stage and repeat applications as necessary.
Soybeans	Leaf Spot Powdery Mildew	10-15	Apply at early leaf stage and repeat at 14-day intervals or as needed.
Sugar Beets	Powdery Mildew Red Spider Mite	5-10	Apply as soon as symptoms appear and repeat every 2 to 3 weeks or as needed.

\*NOT FOR THIS USE IN CALIFORNIA

**SMALL FRUITS AND BERRIES**

CROP	PEST	RATE LBS/A	DIRECTIONS
Blackberries, Boysenberries, Dewberries, Loganberries, Blueberries, Gooseberries, Huckleberries, Currants	Powdery Mildew	6-15	Begin application before blossoms open and continue at 10-day intervals or as needed.
Raspberries	Powdery Mildew	6-15	Apply each week from first bloom to fruit set. Repeat as the weather requires.
Strawberries	Powdery Mildew Two-Spotted Mite* Red Spider Mite	5-10	Begin application at early leaf stage and repeat as needed. Do not use on sulfur-sensitive varieties.

\*NOT FOR THIS USE IN CALIFORNIA

**MISCELLANEOUS CROPS**

CROP	PEST	RATE LBS/A	DIRECTIONS
Spearmint, Peppermint NOT FOR USE IN CALIFORNIA	Powdery Mildew	4-6	Apply when mint is 5-6" tall or when disease appears. Repeat twice, at 30-day intervals. Do not apply within 30 days of harvest.
Hops NOT FOR USE IN CALIFORNIA	Red Spider Mite	2-6	Begin applications at early leaf stage, and repeat as needed.
Ornamentals, Roses	Powdery Mildew Leaf Spot Two-Spotted Mite*	3-10 by ground or 3-20 by air	Apply to ensure complete plant coverage. Begin when disease first appears and repeat at 5-10 day intervals.

\*NOT FOR THIS USE IN CALIFORNIA

**DIRECTIONS FOR USE THROUGH CHEMIGATION SYSTEMS**

**NOT FOR THIS USE IN CALIFORNIA**

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

Observe all applicable precautions and limitations on the Federal label. Label must be in the possession of the user at the time of pesticide application.

**GENERAL INSTRUCTIONS**

Apply this product only 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.

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

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

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

Do not connect chemigation system to any public water system. Public water system means a system for the provision 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.

MICROTHIOL SPECIAL may be applied in conjunction with chemically neutral liquid fertilizers. Application in conjunction with highly alkaline fertilizers, such as aqueous ammonia, may cause a degradation of the pesticide, resulting in reduced performance, and should be avoided.

**SYSTEM REQUIREMENTS**

Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

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 backflow.

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.

**APPLICATION INSTRUCTIONS**

Observe the requirements in the System Requirements section above.

Apply MICROTHIOL only through systems containing anti-siphon and check valves designed to prevent water source contamination or overflow of the mix tank and containing interlocking controls between the metering device and the water pump to insure simultaneous shutoff.

Maintain a gentle continuous agitation in mix tank during mixing and application to assure a uniform suspension.

## MICROTHIOL SPECIAL

4074  
1998 Product Label Manual

Greater accuracy in calibration and distribution will be achieved by injecting a larger volume of a more dilute suspension per unit time.

Application of more than recommended quantities of irrigation water per acre may result in decreased product performance.

Do not apply when wind speed favors drift, when system connections or fittings leak, when nozzles do not provide uniform distribution or when lines containing the product cannot be flushed and must be dismantled and drained. In a center pivot system, block the nozzle set nearest the well/pivot/injection unit to prevent spray being applied to this area.

Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water.

### SPRAY PREPARATION

Remove scale, pesticide residues, and other foreign matter from the chemical tank and entire injector system. Flush with clean water. Prepare a suspension of MICROTHIOL in a mix tank. Fill the tank with  $\frac{1}{2}$  or  $\frac{3}{4}$  the desired amount of water. Start mechanical or hydraulic agitation. Slowly add the required amount of MICROTHIOL and then the remaining volume of water.

### Sprinkler Irrigation—Notes

Observe all System Requirements and Application Instructions above.

Set sprinkler system to deliver 0.1 to 1.25 inches of water per acre. Volumes of water higher than this may reduce efficacy. Start sprinkler and then uniformly inject the suspension of MICROTHIOL into the irrigation water line so as to deliver the desired rate per acre. The suspension of MICROTHIOL should be injected with a positive displacement pump into the main line ahead of a right angle turn to insure adequate mixing. When treatment with MICROTHIOL has been completed, do not irrigate the treated area for 24 to 48 hours to prevent washing the chemical off the crop.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Where sprinkler distributed patterns do not overlap sufficiently, unacceptable pest control may result.

Check local restrictions and requirements regarding sprinkler irrigation applications, as they may vary from state to state.

### STORAGE AND DISPOSAL

**Storage Instructions:** Store in a closed package in a cool, dry place. Do not store near flammable materials. Do not store in a manner where cross-contamination with other pesticides, fertilizers, food or feed could occur. If spilled during storage or handling, sweep up spillage and dispose of in accordance with the Pesticide Disposal Instructions below.

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

**Container Disposal Instructions:** Completely empty bag by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment, then dispose of bag in a sanitary landfill, by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

### WARRANTY AND DISCLAIMER

Elf Atochem North America warrants that this material conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for Use, subject to the risks referred to therein. ELF ATOCHEM MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. IN NO CASE SHALL ELF ATOCHEM OR SELLER BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, BUSINESS REPUTATION, OR CUSTOMERS; LABOR COST; OR OTHER EXPENSES INCURRED IN PLANTING OR HARVESTING.

Elf Atochem and seller offer this product and the buyer and user accept it subject to the foregoing conditions of sale and warranty which may be varied only by agreement in writing signed by a duly authorized representative of Elf Atochem.

Made in France