

AGROTEK™ VAPORIZED SULPHUR

For the control of powdery mildew in greenhouse vegetables, greenhouse ornamentals and *Cannabis* (marihuana) that is produced commercially indoors.

Fungicide
Powder

COMMERCIAL

GUARANTEE: Sulphur 99.9%

REGISTRATION NO. 30345 PEST CONTROL PRODUCTS ACT

WARNING – EYE AND SKIN IRRITANT

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING

NET CONTENTS 50 g / 25 kg

Greenstar Plant Products Inc.
9430 198th Street
Langley BC Canada V1M 3C8

Telephone: 604-882-7699
www.getgreenstar.com

Vaporized sulphur is used for the prevention and control of powdery mildew in a variety of greenhouse vegetables and ornamentals, including: tomato, pepper, eggplant, strawberry, rose, gerbera, Kalanchoe, begonia, hydrangea, potted flowers, bedding plants, snapdragon, phlox, African violet, chrysanthemum. Vaporized sulphur is also used to prevent and control powdery mildew on cannabis (marihuana) produced in indoor commercial facilities.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN

Wear goggles or a face shield, a NIOSH-approved respirator, chemical-resistant gloves, a hat, a long-sleeved shirt, long pants and rubber boots when filling, cleaning, and repairing sulphur vaporizers.

Do not enter or allow workers to enter into the greenhouse or indoor commercial facility during the vaporization of sulphur or during the 2 hour post-vaporization re-entry interval unless wearing a self-contained breathing apparatus, goggles or face shield, chemical resistant gloves, a hat, a long-sleeved shirt, long pants, and rubber boots. During the 2 hour re-entry interval, the greenhouse or indoor commercial facility should be vented with a minimum of 4 air changes of the greenhouse or indoor commercial facility air per hour.

Sulphur vaporizers should only be used at times when the greenhouse or indoor commercial facility is closed to staff, public and/or customers. Vaporizers should only be used when a greenhouse or indoor commercial facility can be ventilated without exposing bystanders or occupants of adjacent structures to vaporized sulphur. Vaporizers are not to be used if the greenhouse or indoor commercial facility shares a common wall, floor or ceiling with a building inhabited by livestock or humans.

Do not suspend device above water or drainage areas. As device will get very hot, do not touch until cooled down. Do not enclose the vaporizer during operation or block any of the openings as this may cause a fire.

Do not overfill the cup beyond 2 cm depth as this may cause the molten sulphur to boil over onto the hot element and cause a fire or gases that are toxic to plants and humans.

Do not apply if temperature is above 24°C and high humidity prevails.

Do not inhale dust or vaporized product. Causes eye irritation and may irritate the skin. Do not get in eyes and avoid contact with skin and clothing. After handling, wash thoroughly with soap and water before eating or smoking. Avoid contamination of feed or food.

It is highly recommended that regular inspection of vaporizer be conducted to ensure equipment is in good working order. If carbon dioxide (CO₂) enrichment is used, it is recommended that the grower pause CO₂ release while sulphur vaporization is occurring. Only apply when crop is dry.

Bystander Protection and Notification

Do not use in a structure that has a common floor, wall or ceiling with a human or livestock dwelling. Sulphur vaporizers can only be used in greenhouses or indoor commercial facilities that can be fully ventilated without causing harm to bystanders or the occupant(s) of adjacent structures Treatment should be carried out at times when the greenhouse or indoor commercial facility is closed to staff, public and/or customers.

FIRST AID:

If swallowed: Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

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 centre or doctor for further treatment advice.

If in eyes: Hold eye open and rinse slowly and gently with water for 15–20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION: Treat symptomatically.

DISPOSAL: For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

STORAGE: To prevent contamination store this product away from food or feed.

NOTICE TO USER

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

AGROTEK™ VAPORIZED SULPHUR

For the control of powdery mildew in greenhouse vegetables, greenhouse ornamentals and *Cannabis* (marihuana) that is produced commercially indoors.

Fungicide
Powder

COMMERCIAL

GUARANTEE: Sulphur 99.9%

REGISTRATION NO. 30345 PEST CONTROL PRODUCTS ACT

WARNING – EYE AND SKIN IRRITANT

READ THE LABEL AND BOOKLET BEFORE USING

NET CONTENTS 50 g / 25 kg

Greenstar Plant Products Inc.
9430 198th Street
Langley BC Canada V1M 3C8

Telephone: 604-882-7699
www.getgreenstar.com

Vaporized sulphur is used for the prevention and control of powdery mildew in a variety of greenhouse vegetables and ornamentals, including: tomato, pepper, eggplant, strawberry, rose, gerbera, Kalanchoe, begonia, hydrangea, potted flowers, bedding plants, snapdragon, phlox, African violet, chrysanthemum. Vaporized sulphur is also used to prevent and control powdery mildew on cannabis (marihuana) produced in indoor commercial facilities.

DIRECTIONS FOR USE

General Instructions

Agrotek™ Vaporized Sulphur is to be used with a sulphur vaporizer. Treatment should be done at night when no one is in the greenhouse or indoor commercial facility. Close all greenhouse or indoor commercial facility doors and vents.

Ensure the vaporizer is cool before filling or handling. Detach the aluminum cup from the device and fill with a **MAXIMUM** of 2 cm (0.7 inches) of sulphur powder. This will be approximately 100 ml or 200 g (5 ml (1 tsp) of sulphur powder is approximated 10 g) Replace the cup, making sure that the rolled collar of the aluminum cup rests snugly over the inner metal ring (this prevents accidental contact of the molten sulphur with the heating element).

Hang the vaporizer units vertically from any permanent greenhouse or indoor commercial facility structure in a free space, where there is little likelihood of human contact. Make sure no strong winds or other air movement can catch the vaporizer and tip hot molten sulfur over the edge. Ensure the electrical cord is suspended freely and away from traffic areas. Equally space units for uniform distribution. Spacing will be dependent on crop requirements (see below specific crop instructions). For best results keep the vaporizers at least 0.5 m / 1.5 ft above the crop canopy and at least 1 metre below screen cloth.

To avoid human contact with the vapour, use a timer or make the vaporizer remotely switchable. Do not enter the greenhouse or indoor commercial facility when the vaporizer is switched on. All entrances to the greenhouse(s) or indoor commercial facilities must remain locked during treatment with warning signs placed on or adjacent to all doors of each greenhouse or indoor commercial facility being treated. Do not enter or allow workers to enter into treated areas until greenhouse or indoor commercial facility has been thoroughly ventilated unless worker is wearing full protective clothing and self-contained complete breathing apparatus. After the vaporization of sulphur, vent the greenhouse or indoor commercial facility for a minimum of 2 hours before re-entry. During the venting period a minimum of 4 air changes of the greenhouse or indoor commercial facility air per hour should occur.

After use, there will be remaining sulphur in the cup. This can be reused the next time the vaporizer is used. 200 g of sulphur will last approximately 500 – 650 hours, however, we recommend that you empty the old sulphur from the aluminum cup every 150 hours to prevent accumulation of sulphur impurities left behind after vaporization and to clean any debris that may have collected in the cup (insects, plant material etc).

Specific Instructions

Vaporized sulphur works by preventing the germination of powdery mildew spores. For this reason, it is critical to start using the vaporizers before plants show any signs of powdery mildew infection. Use sulphur vaporizers for 1-8 hours per night, 2-7 days / wk. Frequency and duration of vaporization is dependant on the following variables:

- Susceptibility of the crop to powdery mildew
 - Crops that are highly susceptible to powdery mildew will require more vaporizers per m², longer treatment times per session, and earlier, more frequent treatment. See below example rates.
- Ambient greenhouse or indoor commercial facility temperature
 - Ambient greenhouse or indoor commercial facility temperature will influence the temperature and hence the heating capacity of the vaporizer. The maximum vaporization temperature of 190°C for this device will take longer to reach in a cooler greenhouse or indoor commercial facility therefore less sulphur will be vaporized per hour.
- Disease pressure
 - Vaporization needs to be more frequent and for a longer duration when disease pressure is the greatest.
- Greenhouse or indoor commercial facility ventilation
 - When greenhouse or indoor commercial facility vents are open, vaporized sulphur will escape. This will require more hours of vaporization per week to compensate
- Whether treatment is used as a preventative measure or to treat an existing mildew infection
 - Treatments need to be more frequent and / or for a longer duration when treating an existing infection
- Use of IPM
 - Certain species of beneficial insects are sensitive to sulphur – see below IPM section

Application Rate Table

Crop	Disease	Directions for Use	Application Rate*
Greenhouse Vegetables: Tomato	Powdery mildew (<i>Oidium lycopersicum</i>)	Use one (1) vaporizer per 1,000 m ² in the greenhouse. Run the vaporizer for 1 - 8 hours per night and repeat 2 - 7 times per week depending on the conditions listed under Specific Instructions.	0.4 - 3.2 g sulphur per 1,000 m ² per application.
Greenhouse Vegetables: Pepper and eggplant	Powdery mildew (<i>Leveillula taurica</i>)		
Small Fruits: Strawberry	Powdery mildew (<i>Sphaerotheca macularis</i>)		
Greenhouse Ornamentals: Rose	Powdery mildew (<i>Sphaerotheca pannosa</i>)	Use one (1) vaporizer per 100 m ² in the greenhouse. Run the vaporizer for 1 - 8 hours per night and repeat 2 - 7 times per week depending on the conditions listed under Specific Instructions.	4 - 32 g sulphur per 1,000 m ² per application.
Greenhouse Ornamentals: African violet, begonia, Chrysanthemum, dahlia, gerbera, hydrangea, kalanchoe, phlox and snapdragon	Powdery mildew (<i>Erysiphe cichoracearum</i> ; <i>E. polygoni</i>)	Use one (1) vaporizer per 250 - 1,000 m ² in the greenhouse. Run the vaporizer for 1 - 8 hours per night and repeat 2 - 7 times per week depending on the conditions listed under Specific Instructions.	0.4 - 12.8 g sulphur per 1,000 m ² per application.
Cannabis (marihuana) that is produced commercially indoors**	Powdery mildew (<i>Sphaerotheca macularis</i>)	Use one (1) vaporizer per 250 - 1,000 m ² in the indoor growing area. Run the vaporizer for 1 - 8 hours per night and repeat 2 - 7 times per week depending on the conditions listed under Specific Instructions.	0.4 - 3.2 g sulphur per 1,000 m ² per application.

* Application rate is calculated based on a maximum vaporization value of 0.4 g sulphur/hour per vaporizer unit.

**For non-greenhouse facilities, follow the applicable use directions as recommended under both the “General Instructions” and “Specific Instructions” sections of this label.

Notes: 1) The use of sulphur on cucurbit (cucumber, squash, pumpkin melon etc), spinach, or Boston ferns is not recommended due to phytotoxicity. 2) It is not possible to test all cultivars of ornamentals. If the response of a variety is not known, Agrotek™

Vaporized Sulphur should be tested in a small greenhouse compartment before using for commercial scale production.

IPM

Beneficial insects and mites may be sensitive to sulphur. Greenhouses can use sulphur vaporizers in conjunction with IPM if they modify vaporization schedules during the introduction of beneficials. Establish good mildew control before the introduction of beneficials and then either stop vaporization for 2-3 weeks following introduction or reduce vaporization to the minimum rate to allow population establishment. Consult your crop specialist or Greenstar Plant Products Inc. when assessing the compatibility of vaporized sulphur with existing greenhouse IPM programs.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN

Wear goggles or a face shield, a NIOSH-approved respirator, chemical-resistant gloves, a hat, a long-sleeved shirt, long pants and rubber boots when filling, cleaning, and repairing sulphur vaporizers.

Do not enter or allow workers to enter into the greenhouse or indoor commercial facility during the vaporization of sulphur or during the 2 hour post-vaporization re-entry interval unless wearing a self-contained breathing apparatus, goggles or face shield, chemical resistant gloves, a hat, a long-sleeved shirt, long pants, and rubber boots. During the 2 hour re-entry interval, the greenhouse or indoor commercial facility should be vented with a minimum of 4 air changes of the greenhouse or indoor commercial facility air per hour.

Sulphur vaporizers should only be used at times when the greenhouse or indoor commercial facility is closed to staff, public and/or customers. Vaporizers should only be used when a greenhouse or indoor commercial facility can be ventilated without exposing bystanders or occupants of adjacent structures to vaporized sulphur. Vaporizers are not to be used if the greenhouse or indoor commercial facility shares a common wall, floor or ceiling with a building inhabited by livestock or humans.

Do not suspend device above water or drainage areas. As device will get very hot, do not touch until cooled down. Do not enclose the vaporizer during operation or block any of the openings as this may cause a fire.

Do not overfill the cup beyond 2 cm depth as this may cause the molten sulphur to boil over onto the hot element and cause a fire or gases that are toxic to plants and humans.

Do not apply if temperature is above 24°C and high humidity prevails.

Do not inhale dust or vaporized product. Causes eye irritation and may irritate the skin. Do not get in eyes and avoid contact with skin and clothing. After handling, wash thoroughly with soap and water before eating or smoking. Avoid contamination of feed or food.

It is highly recommended that regular inspection of vaporizer be conducted to ensure equipment is in good working order. If carbon dioxide (CO₂) enrichment is used, it is recommended that the grower pause CO₂ release while sulphur vaporization is occurring. Only apply when crop is dry.

Bystander Protection and Notification

Do not use in a structure that has a common floor, wall or ceiling with a human or livestock dwelling. Sulphur vaporizers can only be used in greenhouses or indoor commercial facilities that can be fully ventilated without causing harm to bystanders or the occupant(s) of adjacent structures Treatment should be carried out at times when the greenhouse or indoor commercial facility is closed to staff, public and/or customers.

FIRST AID:

If swallowed: Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

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 centre or doctor for further treatment advice.

If in eyes: Hold eye open and rinse slowly and gently with water for 15–20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION: Treat symptomatically.

DISPOSAL: For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

STORAGE: To prevent contamination store this product away from food or feed.

RESISTANCE MANAGEMENT

AGROTEK™ VAPORIZED SULPHUR fungicide contains a Group M fungicide. Products in the same group have similar or identical modes of action. Over-use of products in one class of compounds will lead to resistance problems. Discontinue use of a product if resistance is suspected and consult your crop advisor.

Integrate the use of this product with the following non-chemical control methods:

- Restrict visitor access to the greenhouse or indoor commercial facility
- Follow strict greenhouse or indoor commercial facility hygiene throughout the growing season
- Conduct a thorough clean up as frequently as possible and dispose of all crop debris off-site or by burning or burying in a landfill.
- Control outdoor weeds surrounding the greenhouse or indoor commercial facility
- Improve greenhouse or indoor commercial facility climate to reduce relative humidity and increase air circulation

NOTICE TO USER

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.