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SENATOR® 70WP

SYSTEMIC FUNGICIDE

AGRICULTURAL

WETTABLE POWDER

ACTIVE INGREDIENT:

thiophanate-methyl	70%
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READ THE LABEL AND ATTACHED BOOKLET BEFORE USING

REGISTRATION NO.: 25343
PEST CONTROL PRODUCTS ACT

GROUP

1

FUNGICIDE

Registrant:
Nippon Soda Co., Ltd
JP Tower 10th Floor,
7-2 Marunouchi 2-chome, Chiyoda-ku
Tokyo, Japan 100-7010
USA Contact Number: (212) 490-0350
Canadian Representative:
Nailor Regulatory Consulting Inc.
935 Rosinke Drive, Kincardine, Ontario
N2Z 2X3
519-829-5422

Net Contents: 2 Kg

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NOTICE TO USER:

This pest control product is to be used only in accordance with the directions on this 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.

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:

No specific antidote is available. Treat symptomatically.

PRECAUTIONS:

KEEP OUT OF REACH OF CHILDREN. May be harmful if swallowed or inhaled. Avoid contact with eyes, skin or clothing. Avoid breathing of dust or spray mist. Wash thoroughly with soap and water after handling. Wash contaminated clothes before re-use.

Wear coveralls over a long-sleeved shirt, long pants, chemical-resistant gloves, shoes and socks during mixing, loading, application, clean-up and repair. In addition, wear chemical-resistant headgear during open cab airblast application.

Chemical-resistant headgear includes Sou'Wester hat, chemical-resistant rain hat or large brimmed waterproof hat and hood with sufficient neck protection. Gloves are not required during application within a closed cab.

For mushroom spawn treatment or mushroom casing drench, also wear a respirator with a NIOSH-approved organic-vapour-removing cartridge with a prefilter approved for pesticides, or a NIOSH-approved canister approved for pesticides during mixing, loading and application activities.

DO NOT apply in greenhouses, unless otherwise specified in the crop-specific use directions.

STORAGE:

Store this product away from food or feed.

DISPOSAL:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instructions for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.
5. For information on the 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.

***IN CASE OF EMERGENCY INVOLVING A POISONING OR MAJOR SPILL, CALL
1-866-336-2983***

® SENATOR is a registered trademark of Nippon Soda Co., Ltd.

{Booklet}

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GENERAL INFORMATION:

SENATOR® 70WP is a systemic fungicide for control of certain fungus diseases. It is effective against certain diseases of apples, pears, lowbush blueberries, peaches, nectarines, plums, prunes, cherries, strawberries, raspberries, ornamentals, greenhouse tobacco seedlings and white button mushrooms.

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PRECAUTIONS:

KEEP OUT OF REACH OF CHILDREN. May be harmful if swallowed or inhaled. Avoid contact with eyes, skin or clothing. Avoid breathing of dust or spray mist. Wash thoroughly with soap and water after handling. Wash contaminated clothes before re-use. Do not contaminate food or feed.

Wear coveralls over a long-sleeved shirt, long pants, chemical-resistant gloves, shoes and socks during mixing, loading, application, clean-up and repair. In addition, wear chemical-resistant headgear during open cab airblast application. Chemical-resistant headgear includes Sou'Wester hat, chemical-resistant rain hat or large brimmed waterproof hat and hood with sufficient neck protection. Gloves are not required during application within a closed cab.

For mushroom spawn treatment or mushroom casing drench, also wear a respirator with a NIOSH-approved organic-vapour-removing cartridge with a prefilter approved for pesticides, or a NIOSH-approved canister approved for pesticides during mixing, loading and application activities.

DO NOT apply in greenhouses, unless otherwise specified in the crop-specific use directions.

DO NOT enter or allow worker entry into treated areas to perform post-application activities during the intervals specified in the following table.

Crop	Post-Application Activity	REI and/or PHI
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Apples, pears	Harvesting (hand, mechanical)	7 days
	All other activities	12 hours
Lowbush blueberry	Harvesting (hand, mechanical)	60 days
	Hand set/ hand line irrigation related activities involving foliar contact	1 day
	All other activities	12 hours
Cherry, nectarine, peach, plum, prune	Hand thinning fruit	4 days
	Harvesting (hand, mechanical)	1 day
	All other activities	12 hours
Raspberry	Harvesting (hand, mechanical), tying/training (full foliage), hand set/ hand line irrigation related activities involving foliar contact	1 day
	All other activities	12 hours
Strawberry	Harvesting (hand, mechanical)	1 day
	All other activities	12 hours
White button mushrooms (casing)	Harvesting (hand, mechanical)	17 days
White button mushrooms (spawn)	Harvesting (hand, mechanical)	29 days
Outdoor roses and outdoor ornamentals grown for cut flower production	Hand harvesting, hand pruning, disbudding	2 days
	All other activities	12 hours
Outdoor roses and ornamentals <u>not</u> grown for cut flower production	All activities	12 hours
Greenhouse ornamentals (soil drench)	All activities	12 hours
Greenhouse ornamentals <u>not</u> grown for cut flower production (foliar application)	All activities	12 hours
Greenhouse tobacco seedlings (foliar, drench)	Harvesting (hand, mechanical)	65 days
	Activities with foliar contact	6 days
	Activities with no foliar contact	12 hours

REI = restricted entry interval; PHI = pre-harvest interval

ENVIRONMENTAL PRECAUTIONS

Toxic to aquatic organisms. Observe buffer zones specified under DIRECTIONS FOR USE.

Toxic to birds.

Toxic to small wild mammals.

Toxic to earthworms.

Toxic to bees. Minimize spray drift to reduce harmful effects on bees in habitats close to the application site. Avoid applications when bees are foraging in the treatment area in ground cover containing blooming weeds. To further minimize exposure to pollinators, refer to the complete guidance “Protecting Pollinators during Pesticide Spraying – Best Management Practices” on the Health Canada website (www.canada.ca/pollinators). Follow crop specific directions for application timing.

For cherry, peach, nectarine, plum, prune:

Avoid application during the crop blooming period. If applications must be made during the crop blooming period, restrict applications to the evening when most bees are not foraging.

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative filter strip between the treated area and the edge of the water body.

STORAGE:

Store this product away from food or feed.

DISPOSAL:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instructions for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
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RESISTANCE MANAGEMENT:

For resistance management, please note that SENATOR 70WP Fungicide contains a Group 1 fungicide. Any fungal population may contain individuals naturally resistant to SENATOR 70WP Fungicide and other Group 1 fungicides. A gradual or total loss of pest control may occur over time if these fungicides are used repeatedly in the same fields. Other resistance mechanisms that are not linked to site of action but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay fungicide resistance:

- Where possible, rotate the use of SENATOR 70WP Fungicide or other Group 1 fungicides with different groups that control the same pathogens.
 - Use tank mixtures with fungicides from a different group that is effective on the target pathogen when such use is permitted.
 - Fungicide use should be based on an Integrated Pest Management program that includes scouting, historical information related to pesticide use and crop rotation and considers host plant resistance, impact of environmental conditions on disease development, disease thresholds, as well as cultural, biological and other chemical control practices.
 - Where possible, make use of predictive disease models to effectively time fungicide applications.
 - Monitor treated fungal populations for resistance development. Notify Nippon Soda Co. Ltd if reduced sensitivity of the pathogen to SENATOR 70WP Fungicide is suspected. If disease continues to progress after treatment with this product, do not increase the use rate. Discontinue use of this product, and switch to another fungicide with a different target site of action, if available.
 - Contact your local extension specialist or certified crop advisor for any additional pesticide resistance-management and/or IPM recommendations for specific crops and pathogens.
- For further information and to report suspected resistance, contact Nisso America at (212) 490-0350.

Since the occurrence of resistance cannot be foreseen, Nippon Soda Co., Ltd. accepts no responsibility for any loss of, or damage to, crops resulting from the failure of SENATOR 70WP Fungicide to control the resistant fungi strains.

MIXING:

Add required amount of SENATOR 70WP Fungicide to partially filled tank with mechanical or hydraulic agitation and then complete filling with water. Agitate continuously to keep the material in suspension.

RATE:

Rates for orchard spraying are shown as kg of SENATOR 70WP Fungicide per 1000 litres water for dilute spraying based on a volume of approximately 3500 litres per hectare. For concentrate spraying apply the same quantity per hectare as would be applied by dilute spraying. Use the recommended rate and reduce spray intervals under conditions of severe disease pressure.

Compatibility:

SENATOR 70WP Fungicide is compatible with most pesticides; do not mix with lime or other alkaline materials. As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests. DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

DO NOT allow effluent or runoff from greenhouses or mushroom houses containing this product to enter lakes, streams, ponds or other waters.

To protect pollinators, follow the instructions regarding bees in the Environmental Precautions section.

Field sprayer application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE S572.1) medium classification. Boom height must be 60 cm or less above the crop or ground.

Airblast application: “DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT direct spray above plants to be treated. Turn off outward pointing nozzles at row ends and outer rows. DO NOT apply when wind speed is greater than 16 km/h at the application site as measured outside of the treatment area on the upwind side.

Spray Buffer zones:

A spray buffer zone is NOT required for:

- uses with hand-held application equipment permitted on this label

The spray buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands), sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats.

Method of application	Crop		Spray Buffer Zones (metres) Required for the Protection of:			
			Freshwater Habitat of Depths:		Estuarine/Marine Habitat of Depths:	
			Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m
Field sprayer	Lowbush blueberry, roses, ornamental plants, strawberry, raspberry		2	1	0	0
Airblast	Roses, ornamental plants	Early growth stage	20	15	0	0
		Late growth stage	15	5	0	0
	Lowbush blueberry, raspberry	Early growth stage	25	15	0	0
		Late growth stage	15	10	0	0
	Cherry, prune, peach, nectarine, plum	Early growth stage	30	20	0	0
		Late growth stage	20	10	0	0
	Apple, pear	Early growth stage	20	10	0	0
		Late growth stage	10	5	0	0

For tank mixes, consult the labels of the tank-mix partners and observe the largest (most restrictive) spray buffer zone of the products involved in the tank mixture and apply using the coarsest spray (ASAE) category indicated on the labels for those tank mix partners.

The spray buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Buffer Zone Calculator on the Pest Management Regulatory Agency web site.

APPLES AND PEARS:

Apple Scab (*Venturia inaequalis*), Powdery Mildew (*Podosphaera leucotricha*): Spray with ground application equipment using sufficient volume for thorough coverage. DO NOT APPLY BY AIR.

Tank Mix with Captan: Apply at the concentration of 175 grams SENATOR 70WP Fungicide plus 1 kg of Captan 50 WP (625 g Captan 80WP) per 1000 litres of water. The rate per hectare is 625 grams of SENATOR 70WP Fungicide + 3.25 kg of Captan 50W (or 2 kg of Captan 80WP) in a full-season spray program.

Do not use Captan with or shortly after oil sprays, or solvent formulations of parathion. Do not exceed a spray volume of 3500 L/ha (2.2 kg product per hectare). Do not exceed 2 applications per year. Observe a minimum re-application interval of 7 days.

LOWBUSH BLUEBERRIES:

Blossom and Twig Blight (*Phomopsis vaccinii*): Apply 1.1 kg of SENATOR 70WP Fungicide in 1000 litres of water per hectare when using ground application equipment. Commence applications at bud break. Make 2 applications at 10- to 14-day intervals. Exact interval used depends on weather conditions and disease development. Contact local extension officials. DO NOT APPLY BY AIR.

PEACHES, NECTARINES, PLUMS, PRUNES, CHERRIES:

Brown Rot (*Monolinia fructicola*): Apply 500 grams of SENATOR 70WP Fungicide per 1000 litres of water (1.75 kg per hectare), using ground application equipment, at very early stages of blossoming, and at full bloom to ensure adequate protection. In B.C. apply at pink and full bloom stage. Avoid application during the crop blooming period. If applications must be made during the crop blooming period, restrict applications to the evening when most bees are not foraging. A second application may be made if wet weather conditions prevail. Do not exceed a spray volume of 3500 L/ha (1.75 kg product per hectare). Do not exceed 2 applications per year. Observe a minimum re-application interval of 7 days. DO NOT APPLY BY AIR.

Experience has shown that alternating contact fungicides and SENATOR 70WP Fungicide for control of brown rot will provide best results with least expectancy of resistance developing to the fungicides.

RASPBERRIES:

Powdery Mildew (*Sphaerotheca macularis*), Fruit Rots (*Botrytis cinerea*): Apply 500 grams of SENATOR 70WP Fungicide per 1000 litres of water (1.1 kg per hectare), using ground application equipment, during flowering and repeat every 7 - 10 days as necessary. Do not exceed a spray volume of 2200 L/ha (1.1 kg product per hectare). Do not exceed 2 applications per year. Observe a minimum re-application interval of 7 days. DO NOT APPLY BY AIR.

STRAWBERRIES:

Fruit Rot (*Botrytis cinerea*), Leaf Spot (*Mycosphaerella fragariae*): Apply 500 grams of SENATOR 70WP Fungicide per 1000 litres of water (1.1 kg per hectare), using ground application equipment, commencing when buds are visible in the crown.. Do not exceed a spray volume of 2200 L/ha (1.1 kg product per hectare). A second application may be made if wet weather conditions prevail. Do not exceed 2 applications per year. Observe a minimum re-application interval of 7 days. DO NOT APPLY BY AIR.

OUTDOOR ROSES AND ORNAMENTAL PLANTS:

Black Spot of Roses (*Diplocarpon rosae*) and Powdery Mildew (*Podosphaera* spp.): Apply SENATOR 70WP Fungicide at 500-750 g product per 1000 litres of water using ground application equipment. Repeat at 10 - 14 days as required. Do not exceed 750 g product/ha (525 g a.i./ha) in a single application. Do not exceed 2 applications per year. Observe a minimum re-application interval of 7 days. DO NOT APPLY BY AIR.

GREENHOUSE ORNAMENTAL PLANTS:

DO NOT apply as a foliar spray to ornamentals grown for cut flowers. DO NOT allow pesticide solution to contact foliage of ornamentals grown for cut flowers.

Powdery Mildew (*Podosphaera* spp.), Botrytis blight (*Botrytis cinerea*) and Leaf Spots (*Alternaria* spp., *Cercospora* spp.): Apply SENATOR 70WP Fungicide at 650-750 g per 1000 L of water using ground application equipment. Do not exceed a spray volume of 1000 L/ha (750 g) in a single application. Water soil thoroughly with spray solution. Repeat after 15 days if required. Do not exceed 2 applications per year.

Stem, Crown and Root Rots (*Fusarium* spp. and *Rhizoctonia* spp.): Apply SENATOR 70WP Fungicide at 650-850 g per 1000 L of water as a drench or directed spray using ground application equipment to thoroughly soak the growing media through the root zone. A spray volume of 1000-3000 L/ha is recommended. Do not exceed 5100 g product/ha per year. Repeat after 15 days if required. Do not exceed 2 applications per year. Note: Senator 70WP does not control *Pythium* or *Phytophthora*.

GREENHOUSE TOBACCO SEEDLINGS AND WHITE BUTTON MUSHROOMS:

NOTE TO USER: READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR THE INDICATED SPECIAL USE APPLICATIONS

The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than Nippon Soda Co., Ltd. under the User Requested Minor Use Label Expansion program. For these uses, Nippon Soda Co., Ltd. has not fully assessed performance (efficacy) and/or crop tolerance (phytotoxicity) under all environmental conditions or for all crop varieties when used in accordance with the label. The user should test the product on a small area first, under local conditions and using standard practices, to confirm the product is suitable for widespread application.

DIRECTION FOR USE: For Control of Damping-Off (*Rhizoctonia solani*) on Greenhouse Tobacco Seedlings

Apply 90 grams of SENATOR 70WP Fungicide in 300 L water to 100 m² of seedlings as a drench or directed spray, using ground application equipment, to thoroughly soak the growing media through the root zone. Apply preventatively, when the larger leaves of the seedlings are about 1.5 cm in diameter, or at the first sign of disease. Repeat if necessary 10 - 14 days later. Do not make more than 2 applications per crop.

DIRECTION FOR USE: For Control of *Trichoderma* Green Mould (*Trichoderma* spp.) on White Button Mushrooms

A maximum of one application of Senator 70WP Fungicide per crop cycle may be made either as a single application to the spawn or as a drench application to the casing. Do not exceed 8 applications per year. Please note that the drench application to the casing will not control the aggressive species of *Trichoderma* (*Trichoderma aggressivum* f. *aggressivum*).

Resistance Management

Do not make sequential applications of Group 1 (Benzimidazoles) fungicides. If an application of a Group 1 fungicide has been made to the spawn or casings, use a registered fungicide with a different mode of action before applying another Group 1 fungicide.

Specific Limitations for Mechanical Spreading of Treated Spawn and Drench Application to the Casings:

- Do not hand spread Senator 70WP Fungicide treated spawn
- When mechanically spreading Senator 70WP Fungicide treated spawn, any one person can treat and handle only enough spawn to cover a maximum of 600 m² of bed surface per day (750 g of Senator 70WP Fungicide)
- Any one person can only apply a casing drench containing Senator 70WP Fungicide to a maximum of 500 m² of bed surface per day (304 g Senator 70WP Fungicide) when using hand held equipment.

For Control of *Trichoderma* Green Mould on White Button Mushrooms (CASING)

Mix 61 g of Senator 70WP Fungicide with approximately 75 L of water and apply as a drench to 100 m² of bed surface. Make application shortly after casing. Do not make more than one application to the mushroom bed as a drench. Do not apply within 17 days of first harvest. Do not apply after harvesting has started.

For Control of *Trichoderma* Green Mould on White Button Mushroom (SPAWN)

Mix 1.25 g of Senator 70WP Fungicide with 50-62 g of gypsum, limestone or chalk per 1 kg of spawn. Mechanically apply approximately 100 kg of treated spawn to 100 m² of bed surface at the time of spawning.

Exposure Mitigation Measures:

1. Cover cement mixer with a plastic bag or other type of cover and secure with cord during mixing in order to minimize dust exposure
2. After coating the spawn grain, spawn should be mechanically transferred into a plastic tote (with a lid) to minimize dust exposure.
3. Wash hands and other exposed skin after contact, and before eating, drinking or smoking.
4. Wash clothes before re-wearing. Wash separately from other clothing.
5. **Hand Spreading of Treated Spawn is not permitted.**