

SunSpray®

ULTRA-FINE®

SPRAY OIL

A Superior Horticultural  
Spray Oil for Insect and  
Mite Pest Management.



Active Ingredient: Mineral Oil* .....	98.8%
Other Ingredients: .....	1.2%
<b>Total .....</b>	<b>100.0%</b>
*Unsulfonated Residue of Mineral Oil .....	92.0% Min
*50% Distillation Point of Mineral Oil .....	414.0 F
*Flash Point .....	345.0 F
Weight per Gallon .....	7.1 lbs.

\*Contains petroleum distillates

## KEEP OUT OF REACH OF CHILDREN CAUTION

### FIRST AID

#### If on skin or clothing:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

#### If swallowed:

- Immediately call a poison control center or doctor.
- **DO NOT INDUCE VOMITING** unless told to do so by a poison control center or doctor.
- Do not give **any** liquid to the person.
- Do not give anything by mouth to an unconscious person.

#### 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 center 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 mouth-to-mouth, if possible.
- Call a poison control center or doctor for further treatment advice.

#### HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or when going for treatment. You may also call 1-918-594-6000 for emergency medical treatment information 24/7 or a poison control center at 1-800-222-1222.

#### NOTE TO PHYSICIAN

Contains petroleum distillates. Vomiting may cause aspiration pneumonia. Aspiration may occur after swallowing or vomiting and results in serious, and sometimes delayed, lung injury.

EPA Est. No. 86330-OK-1     EPA Est. No. 44956-AL-001     EPA Est. No. 49568-GA-001     EPA Est. No. 49568-NJ-001

PRODUCED FOR

**HOLLYFRONTIER**  
SPECIALTY PRODUCTS

HollyFrontier Refining & Marketing LLC  
401 Plymouth Road • Suite 350  
Plymouth Meeting, PA 19462  
800-456-4786

See Additional Precautionary Statements  
Inside Booklet.  
See Directions For Use Inside Booklet.  
EPA Reg. No. 86330-11

REV081622

## PRECAUTIONARY STATEMENTS

**Hazards To Humans & Domestic Animals. CAUTION:** Harmful if absorbed through skin, swallowed or inhaled. Avoid contact with eyes, skin, or clothing. Avoid breathing spray mist. Remove and wash contaminated clothing before use. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

**Mixers, loaders, applicators, flaggers, and other handlers must wear:**

- Long-sleeve shirt and long pants,
- Shoes plus socks,
- Chemical-resistant gloves made of Barrier Laminate, Nitrile Rubber  $\geq$  14 mils, Neoprene Rubber  $\geq$  14 mils or Viton  $\geq$  14 mils.

## See Engineering Controls for Additional requirements.

**User Safety Requirements:** Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

### USER SAFETY RECOMMENDATIONS

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. 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.

## ENGINEERING CONTROLS:

Pilots must use an enclosed cockpit that meets the requirements listed in the WPS for agricultural pesticides [40 CFR 170.240(d) (6)]. When handlers use closed systems, enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

## ENVIRONMENTAL HAZARDS

This product is toxic to aquatic invertebrates. 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 wash water or rinsate. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Avoid drift or run off into storm drains, drainage ditches or surface waters.

Applying this product in calm weather when rain is not predicted for the next 24 hours will help to maximize the chances that wind, or rain will not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help to avoid run off to water bodies or drainage systems.

## 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 through any type of irrigation system. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Do not apply this product in a way that will contact adults, children or pets, 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 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. 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, shoes plus socks, and chemical-resistant gloves made of any water-proof material, such as Barrier Laminate, Nitrile Rubber  $\geq$  14 mils, Neoprene Rubber  $\geq$  14 mils or Viton  $\geq$  14 mils.

### 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. Do not enter or allow others to enter until sprays have dried.

## **USE SITE RESTRICTIONS**

This product may be applied on the plants listed on this label which are growing in or around habitable buildings, along city streets and other rights-of-ways, as well as in agricultural settings. Refer to the appropriate table for the application rate specified to control a specific pest on a specific plant.

## **PESTS CONTROLLED**

This product may be used to control adelgids, aphids, lace bugs, leafhoppers, leafminers (larvae), mealybugs, mites, plant bugs, psyllids, sawfly larvae, scales, thrips, whitefly and eggs of aphids, mites and hairless caterpillars on vegetables, fruits, tree nuts, certain field crops, shrubs, trees, greenhouse plants, ornamental foliage plants and flowers. This product may be applied up to harvest.

## **MIXING DIRECTIONS**

1. Add sufficient water to the mixing tank to allow proper agitation by pump or paddles.
2. Add other desired pesticide. If a wettable powder formulation is to be added, mix the water and powder thoroughly so that the powder is totally suspended in the water before the oil is added. If other pesticide to be added is an emulsifiable formulation, do so after the oil and water has been thoroughly mixed.
3. Add oil under agitation when tank is 3/4 full. Top off with water to form milky white solution, indicating good emulsification.
4. Maintain agitation until solution is used.
5. In small equipment lacking agitators, stir or shake diluted spray frequently during application.
6. Read and follow all directions and restrictions on the labels of the proposed tank-mix products.
7. Flush fluid in sprayer hose lines back into tank reservoir if fluid is allowed to stand for more than 20 minutes.
8. DO NOT USE THIS MATERIAL IF IT DOES NOT EMULSIFY.

## **APPLICATION INSTRUCTIONS**

The target pest must be completely covered with spray. Oil residue on the plant surface often acts as a feeding and oviposition deterrent. However, the primary target is the pest itself as oil is a contact pesticide.

**DILUTE APPLICATIONS:** Use the minimum number of gallons needed to completely cover all the tree surfaces, but not to the point of runoff. For most tree fruits this can be as much as 300-800 gallons of spray solution per acre or as low as 100 gallons of spray solution per acre for smaller trees. For mature citrus trees this can be as much as 800-2000 gallons of spray solution per acre. Dilute applications typically provide better coverage than concentrate applications.

**CONCENTRATE APPLICATIONS:** (usually from 45 to 125 gallons of spray solution per acre) may reduce coverage and effectiveness. Concentrate application includes the use of low volume (from 10

to 100 gallons of spray solution per acre) sprays. A concentrate application can provide satisfactory results as long as the spray unit is properly engineered, calibrated and operated.

Speed of travel for ground application is extremely important. Tractor speed from 1 M.P.H. to 4 M.P.H. is recommended depending on crop, crop size and target pest. Low volume applications of SunSpray Ultra-Fine Spray Oil will require approximately the same amount of oil per acre as dilute sprays but will be applied with much less water. Spray oil calculations are based so that runoff of the oil phase of the mixture is minimized.

## **SPRAY DRIFT ADVISORIES**

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

## **IMPORTANCE OF DROPLET SIZE**

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

## **CONTROLLING DROPLET SIZE - GROUND BOOM**

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

## **BOOM HEIGHT - Ground Boom**

- For ground equipment, the boom should remain level with the crop and have minimal bounce.
  - For ground-based equipment - Apply using a nozzle height of no more than 4 feet above the ground or crop canopy. Do not apply at wind speeds greater than 15 mph at the application site.
- Apply as a medium or coarser spray (ASABE standard 572), and the minimum volume mean diameter (VMD) for spinning atomizer nozzles.

## **SHIELDED SPRAYERS**

- Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers.
- Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

## **CONTROLLING DROPLET SIZE - Aircraft**

- Adjust Nozzles - Follow nozzle manufacturer recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

## RELEASE HEIGHT - Aircraft

- Higher release heights increase the potential for spray drift. When applying aerially to crops, do not release spray at a height greater than 10 ft above the crop canopy, unless a greater application height is necessary for pilot safety.
- The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.
- When applications are made with a cross-wind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind. Leave at least one swath unsprayed at the downwind edge of the treated field.

## TEMPERATURE AND HUMIDITY

- When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

## TEMPERATURE INVERSIONS

- Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upwards and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

## WIND

- Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.
- Do not apply at wind speeds greater than 15 mph at the application site.
- If applying at wind speeds less than 3 mph, the applicator must determine if a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

## BOOM-LESS GROUND APPLICATION

- Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

## HANDHELD TECHNOLOGY APPLICATIONS

- Take precautions to minimize spray drift.

**AIRBLAST EQUIPMENT APPLICATION:** For airblast applications, turn off outward pointing nozzles at row ends and when spraying outer row. To minimize spray loss over the top in orchard applications, spray must be directed into the canopy.

**AERIAL APPLICATIONS:** Use only as an emergency application when soil conditions do not permit regular ground application on

deciduous fruit and nut trees. Aerial applications are permitted for fruit and nut trees and potatoes only. Apply quantity of product shown for each listed crop for control of listed insects in sufficient water to make a minimum of 20 gals, dilute spray solution per acre, except where label indicates otherwise.

## TIMING THE TREATMENT

Applicator must determine the precise timing to fit local growth and climatic conditions. DO NOT EXCEED MAXIMUM RATES OR APPLY MORE OFTEN THAN INDICATED IN THIS BOOKLET. THIS PRODUCT MAYBE USED UP TO DAY OF HARVEST.

**TANK MIXES:** SunSpray Ultra-Fine Spray Oil may be mixed with other pesticides to improve the level of kill. Read and follow all directions and restrictions on the labels of the proposed tank-mix products. The combination of SunSpray Ultra-Fine Spray Oil with more than one additional pesticide is not recommended. Use caution and read all labels thoroughly when using any insecticides or miticides in combination with SunSpray Ultra-Fine Spray Oil. Always conduct a test spray for plant sensitivity before making a full-scale application. **It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.**

## USE PRECAUTIONS

Keep oil container tightly closed in storage to prevent entry of water. All horticultural oils interfere with or slow plant transpiration and respiration during the period of evaporation. Do not spray plants under stress (i.e. drought, disease). Do not apply during periods of prolonged high temperature combined with high relative humidity. Do not spray immediately prior to, during or following unusually cold weather or freezing temperatures. Due to the reduced respiration rate of the insect at temperatures below 50°F, the effectiveness of SunSpray Ultra-Fine Spray Oil is reduced. Do not tank-mix with any herbicides. Do not tank-mix with any insecticide or miticide whose label indicates that it should not be used with oil. Do not use with Sevin 50W formulation (carbaryl) on deciduous fruit trees.

The following list of pesticides represents some of the compounds that should not be used with SunSpray Ultra-Fine Spray Oil, however this list is not exhaustive: captan (Captan), cyprax (Dodine), chlorothalnil (Bravo), dimethoate (cygon), folpet (Folpet), propargite (Omite), lime sulfur, wettable sulfur or any other product containing sulfur. For fungicides not included in this listing, consult the label of the specific fungicide formulation for compatibility information when used with oil. Consult your local extension agent for local recommendations relative to a specific fungicide/oil mix on a specific crop. Keep spray equipment used for these other products separate from the equipment used for SunSpray Ultra-Fine Spray Oil or ensure all equipment is free of these residues.

Do not use propargite (Omite) with or within 30 days before or after using SunSpray Ultra-Fine Spray Oil. Application safety during the bloom period should be determined for each individual species of

plant to be treated by conducting a small test. Protect painted surfaces, carpet and furnishings from overspray. This product may cause discoloration of concrete, brick or stone walkways.

**TABLE 1A**

Crop	Pest	Application Rate			Time of Application (Stage of Development)
		Dilute Spray: Gals of product in 100 gals water applied at 100-600 gals dilute spray solution per acre	Concentrate: Gals of product in 45 gals-125 gals of water per acre	Aerial: Gals of product in 20 gals of water minimum per acre	
Apples	Aphids (eggs) Apple Red Bug Mites (eggs) including European Red Mite Scales (Hard and Soft) Scurfy Scale Fruit Tree Leaf Roller (eggs)	2	6-8	6-8	Dormant through Tight-cluster.
	Mites Scales	1 1-2	4 4-6	4 4-6	Summer (Foliar or Cover) or Postharvest. Do not apply over fruit after waxy bloom forms.
Pears	European Red Mite (eggs)	1-2	4-6	4-6	Dormant or Delayed Dormant (up to and including petal fall).
	Pear Leaf Blister Mite (eggs)	2	4-6	4-6	
	Pear Psylla	2	4-6	4-6	
	Scales	2	4-6	4-6	
	Fruit Tree Leaf Roller (eggs)	2	4-6	4-6	
	Two-Spotted Spider Mite	1	4	4	Summer (Foliar or Cover) or Postharvest.
	Brown Mite	1	4	4	
Pear Rust Mite	1-2	4-6	4-6		
	Pear Leaf Blister Mite	1.5-2	4-6	4-6	
	Pear Psylla	1.5-2	4-6	4-6	
	Thrips	1.5-2	4-6	4-6	
Figs	Fig Scale	3			Dormant or Delayed Dormant.
	Mites Mealybugs Scales	2			Summer (Foliar or Cover).

**1 Gallon of Product/100 gals of water = 1 quart of product/25 gals of water = 32 Fluid ounces of product/25 gallons of water.  
1 Quart = 0.95 liters. 1 gallon = 3.785 liters.**

**TABLE 1B**

Crop	Pest	Application Rate			Time of Application (Stage of Development)
		Dilute Spray: Gals of product in 100 gals water applied at 100-500 gals dilute spray solution per acre	Concentrate: Gals of product in 45 gals-125 gals of water per acre	Aerial: Gals of product in 20 gals of water minimum per acre	
<b>Almonds Apricots Cherries</b>	Aphids (eggs) Fruit Tree Leaf Roller (eggs) Tent Caterpillars San Jose Scale	2 2 2 2	6-8 6-8 6-8 6-8	6-8 6-8 6-8 6-8	Dormant or Delayed Dormant. Dormant or Delayed Dormant. Dormant or Delayed Dormant. Dormant.
	Mites and Scales	1-1.5	4-6	4-6	Summer (Foliar or Cover) or Postharvest. Application should not be made over oil sensitive varieties. Do not apply to trees lacking adequate moisture.
<b>Peaches Nectarines</b>	Aphids (eggs) Fruit Tree Leaf Roller (eggs) Mite (eggs) Peach Twig Borer (hiber- naculae) Cottony Peach Scale San Jose Scale	1-2 1-2 1-2 1-2 2 2	4-8 4-8 4-8 4-8 6-8 6-8	4-8 4-8 4-8 4-8 4-8 4-8	Dormant or Delayed Dormant Dormant or Delayed Dormant Dormant or Delayed Dormant Dormant or Delayed Dormant Dormant Dormant
	Mites Scales	1-2	4-6	4-6	Summer (Foliar or Cover) or Postharvest.
<b>Plums Prunes</b>	Aphids (eggs) Scales Mites (eggs) Peach Twig Borer (hiber- naculae)	1.5-2	4-6	4-6	Dormant or Delayed Dormant to 1/2" green tip.
	Mites Scales	1-1.5	4-6	4-6	Summer (Foliar or Cover) or Postharvest. Do not apply over certain fresh market fruits after bloom starts to form as the oil spray will remove the waxy bloom. Application should not be made over oil sensitive varieties.
<b>Pecans</b>	Aphids (eggs) Scales Mites (eggs)	2	6-8	6-8	Dormant.
	Aphids Mites	1-1.5	4-6	4-6	Summer (Foliar or Cover) or Postharvest.

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**TABLE 1C: Walnuts**

Crop	Pest	Application Rate			Time of Application (Stage of Development)
		Dilute Spray: Gals of product in 100 gals water applied at 200-400 gals dilute spray solution per acre	Concentrate: Gals of product in 45 gals-125 gals of water per acre	Aerial: Gals of product in 20 gals of water minimum per acre	
Walnuts	Aphids (eggs) Scales Mites (eggs)	4 - 6	NR	NR	Delayed Dormant - Use only on trees that have not suffered from lack of moisture at any time during the growing season. Do not apply to orchards where soil moisture is low. Trees must have been fully dormant.
	Mites	4-6 gallons of oil in 100 gallons of water applied at 200 gallons of spray solution per acre.	NR	NR	Foliar - Late Spring to early summer when the leaves are fully expanded.

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**NR = Not Recommended**

**TABLE 2: Citrus**

Crop	Pest	Application Rate		Time of Application (Stage of Development)
		Dilute Spray: Gals of product in 100 gals water applied at 500-2000 gals dilute spray solution per acre	Concentrate: Gals of product in 45 gals-125 gals of water per acre	
<b>Lemons and Grapefruit*</b>	Mites Scales including California Red Scale	1.0 - 1.4 1.0 - 1.6	8 - 24	Spray during Fall, early Winter & Spring months when red scale are more easily controlled and trees generally less reactive to oil. For all citrus oil sprays ensure adequate soil moisture: leaves should not wilt before noon.
<b>Navel &amp; Valencia Oranges, Other Varieties Including Non Bearing*</b>	Mites including Rust Mite Spider Mite Scales including Black Scale California Red Scale Whitefly & Blackfly Sooty Mold	1.0 - 1.4 1.0 - 1.4 1.0 - 1.4 1.0 - 1.3 1.0 - 1.3 1.3 - 1.6 1.0 - 1.3 1.0 - 1.3	8 - 24	For low volume oil spray treatment during the Spring, application should be discontinued as soon as temperatures go above 90°F during the day or relative humidity is expected to go down to 20 percent or below. Oils should not be used in late Fall if there is any danger of damage from cold. The addition of a tank mix insecticide registered for use on these crops may improve performance against scales.

**RESTRICTIONS:** \*Citrus: The maximum application rate for citrus in Texas and Florida is 159 pounds active ingredient per acre (maximum 1500 gallons of spray mix per acre), and in California, 212 pounds of active ingredient per acre (maximum 2000 gals of spray mix per acre).

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**TABLE 3A: SHADE TREES, SHRUBS, ORNAMENTALS, FLOWER & FOLIAGE PLANTS**

Crop or Plant	Pest	Application Rate	Time of Application
<b>Shade Trees* and Shrubs including Conifers, Deciduous Broadleaf Evergreens &amp; Woody Ornamentals Ornamental Trees* and, Shrubs including: Conifers, Deciduous and Broadleaf Evergreens located along city streets, other rights-of-ways and in or around habitable buildings</b>	Aphids Adelgids Eriophid Mites Gall Mites Honey Locust Plant Bug	Dilute Spray: 2-3 gals of product per 100 gals of water applied at 100-500 gals spray solution per acre.	Winter Dormant Period.
	Lace Bug Leaf Beetle Larvae Leafminer Leafrollers Mealybugs	Dilute Spray: 1-2 gals of product per 100 gals of water applied at 100-500 gals spray solution per acre.	Summer (Foliar or Cover).
<b>Flowering and Foliage Plants including Roses and other Flowering Shrubs</b>	Psyllids (immature) Sawfly (Larvae) Scales (immature) Spider Mites	Dilute Spray: 2-3 gals of product per 100 gals of water applied at 100-250 gals spray solution per acre.	Winter Dormant Period.
	Thrips Webworms Whiteflies	Dilute Spray: 1-2 gals of product per 100 gals of water applied at 100-250 gals spray solution per acre.	Summer (Foliar or Cover).
<b>Foliage Ornamentals &amp; Bedding Plants</b>		Dilute Spray: 2-3 gals of product per 100 gals of water applied at 50-150 gals spray solution per acre.	Winter Dormant Period.
		Dilute Spray: 1-2 gals of product per 100 gals of water applied at 50-150 gals spray solution per acre.	Summer (Foliar or Cover).

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**TABLE 3B: CHRISTMAS TREES**

Crop or Plant	Pest	Application Rate	Time of Application
Christmas Trees*	Aphids Adelgids Scales (Soft & Hard) (Immature) Spider Mites	Dilute Spray: 2-3 gals of product per 100 gals of water applied at 100-250 gals spray solution per acre.	Winter
		Dilute Spray: 1-2 gals of product per 100 gals of water applied at 100-250 gals spray solution per acre.	Summer

**FOR TABLES 3A AND 3B**

\*Oil removes the glaucous (blue) bloom from such evergreens as Colorado Blue Spruce and Koster Spruce. Always use lower dosage or test spray oil sensitive plants such as Cryptomeria, Smoke Tree, Chamaecyparis, Juniper, Japanese Holly and Spruce. Tendency toward sensitivity: Red Cedar and Douglas Fir. Do not spray when buds have fully opened and shoot elongation is occurring. Do not spray Walnut foliage.

**RESTRICTIONS:** Make no more than 4 spray applications per year. Allow at least 2 weeks to pass between consecutive spray applications. SunSpray Ultra Fine Spray Oil may be used in rotation with other compatible insecticides or fungicides. Do not spray when there is obvious moisture deficit in leaves, or the plant is under stress. Early morning applications are recommended. For Fall dormant applications, use no more than 2 gallons oil per 100 gallons water, and limit use only to: American Red Oak, Japanese Black Pine, Dogwood, Weeping Cherry, Cornelian Cherry, Crabapple, Norway Maple, Purple Leaf Plum.

**Powdery Mildew Control on Ornamentals:**

Use 1-2 gallons SunSpray Ultra-Fine Spray Oil per 100 gallons water at 50 - 100 gals spray solution per acre from midsummer to early fall every 2-4 weeks to zinnia, lilac, azalea, monarda, phlox, helianthemum and aster. If application to other woody or herbaceous ornamental plants is desired, conduct a small scale test on specific plants that are to be treated to check for sensitivity to the oil treatment. SunSpray Ultra-Fine Spray Oil is not effective if the plant canopy is extremely dense because adequate coverage is difficult to attain. For greenhouse applications, use 1 gallon of product per 100 gallons of water at 50 -100 gals spray solution per acre except for greenhouse-grown roses for the cut flower market where the concentration shall not exceed 0.5 gals SunSpray Ultra-Fine Spray Oil/100 gals water at 50 -100 gals spray solution per acre if applied weekly. A test spray should be conducted due to increased sensitivity of greenhouse grown plants.

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**TABLE 4A: SMALL FRUITS**

<b>Crop</b>	<b>Pest</b>	<b>Application Rate - Dilute Spray</b>	<b>Time of Application</b>
<b>Caneberries</b>	Aphids Leafhopper Mites	2 Gals of product in 100 gals of water applied at 100-250 gals of spray solution per acre.	Dormant and Postharvest.
	Whitefly Psyllid	1 Gal of product in 100 gals of water applied at 100-250 gals of spray solution per acre.	Spring - Summer
<b>Cranberries</b>	Leafhopper Scale Mites	1-2 Gals of product in 100 gals of water applied at 100-250 gals of spray solution per acre.	As Needed.
<b>Blueberries</b>	Scales	3 Gals of product in 100 gals of water applied at 100-250 gals of spray solution per acre.	Dormant.
	Thrips Mites Sawfly (eggs)	2 Gals of product in 100 gals of water applied at 100-250 gals of spray solution per acre.	Foliage.
<b>Strawberries</b>	Aphids Mites	1 Gal of product in 100 gals of water applied at 100-200 gals of spray solution per acre.	Dormant and Foliage.

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**TABLE 4B: Grapes**

Crop	Pest	Application Rate		Time of Application
		Dilute Spray: Gals of Product/100 gals of water	Concentrate Spray (45-100 Gals Spray solution per Acre)*	
Grapes	Mealybugs	4-6 gals of product in 100 gals of water applied at 200-300 gals per acre.	NR	Dormant - A tank mix using an insecticide improves control.
	Mites	2 gals of product in 100 gals of water applied at 100 gals per acre.	NR	Bud Swell or shoot growth of 5-7 cm (2-3 in) in Spring.
	Mealybugs	NR	4 gals of product in a minimum of 45 gals of water	Spray when crawlers are active and exposed usually around early Summer.
	Leafhopper	NR	4 gals of product in a minimum of 45 gals of water.	Spray during first brood, if possible. Sprays after grapes are more than 1/4" diameter may affect bloom.
	Mites	2 gals of product in 100 gals of water applied at 100 gals per acre.	NR	Postharvest.
	Powdery Mildew	1 gal of product in 100 gals of water applied at 100 gals per acre.	NR	Begin application after bud break or according to local recommendations. Continue spraying every 10 to 14 days in rotation with other compatible fungicides. Frequent applications in short spray intervals may result in damage to plants.

Apply before mites reach high populations. Vineyard should be vigorous and supplied with ample water prior to application. Do not allow excessive webbing or burning. No sensitivity to SunSpray Ultra-Fine Spray Oil treatments has been seen in the vineyards of cabernet, merlot, chardonnay or ribier when used for insect control. Do not mix SunSpray Ultra-Fine Spray Oil with Captan, or sulfur since all can cause phytotoxicity in some varieties.

Avoid more than 4 consecutive sprays. Some varieties of grapes may be sensitive to 4 or more consecutive sprays.

\* Air-carrier or air-blast type sprayers are strongly recommended to avoid plant injury and reduce effect on bloom of table grapes.

**1 Gallon of Product/100 gals of water = 1 quart of product/25 gals of water = 32 Fluid ounces of product/25 gallons of water.**

**1 Quart = 0.95 liters. 1 gallon = 3.785 liters.**

**NR = Not Recommended**

**TABLE 5: VEGETABLES: OUTDOOR AND GREENHOUSE**

Crop	Pest	Application Rate	Time of Application
		Dilute Spray: Gals of Product/100 gals of water	
<b>Asparagus</b> <b>Beans</b> <b>Beets</b> <b>Cabbage</b> <b>Cauliflower</b> <b>and other cole crops</b> <b>Celery</b> <b>Corn</b> <b>Cucurbit</b> <b>Eggplant</b> <b>Lettuce</b> <b>Melon</b> <b>Pepper</b> <b>Potato</b> <b>Radish</b> <b>Squash</b> <b>Sweet Potato</b> <b>Tomato</b> <b>Tobacco</b>	Aphids Mites Beetle Larvae Leafminers Thrips Leafhopper Whitefly	1-2 gallons of product per 100 gallons of water applied at 50-100 gallons of dilute spray solution per acre.	Do not exceed 4 applications in a growing season. A 2-week application interval is recommended. Due to varietal differences in response to a treatment of SunSpray Ultra-Fine Spray Oil at the specific rate range, conduct a small test on 1 or 2 plants of the specific variety to be treated.
<b>Herbs and Spices:</b> <b>Basil</b> <b>Lemon Balm</b> <b>Mexican Oregano</b> <b>Spearmint</b>		1-2 gallons of product per 100 gallons of water applied at 50 gallons of dilute spray solution per acre.	

**Disease Control on Vegetables**

Use 1-2 gallons of product in 100 gallons of water applied at 50-100 gallons of dilute spray solution per acre to control powdery mildew on cucurbits, melons and squash; gummy stem blight and Alternaria leaf blight on melons. Apply when the disease is first noticed and continue on a weekly basis to both the upper and lower leaf surfaces. If applying to other vegetables listed in TABLE 5, first conduct a small test spraying before treating the whole crop. Limit greenhouse applications to the rate of 1 gallon of product per 100 gallons of water applied at 50-100 gallons of dilute spray per acre.

SunSpray Ultra-Fine Spray Oil applied to potatoes via aerial application at a rate of 0.75 gal – 1.0 gal in 5-10 gallons of water per acre, reduces the spread of Potato Virus Y vectored by aphids.

**1 Gallon of Product/100 gals of water = 1 quart of product/25 gals of water = 32 Fluid ounces of product/25 gallons of water.**  
**1 Quart = 0.95 liters. 1 gallon = 3.785 liters.**

**TABLE 6: FIELD CROPS**

Crop	Pest	Application Rate	Time of Application
		Dilute Spray: Gals of Product/100 gals of water	
Alfalfa Corn (sweet & field) Cotton Peanuts Soybeans Sugar Beets	Aphids Mites Leafminers Corn Earworm Rootworm Whitefly	1-2 gallons of product per 100 gallons of water applied at 50-100 gallons dilute spray per acre.	Do not exceed 4 applications in a growing season. Space applications at intervals of approximately 2 weeks.

1 Gallon of Product/100 gals of water = 1 quart of product/25 gals of water = 32 Fluid ounces of product/25 gallons of water.

1 Quart = 0.95 liters. 1 gallon = 3.785 liters.

**TABLE 7A: GREENHOUSE**

Crop or Plant	Pest	Application Rate	Specific Comments
Aglaonema Aster Azaleas Begonias Browallia Camellias Carnation Celosia Chrysanthemum Coleus Cosmos Dusty Miller Easter Lillies Gardenias Geranium Gerbera Helichrysum Hibiscus Foliage Hydrangea Impatiens Jade Plant Marigold New Guinea Impatiens Nicotonia Philodendron Portulaca Reiger Begonias Snapdragon Vinca Zinnias	Aphids Fungus Gnats Leafminers Mealybugs Scales (Hard & Soft) Spider Mites Thrips Whitefly	1-2 gallons of product in 100 gallons of water applied at 100 - 200 gallons of spray solution per acre.	Due to varietal differences in response to a treatment of SunSpray Ultra-Fine Spray Oil at the specified rate or rate range, conduct a small test on 1-2 plants of the specific variety to be treated.

1 Gallon of Product/100 gals of water = 1 quart of product/25 gals of water = 32 Fluid ounces of product/25 gallons of water.

1 Quart = 0.95 liters. 1 gallon = 3.785 liters.

*TABLE 7A: GREENHOUSE continued on next page*

**TABLE 7A: GREENHOUSE** (Continued)

Crop or Plant	Pest	Application Rate	Specific Comments
<b>Ageratum</b> <b>Crown of Thorns</b> <b>Dieffenbachia</b> <b>Ferns</b> <b>Ficus</b> <b>Lisianthus</b> <b>Orchid</b> <b>Palms</b> <b>Petunia</b> <b>Poinsettia</b> <b>Schefflera</b> <b>Sunflower</b> <b>Leaf Polish</b> <b>for hardy plants</b>	Aphids Fungus Gnats Leafminers Mealybugs Scales (Hard & Soft) Spider Mites Thrips Whitefly	1 gallon of product in 100 gallons of water applied at 100- 200 gallons of spray solution per acre.	Due to varietal differences in response to a treatment of SunSpray Ultra-Fine Spray Oil at the specified rate or rate range, conduct a small test on 1-2 plants of the specific variety to be treated.

Some plants grown in greenhouses are more sensitive to oil treatments if any of the following conditions are present when application is made;

- High Humidity
- A heavy overcast or cloudy day or during rainy periods
- Inadequate airflow
- Intense sun and/or heat build-up that stresses plant
- Night time
- Plants under water or temperature stress

**Frequency of Application:**

For the greenhouse pests listed, use once a week initially, then as the pest is controlled, decrease the frequency to every 2-3 weeks as needed.

Application safety during bloom period should be determined for each individual species of plant to be treated by conducting a small test.

**TABLE 7B: INTERIORSCAPES\***

Crop or Plant	Pest	Application Rate	Specific Comments
<b>Dieffenbachia</b> <b>Dracaena</b> <b>Ferns</b> <b>Palms</b> <b>Schefflera</b>	Aphids Leafminers Mealybugs Scales Spider Mites Whitefly	1 Gal of product per 100 gallons of water applied at 100 - 200 gallons spray solution per acre.	Do not apply to plants in direct sunlight behind glass. Due to varietal differences in response to a treatment of SunSpray Ultra-Fine Spray Oil at the specified rate or rate range, conduct a small test on 1 or 2 plants of the specific variety to be treated.
<b>Chrysanthemum</b> <b>Gardenias</b> <b>Jade Plant</b> <b>Philodendron</b>		1 - 2 Gals of product per 100 gallons of water applied at 100 - 200 gallons spray solution per acre.	

\* Protect floor, floor coverings and furniture from overspray.

**1 Gallon of Product/100 gals of water = 1 quart of product/25 gals of water = 32 Fluid ounces of product/25 gallons of water.**  
**1 Quart = 0.95 liters. 1 gallon = 3.785 liters.**

**TABLE 8**

<b>Crop or Plant</b>	<b>Pest</b>	<b>Application Rate</b>	<b>Time of Application</b>
<b>Olives</b>	Scales	Dilute Spray: 1.5 Gals of product in 100 gals water applied at 400 - 800 gals dilute spray solution per acre.	Post bloom through August and Postharvest.
<b>Bananas Plantains</b>	Yellow Sigatoka Disease	Dilute Spray: 1.0 - 1.5 Gals of product in 100 gals water applied at 100 gals dilute spray solution per acre.	This application is also effective in loosening sooty mold fungus and limiting its formation by the control of Aphids, Mealybugs, Scales and Whitefly.
<b>Avocado (Haas Only)</b>	Aphids Mealybugs Mites Scales Whitefly	Dilute Spray: 1 - 1.5 Gals of product in 100 gals water applied at 100 - 400 gals dilute spray solution per acre.	Apply through late fall.
<b>Mangos</b>	Aphids Mealybugs Mites Scales Whitefly	Dilute Spray: 1 - 1.5 Gals of product in 100 gals water applied at 100 gals dilute spray solution per acre.	Before bloom.
<b>Persimmons</b>	Leafrollers Scales Book Lice (psocoids)	Dilute Spray: 1 Gal of product in 100 gals water applied at 100 gals dilute spray solution per acre.	

**1 Gallon of Product/100 gals of water = 1 quart of product/25 gals of water = 32 Fluid ounces of product/25 gallons of water.  
1 Quart = 0.95 liters. 1 gallon = 3.785 liters.**



## STORAGE AND DISPOSAL

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

### **Pesticide Storage:**

Store in a cool, dry, locked area. Keep this product in a tightly closed container when not in use.

### **Pesticide Disposal:**

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

### **Container Handling:**

**Rigid, nonrefillable plastic or metal containers equal to or less than 5 gallons:** Nonrefillable container. Do not reuse or refill the container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

### **Rigid, nonrefillable plastic or metal containers greater than 5 gallons:**

Nonrefillable container. Do not reuse or refill this container. Triple rinse (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

### **Plastic containers:**

Offer for recycling. If recycling is not available, puncture and dispose of container in a sanitary landfill or by incineration.

### **Metal containers:**

Offer for recycling. If recycling is not available, puncture and dispose of container in a sanitary landfill, or by other procedures approved by State and Local authorities.

## LIMITED WARRANTY AND LIABILITY

This product conforms to the description and is suitable for the uses set forth on this label but is strictly limited to those uses solely as directed under the specified label conditions, and only if purchased in the original unopened container.

**TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, MANUFACTURER AND SELLER DISCLAIM ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE** (except as specified on this label). Buyer and all users shall assume all risk, liability and damage if this product is used, stored, handled or applied other than as specifically set forth on this label.

**TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, LIABILITY OF MANUFACTURER AND SELLER AND USER'S REMEDIES SHALL BE LIMITED TO REFUND OF THE PURCHASE PRICE OR REPLACEMENT OF THE SPECIFIC QUANTITY INVOLVED. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.**

**Note: This pesticide is to be sold only in this original unopened container.**

*Produced For*



**HollyFrontier Refining & Marketing LLC**  
401 Plymouth Road • Suite 350  
Plymouth Meeting, PA 19462 • 800-456-4786

SunSpray®

ULTRA-FINE®

SPRAY OIL

A Superior Horticultural  
Spray Oil for Insect and  
Mite Pest Management.



Active Ingredient: Mineral Oil*	98.8%
Other Ingredients:	1.2%
Total	100.0%
*Unsulfonated Residue of Mineral Oil	92.0% Min
*50% Distillation Point of Mineral Oil	414.0 F
*Flash Point	345.0 F
Weight per Gallon	7.1 lbs.

\*Contains petroleum distillates

### KEEP OUT OF REACH OF CHILDREN CAUTION

#### PRECAUTIONARY STATEMENTS

**Hazards to Humans And Domestic Animals. CAUTION:** Harmful if absorbed through skin, swallowed or inhaled. Avoid contact with eyes, skin, or clothing. Avoid breathing spray mist. Remove and wash contaminated clothing before use. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

#### FIRST AID

##### If on skin or clothing:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

##### If swallowed:

- Immediately call a poison control center or doctor.
- **DO NOT INDUCE VOMITING** unless told to do so by a poison control center or doctor.
- Do not give any liquid to the person.
- Do not give anything by mouth to an unconscious person.

##### 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 center 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 mouth-to-mouth, if possible.
- Call a poison control center or doctor for further treatment advice.

##### HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or when going for treatment. You may also call 1-918-594-6000 for emergency medical treatment information 24/7 or a poison control center at 1-800-222-1222.

##### NOTE TO PHYSICIAN

Contains petroleum distillates. Vomiting may cause aspiration pneumonia. Aspiration may occur after swallowing or vomiting and results in serious, and sometimes delayed, lung injury.

#### STORAGE AND DISPOSAL

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

**Pesticide Storage:** Store in a cool, dry, locked area. Keep this product in a tightly closed container when not in use.

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

**Container Handling: Rigid, nonrefillable plastic or metal containers equal to or less than 5 gallons:** Nonrefillable container. Do not reuse or refill the container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

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Produced For:

**HOLLYFRONTIER**  
SPECIALTY PRODUCTS

**HollyFrontier Refining & Marketing LLC**  
401 Plymouth Road • Suite 350  
Plymouth Meeting, PA 19462  
800-456-4786

See Additional Precautionary Statements  
Inside Booklet.  
See Directions For Use Inside Booklet.  
EPA Reg. No. 86330-11

- EPA Est. No. 86330-OK-1
- EPA Est. No. 44956-AL-001
- EPA Est. No. 49568-GA-001
- EPA Est. No. 49568-NJ-001

Net Contents: 2.5 Gallons

Net Contents: 55 Gallons



Net Contents: 275 Gallons



Net Contents: 2x2.5 Gallons



Batch/Lot Number:

ESL080621 REV081622 641032

Booklet label position

Maximum size area for label graphics (under onsert)



65 DAWSON CRESCENT,  
GEORGETOWN, ONTARIO  
L7G 1H9  
TEL: (905) 702-7881  
FAX: (905) 877-5122

CLIENT: HOLLYFRONTIER REFINING AND MARKETING  
SUBJECT: HOLLYFRONTIER SUNSPRAY ULTRA-FINE SPRAY OIL  
ARTWORK NUMBER: 641032  
REPLACES: THIS IS A NEW LABEL

LAST REVISION DATE: MAY 24/2022 (COPY REVISIONS), AUG 16/2022 (ADD STORAGE & DISPOSAL COPY).

PRINTED ON:

SIZE: ONSERT - 6"X6" BASE - 7" X 7"

BARCODE: 55G - 860008273338  
275G - 8600082733456  
2.5G - 8600082733524  
2x2.5G - 8600082733692

COLOURS

