

70060-14

01/18/2001

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Steven C. Camenisch  
Engelhard Corporation  
101 Wood Avenue  
Iselin, NJ 08830

JAN 18 2001

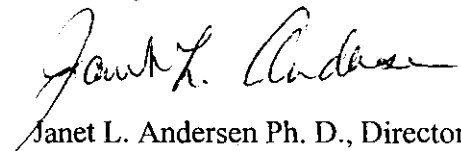
Dear Mr. Camenisch:

Subject: Request for Label Amendment for Surround® WP Crop Protectant: *Adding home use to the label.*  
EPA File Symbol Number: 70060-14  
Your Submission of October 09, 2000

The labeling changes referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable. A stamped copy of the label is enclosed for your records.

If you have any questions regarding this subject, please contact Driss Benmhend at (703) 308-9525.

Sincerely,



Janet L. Andersen Ph. D., Director  
Biopesticides and Pollution  
Prevention Division (7511C)

Enclosures

MASTER LABEL

# SURROUND<sup>®</sup> WP CROP PROTECTANT

ACTIVE INGREDIENT:  
 Kaolin:..... 95.0%  
 Other INGREDIENTS:..... 5.0%  
 Total: 100.0%

**KEEP OUT OF REACH OF CHILDREN**

## CAUTION

Manufactured by:  
 ENGELHARD CORPORATION  
 101 Wood Avenue  
 Iselin, NJ 08830

Emergency phone number: 1-800-424-9300

EPA Reg. No. 70060-14  
 EPA Est. No. 72797-AL-001

**Growth enhancer, sunburn, and heat-stress uses are not registered in California.**

ACCEPTED  
 with COMMENTS  
 in EPA Letter Dated

JAN 18 2001

Under the Federal Insecticide,  
 Fungicide, and Rodenticide Act  
 as amended, for the pesticide  
 registered under EPA Reg. No.  
 70060-14

**SUBLABEL A: AGRICULTURAL USE**

**SURROUND<sup>®</sup> WP CROP PROTECTANT**

SURROUND WP Crop Protectant Forms a Barrier Film, Which Acts as a Broad Spectrum Agricultural Crop Protectant for Controlling Damage from Various Insect, Mite, and Disease Pests, Growth Enhancer, and Protectant Against Sunburn and Heat Stress

ACTIVE INGREDIENT:	
Kaolin:.....	95.0%
Other INGREDIENTS:.....	5.0%
Total: 100.0%	

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

NOT A PLANT FOOD INGREDIENT

ACTIVE INGREDIENT  
KAOLIN 95%

Manufactured by:  
ENGELHARD CORPORATION  
101 Wood Avenue  
Iselin, NJ 08830

**Net Weight 25 lbs (11.3 kg)**

EPA Reg. No. 70060-14  
EPA Est. No. 72797-AL-001

**Growth enhancer uses are not registered in California.**

FIRST AID	
If in eyes	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
HOT LINE NUMBER	
You may contact 1-800-424-9300 for emergency medical treatment information.	

## PRECAUTIONARY STATEMENTS

### HAZARD TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. May cause irritation to the respiratory system. Avoid breathing dust or mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

### PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

Long sleeved shirt, long pants, socks and shoes, and a dust/mist-filtering respirator (MSHA/NIOSH approval number prefix TC-21C), or a NIOSH approved respirator with any N. R. P. or HE filter.

Nuisance dust masks are recommended for harvesters.

### 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 contaminate water when disposing of equipment wash water.

## DIRECTIONS FOR USE

## AGRICULTURAL USE REQUIREMENTS

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. 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, in forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation. **The restricted-entry interval (REI) is 4 hours from the time of application. Do not allow worker entry into treated areas during the restricted-entry interval (REI).** Personal protection equipment required for early entry workers are long-sleeved shirts, long pants, and shoes plus socks.

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

Do not apply SURROUND WP through any type of irrigation systems or by air.

## I. GENERAL INFORMATION

SURROUND WP protectant forms a mineral-based particle film intended for protection of agricultural crops. When SURROUND WP is applied to plants, a dry white film results. The SURROUND WP barrier will help reduce the damage to plants and crops caused by certain insects, mites, disease, and environmental stresses such as solar effects. This product may be used as the primary component in a pest management system that utilizes supplementary compatible pesticides.

### Plant Response Precautions:

Lack of adhesion or film formation on foliage or fruit may indicate spray incompatibility with the plant surface or previously applied materials.

Ensure that plant leaf and fruit surfaces are dry before applying or poor adhesion or film formation will occur.

Do not spray where a visible white film is undesirable or cannot be washed off.

### a. Mix Instructions:

#### For Agitating Sprayer Tanks

**For Concentrate Application** - Use 50 lbs. of SURROUND WP per 100 gallons of water.

**For Dilute Application** - Use 50 lbs. of SURROUND WP per 200 gallons of water.

1. Slowly add **SURROUND WP** powder into the water in a recirculating sprayer tank. Add directly into the mix basket if pump recirculation empties into the mix basket. If it does not, add **SURROUND WP** directly to water. If there is no mix basket, add powder very slowly to the recirculating water. Mix thoroughly.
2. Add tank mix pesticides, if any.
3. Continue agitation until all of the material is sprayed from the tank.
4. At the end of the application, spray until empty and flush system and nozzles with fresh water. Properly dispose of rinse water.

**For Non-agitating Sprayer Tanks, Such as Backpack Sprayers**

The following mixing sequence must be followed:

1. Use **SURROUND WP** powder at a rate of ½ lb. of **SURROUND WP** powder per one gallon of water.
2. While stirring or swirling, slowly add **SURROUND WP** powder into ¼ to ½ of the water that will be used in the batch.
3. Mix thoroughly by shaking the closed container vigorously for 30 seconds.
4. Add tank mix pesticides, if any.
5. Add the remainder of the batch water and shake for an additional 30 seconds.
6. Shake the sprayer occasionally during application.
7. At the end of the application, spray until empty and flush system and nozzles with fresh water. Properly dispose of rinse water.

**b. Compatibility:**

**SURROUND WP** is not generally effected by most other insecticides, miticides, and fungicides. However, the user should test tank mixes before use. When mixing with other products, make up a small batch and observe slurry and film characteristics. Curdling, precipitation, lack of film formation, or changes in viscosity are signs of incompatibility. Do not tank mix with sulfur, copper, or bourdeaux mixture fungicides. **Always add tank mix pesticides after the SURROUND WP powder has been added.** Use of anti-foaming agents is not recommended.

Do not tank mix with other mineral particulate products like diatomaceous earth. Applications of SURROUND WP over such products or oversprays of such products over SURROUND WP are not recommended as postharvest washoff may be impaired.

The use of additional spreader/stickers is not recommended. Products that specify other spreader/stickers should not be tank mixed with SURROUND WP.

If other adjuvants are used in conjunction with SURROUND WP, poor coverage or adhesion may result reducing the efficacy of the product. Use of adjuvants not approved by Engelhard are not recommended.

**c. General Application Guidelines (see, also, specific crop use instructions):**

**Coverage:** Use sufficient spray volume to obtain thorough coverage. For optimal performance, applications must coat all portions of plant that are to be protected, including both sides of the leaves. Applications can be made with any commercial air blast or high-pressure sprayer that provides enough air turbulence to coat both sides of the leaves, bark, and fruit. Tractor speed must not exceed 3 mph.

**Plant Color Change:** All plant surfaces must turn a hazy white color after drying. Additional treatments will turn the plant surfaces a deeper white. This is normal, and is indicative of appropriate film formation. Generally, two or more coatings are required for complete coverage and for establishment of the foundation of the protective barrier.

**Foliage Dryness:** Apply only to dry foliage. Do not apply to wet foliage or poor coverage and adhesion will result.

**Droplet Size:** Nozzles that produce a fine spray are recommended when SURROUND WP is used under normal temperature and humidity conditions. Under very hot and dry conditions, nozzles that produce a coarser spray and larger volumes may be necessary. Otherwise, the product may dry before it contacts the foliage and will result in poor film formation.

**Spray Methods:** Air blast or high-pressure sprayers are required. Observe specific crop label instructions for directions regarding spray volume. Calibrate spray equipment per equipment manufacturer to deliver the required volume. The flow rate of this product is similar to water. Use strainers in the spray system and behind each nozzle per normal practice.

**Reapplication:** Reapplication is generally required every 7-14 days. Intervals can be widened to 14 to 21 days later in the season when new growth diminishes.

When the dry foliage has lost its white appearance, reapplication is necessary. Heavy rainfall, new growth, and wind erosion will affect film quality. Reapply to re-establish coverage after heavy rain as soon as the foliage is dry. However, reapplication may not be necessary if all target surfaces remain thoroughly coated. Excessively thick coatings are not recommended.

**Overhead Irrigation Considerations:** Overhead irrigation will wash off the film and reduced efficacy will result. Overhead irrigation is not preferred, but, if used, should be used just prior to the next application to prevent premature wash-off.

**d. General Insect and Mite Control:**

SURROUND WP is a protectant/repellent that forms a film barrier to insects and mites. For optimum performance, begin application before a particular insect or mite outbreak occurs; thorough coverage must be in place before the pest outbreak. Thorough, uniform, and consistent coverage is essential for effective control.

**e. Growth Enhancer, Sunburn and Heat Stress Protectant:**

When applied at recommended rates and frequencies, benefits such as increased plant vigor and improved yields may occur on many fruit and nut trees. Under high ambient temperatures, SURROUND WP reduces canopy temperature and, therefore, can help to reduce heat and water stress. When SURROUND WP is used, many pome and stone fruit varieties have shown improved fruit color, smoothness, and size with less russet, sunburn, and cracking.

For sunburn reduction, apply before conditions leading to sunburn occur. Apply concentrate spray at least every 7-14 days to ensure complete coverage of fruit surfaces. Under windy conditions, particle film may be rubbed off by leaf movement making reapplication necessary.

If initiating sprays for sunburn reduction where there have been no prior sprays, thorough coverage of all fruit surfaces must be in place just prior to sunburn-causing conditions. To achieve optimal coverage, it is necessary to start the spray program with either two concentrate applications 5-7 days apart, or one application with twice the concentrate use rate of per acre (for example, for nominal 12' trees, 100 lbs/acre in 200 gallons of water).

**f. Packing and Processing:**

Washing is required unless films weather off before harvest. Most residues wash off with packing line brushing and forced water sprays. An approved washing detergent may be used in the packing line and/or wash tank. A pre-harvest washing trial is recommended to determine if a washing detergent is necessary. Waxing further improves fruit appearance.

**g. Organic Growing Considerations:**

1. Washing is usually necessary to remove film. Consult your organic materials regulating body for approved fruit cleaning products. Plain water brushing and/or hand wiping can remove film from firm smooth-skinned fruit such as apples, pears, and nectarines.
2. Tank mixes with pyrethrins, potassium salts of fatty acids, and rotenone are generally compatible but curdling, precipitation, uneven film formation, or changes in viscosity are signs



of incompatibility. Test mix compatibility before use. If these conditions occur, do not tank mix SURROUND WP.

- Do not tank mix or over spray with sulfur, copper, or bourdeaux mixture fungicides.

## II. TREE FRUIT AND NUT CROPS

Apply sufficient spray volume to obtain thorough coverage.

The plant surface must turn a hazy white color after drying. Additional treatments will turn the plant surface a deeper white. This is normal, and is indicative of appropriate film formation. Generally, two or more coatings are required for complete coverage and for establishment of the foundation of the protective barrier.

Maintain film coverage to maximize potential solar protectant benefits. If rainy weather reduces coverage on leaves and fruit, reapply to reestablish coverage.

**Estimate\* rates based on the table below:**

### Concentrate Application per Acre

Tree Height (ft)	Mix (gals)	Rate of SURROUND WP (lbs)
6'	50	25
12'	100	50
18'	150	75
24'	200	100

### Dilute Application per Acre\*\*

Tree Height (ft)	Mix (gals)	Rate of SURROUND WP (lbs)
6'	100	25
12'	200	50
18'	300	75
24'	400	100

\*Estimate rates are based on approximate tree height only. Tree spacing, pruning practices, time of season, and cultivar type affect spray rates. High density or low-density foliage will require correspondingly higher or lower rates. A visual inspection of film deposition and completeness of coverage is crucial for fine-tuning spray amounts.

\*\*Apply to near-drip. Do not apply to excessive drip to avoid waste and poor coverage.

Continue applications up to harvest to maximize SURROUND WP horticultural benefits.

Fungicides, insecticides, miticides, and bactericides may be tank mixed or over-sprayed according to their product label use instructions. If tank mixing pesticides, follow the pre-harvest interval of those pesticides. If using SURROUND WP alone, reapply as needed up to harvest.

**For heat stress relief for tree fruit and nut crops**

Apply at 7 to 14 day intervals starting when temperatures are anticipated to reach 90 degrees F or when heat stress is known to occur. Application intervals may be widened to 14 to 21 days as new growth slows or when dry periods occur, being sure to maintain good film coverage to maximize potential benefits of SURROUND WP.

**Washing is recommended; most residues wash off with brushing and forced water sprays. An approved fruit cleaning detergent may be used in the packing line and/or wash tank. A pre-harvest washing trial is recommended to determine if a detergent is necessary. Waxing further improves fruit appearance.**

**Pears**

**For pear psylla control**

- Dilute applications are recommended prior to infestation. Adjust volume per tree height to ensure thorough coverage without excessive drip.
- Apply every 7 – 14 days starting early (no later than green cluster bud). If applying during bloom, do not tank mix with materials toxic to bees. Reapplication following heavy rain may be necessary.
- Application intervals may be widened to 14 to 21 days as new growth slows or when dry periods occur.
- After infestation, SURROUND WP may be effective at reducing psylla adults, soft bodied nymphs, and the damage of psylla honeydew if thorough coverage is achieved and maintained.

**For suppression of two-spotted spider mite, European red mite, pear rust mite, mealy bug, thrips, leafhoppers, green fruit worm, codling moth, California pear slug, Lygus bugs, obliquebanded leafroller, pandemus leafroller, tarnished plant bug, stink bugs, and fabraea leaf spot**

Spray per recommendations for psylla control or spray before expected infestation and continue at 7 to 14 day intervals. Do not widen spray intervals beyond 14 days to achieve season-long suppression. Supplemental pest control methods may be needed for full control; especially for codling moth.

Continue applications to maximize **SURROUND WP** horticultural benefits.

Fungicides, insecticides, miticides, and bactericides may be tank mixed, if compatible, or over-sprayed according to their product label use instructions. If tank mixing pesticides, follow the pre-harvest interval of those pesticides. If using **SURROUND WP** alone, reapply as needed up to harvest.

## **Apples**

### **For control of over-wintering obliquebanded leafroller**

- Apply two sprays 7 days apart starting just prior to delayed dormant.

### **For control of leafhoppers**

- Apply every 7 to 14 days starting within three days of first petal fall.

### **For suppression of European red mite, apple rust mite, two-spotted spider mite, codling moth, plum curculio, Leafminers, apple sucker, Lygus bugs, pandemus leafroller, tarnished plant bug, stink bugs, apple maggot, thrips, green fruitworms, and aphids**

- Apply at 7 to 14 day intervals starting at delayed dormant. If applying during bloom, do not tank mix with materials toxic to bees. Application intervals may be widened to 14 to 21 days as new growth slows or when dry periods occur. Be sure to maintain a good film coverage to maximize potential benefits of **SURROUND WP**. Supplemental pest control methods may be needed for full control, especially for codling moth.

**SURROUND WP** may improve fruit quality if applications start at petal fall and are continued up until harvest. When applied at recommended rates and frequencies, benefits such as increased plant vigor and improved yields may occur in certain apple cultivars. Under high ambient temperatures, **SURROUND WP** reduces canopy temperature and, therefore, can help to reduce heat and water stress. Many apple cultivars have shown improved fruit color, smoothness, and size with less russet, sunburn, and cracking when **SURROUND WP** is used.

### **For sunburn reduction**

Apply before conditions leading to sunburn occur. Apply sufficient spray to ensure complete coverage of fruit surfaces. To achieve optimal coverage, start with one concentrate application followed with subsequent dilute applications at half to full rates every 7-14 days. A minimum of three applications is recommended for the thorough coverage necessary for sunburn reduction. Under windy conditions, particle film may be rubbed off by leaf movement making reapplication necessary.

If initiating sprays for sunburn reduction where there have been no prior sprays, thorough coverage of all fruit surfaces must be in place just prior to sunburn-causing conditions. To achieve optimal coverage, it is necessary to start the spray program with either two concentrate applications 5-7 days apart, or, one application with twice the concentrate use rate of per acre (for example, for nominal 12' trees, 100 lbs. per acre in 200 gallons of water).

Fungicides, insecticides, miticides, and bactericides may be tank mixed, if compatible, or over-sprayed according to their product label use instructions. If tank mixing pesticides, follow the pre-harvest interval of those pesticides. If using SURROUND WP alone, reapply as needed up to harvest.

**Stone Fruit – Apricots, cherries, nectarines, peaches, plums, and prunes**

**For control of Japanese beetle**

- Apply one week prior to the expected infestation period and follow with three to four additional applications at 5 to 7 day intervals.

**For suppression of thrips**

- Apply before bloom and reapply at 5 to 7 day intervals throughout bloom. Continue applications at 7 to 14 day intervals as needed throughout the season. Do not tank mix with materials toxic to bees. Be sure to maintain good film coverage to maximize potential benefits of SURROUND WP. Supplemental pest control methods may be needed for full control.

**For suppression of European red mite, two-spotted spider mite, peach silver mite, stink bugs, oriental fruit moth, tarnished plant bug, European earwig, June beetle, peach twig borer, naval orange worm, and plum curculio**

- Apply within three days of first petal fall and continue applications at 7 to 14 day intervals. Application timing may be widened to once every 14 to 21 days when new growth slows or when dry periods occur. Be sure to maintain good film coverage to maximize potential benefits of SURROUND WP. Supplemental pest control methods may be needed for full control.

Continue applications to maximize SURROUND WP horticultural benefits.

Fungicides, insecticides, miticides, and bactericides may be tank mixed, if compatible, or over-sprayed according to their product label use instructions. If tank mixing pesticides, follow the pre-harvest interval of those pesticides. If using SURROUND WP alone, reapply as needed up to harvest.

**Special Washing Considerations for Stone Fruit: Washing is required; especially for fuzzy peaches. Most residues wash off with brushing and forced water sprays. An approved fruit cleaning detergent may be used in the packing line and/or wash tank. Prior to brushing, a pre-soak in approved fruit cleaning detergent is usually needed for fuzzy peaches. A pre-harvest washing trial is recommended to determine if a detergent is necessary. Waxing further improves fruit appearance.**

## **Citrus Fruits – Lemons, Limes, Grapefruit, and Oranges**

### **For suppression of thrips and mites**

- Apply before bloom and reapply at 5 to 7 day intervals throughout bloom. Continue applications at 7 to 14 day intervals as needed throughout the season. Do not tank mix with materials toxic to bees. Be sure to maintain good film coverage to maximize potential benefits of SURROUND WP. Supplemental pest control methods may be needed for full control.

Continue applications to maximize SURROUND WP horticultural benefits.

Fungicides, insecticides, miticides, and bactericides may be tank mixed, if compatible, or over-sprayed according to their product label use instructions. If tank mixing pesticides, follow the pre-harvest interval of those pesticides. If using SURROUND WP alone, reapply as needed up to harvest.

## **Nut Trees – Walnuts, Pecans, and Almonds**

### **For suppression of mites**

- Apply at 7 to 14 day intervals starting after nut set. Application timing may be widened during dry periods to once every 14 to 21 days, being sure to maintain good film coverage to maximize potential benefits of SURROUND WP. Supplemental pest control methods may be needed for full control.

Continue applications to maximize SURROUND WP horticultural benefits.

Fungicides, insecticides, miticides, and bactericides may be tank mixed or over-sprayed according to their product label use instructions. If tank mixing pesticides, follow the pre-harvest interval of those pesticides. If using SURROUND WP alone, reapply as needed up to harvest.

## **III. SMALL FRUIT CROPS**

Apply sufficient spray volume to obtain thorough coverage.

Apply only to fruits to be used for processing.

**Application of plain water via normal sprayer prior to harvest may help to reduce SURROUND WP residues. This may be particularly helpful for wine grapes.**

Continue applications to maximize SURROUND WP horticultural benefits.

Fungicides, insecticides, miticides, and bactericides may be tank mixed, if compatible, or over-sprayed according to their product label use instructions. If tank mixing pesticides, follow the pre-harvest interval of those pesticides. If using SURROUND WP alone, reapply as needed up to harvest.

### **Blackberries, Raspberries, Dewberries, Boysenberries, Loganberries, and Blueberries**

**For suppression of blackberry psyllid, European raspberry aphid, Japanese beetle, leafhoppers, thrips, two-spotted spider mite, and European red mite**

- Apply 12.5 to 50 lbs. per acre at 7 to 14 day intervals starting after fruit set. Application timing may be widened during dry periods to once every 14 to 21 days, being sure to maintain good film coverage to maximize potential benefits of SURROUND WP. Supplemental pest control methods may be needed for full control.

### **Wine Grapes**

**For suppression of European red mite, two-spotted spider mite, omnivorous leafroller, grape leafroller, grape leaf skeletonizer, leafhoppers, Japanese beetle, June beetle, and thrips**

- Apply at 12.5 to 37.5 lbs. per acre at 7 to 14 day intervals starting after fruit set. Depending upon pest pressure, application timing may be widened during dry periods to once every 14 to 21 days, being sure to maintain good film coverage to maximize potential benefits of SURROUND WP. Supplemental pest control methods may be needed for full control.

## **IV. FIELD AND VEGETABLE CROPS**

Apply sufficient spray volume to obtain thorough coverage.

Fungicides, insecticides, miticides, and bactericides may be tank mixed, if compatible, or over-sprayed according to their product label use instructions. If tank mixing pesticides, follow the pre-harvest interval of those pesticides. If using SURROUND WP alone, reapply as needed up to harvest.

For difficult to wash or unwashed crops, especially in low rainfall areas, it is recommended to stop spraying 30 days prior to harvest or when fruit are small. For crops where the produce is not

directly sprayed by **SURROUND WP** (e.g. potato, shelled beans, and radishes), **SURROUND WP** may be applied up to the day of harvest. Cotton may be sprayed until 10 days before harvest.

**Washing is recommended; most residues wash off with brushing and forced water sprays; an approved detergent may be used in the packing line and/or wash tank. A pre-harvest washing trial is recommended to determine if a detergent is necessary.**

**For heat stress relief and sunburn protection of field and vegetable crops**

- Apply at 7 to 14 day intervals starting when heat stress or sunburn is known to occur. Application timing may be widened to 14 to 21 days as new growth slows or when dry periods occur, being sure to maintain good film coverage to maximize potential benefits of **SURROUND WP**.

**Beans**

**For suppression of alfalfa looper, aphids, Fall armyworm, flea beetle, Mexican bean beetle, European red mites, Japanese beetle, leafhoppers, Lygus bug, stink bugs, tarnished plant bug, three cornered alfalfa hopper, thrips, two-spotted spider mite, and velvetbean caterpillar**

- Apply 6.25 to 12.5 lbs. per acre at 7 to 14 day intervals starting after fruit set. Application timing may be widened during dry periods to once every 14 to 21 days, being sure to maintain good film coverage to maximize potential benefits of **SURROUND WP**. Supplemental pest control methods may be needed for full control.

**Collards, Garden beet, Sugar beet, Horseradish, Radishes, Rutabagas, and Turnips**

**For suppression of European red mites, flea beetle, harlequin bug, leafhoppers, tarnished plant bug, two-spotted spider mite, and imported cabbage worm**

- Apply 6.25 to 12.5 lbs. per acre at 7 to 14 day intervals starting after fruit set. Application timing may be widened during dry periods to once every 14 to 21 days, being sure to maintain good film coverage to maximize potential benefits of **SURROUND WP**. Supplemental pest control methods may be needed for full control.

**Cotton**

**For suppression of cotton fleahopper, European red mites, flea beetles, tarnished plant bug, thrips, two-spotted spider mite, and whiteflies**

- Apply 6.25 to 25.0 lbs. per acre at 7 to 14 day intervals starting after fruit set. Application timing may be widened during dry periods to once every 14 to 21 days, being sure to maintain good film coverage to maximize potential benefits of SURROUND WP. Supplemental pest control methods may be needed for full control.

## Potato, Tomato, Eggplant, and Pepper

For suppression of European red mites, Colorado potato beetle, flea beetles, lace bugs, leafhoppers, stink bugs, tarnished plant bug, tomato fruit worm, tomato pinworm, and two-spotted spider mite

- Apply 6.25 to 25 lbs. per acre at 7 to 14 day intervals starting one week before infestation is expected. Supplemental pest control methods may be needed for full control.

## Onions

For suppression of onion thrips

- Apply 6.25 to 12.5 lbs. per acre at 7 to 14 day intervals starting one week before infestation is expected. Supplemental pest control methods may be needed for full control.

## Cucurbits

For suppression of cucumber beetles

Apply 6.25 to 25 lbs. per acre at 7 to 14 day intervals starting one week before infestation is expected. Supplemental pest control methods may be needed for full control.

### STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store in a dry, sheltered location. Product is slippery when wet. In case of spill or leak, avoid breathing dust, clean up and dispose of wastes in compliance with applicable Federal, State, and local regulations.

**PESTICIDE DISPOSAL:** Pesticide, spray mixture or rinsate that cannot be used according to label instructions must be disposed of according to applicable Federal, State, and local procedures.

**CONTAINER DISPOSAL:** Completely empty bag into application equipment. Dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of the smoke.

### CONDITIONS OF SALE, WARRANTY STATEMENT, DISCLAIMER



THE MANUFACTURER WARRANTS THAT THIS PRODUCT CONFORMS TO THE CHEMICAL DESCRIPTION ON THE LABEL AND THAT, SUBJECT TO THE INHERENT RISKS DISCUSSED BELOW, THIS PRODUCT IS REASONABLY FIT FOR THE PURPOSES SET FORTH IN THIS LABEL WHEN USED UNDER NORMAL CONDITIONS AND STRICTLY IN ACCORDANCE WITH THE DIRECTIONS, WARNINGS, AND OTHER STATEMENTS ON THIS LABEL. IT IS IMPOSSIBLE TO ELIMINATE ALL RISKS INHERENTLY ASSOCIATED WITH THE USE OF THIS PRODUCT. CROP INJURY, INEFFECTIVENESS, OR OTHER UNINTENDED CONSEQUENCES MAY RESULT BECAUSE OF SUCH FACTORS AS WEATHER CONDITIONS, PRESENCE OF OTHER MATERIALS, OR THE MANNER OF USE OR APPLICATION, ALL OF WHICH ARE BEYOND THE CONTROL OF MANUFACTURER. ALL SUCH RISKS ARE ASSUMED BY BUYER/USER. THE DIRECTIONS, WARNINGS AND OTHER STATEMENTS ON THIS LABEL ARE BASED UPON REASONABLE EXPERTS' EVALUATIONS OF REASONABLE TESTS OF EFFECTIVENESS, AND UPON REPORTS OF FIELD EXPERIENCE. TESTS HAVE NOT BEEN MADE UNDER ALL CONDITIONS.

THE MANUFACTURER NEITHER INTENDS, NOR DOES IT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, AND IT EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

THIS WARRANTY DOES NOT EXTEND TO, AND THE BUYER SHALL BE SOLELY RESPONSIBLE FOR, ANY AND ALL LOSSES OR DAMAGE WHICH MAY RESULT FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL, DIRECTIONS, WARNINGS OR CAUTIONS.

BUYER'S EXCLUSIVE REMEDY AND MANUFACTURER'S OR SELLER'S EXCLUSIVE LIABILITY FOR ANY AND ALL CLAIMS, LOSSES, DAMAGES OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY, TORT OR OTHERWISE, SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION, TO REPLACEMENT OF, OR REFUND OF THE PURCHASE PRICE FOR THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

ENGELHARD OFFERS THIS PRODUCT FOR SALE AT ALL TIMES SUBJECT TO THE FOREGOING.

**SURROUND WP Crop Protectant**  
*An HPF<sup>®</sup> Particle Film Technology Product*

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Surround and HPF are trademarks of Engelhard Corporation

sublaba

**SUBLABLE B: NON-AGRICULTURAL USE**

**SURROUND<sup>®</sup> WP CROP PROTECTANT**

SURROUND WP Crop Protectant Forms a Barrier Film, Which Acts as a Broad Spectrum Crop Protectant for Home, Landscape, and garden use for Controlling Damage from Various Insect, Mite, and Disease Pests, Growth Enhancer, and Protectant Against Sunburn and Heat Stress

**For External Household Use Only**

**Do not spray where a visible white film is undesirable or cannot be washed off such as porous wood, masonry, asphalt, and other valuable goods.**

ACTIVE INGREDIENT:

Kaolin:.....	95.0%
Other INGREDIENTS:.....	5.0%
	Total: 100.0%

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

Manufactured by:  
ENGELHARD CORPORATION  
101 Wood Avenue  
Iselin, NJ 08830

**Net Weight 5 lbs (2.7 kg)**

EPA Reg. No. 70060-14  
EPA Est. No. 72797-AL-001

**Growth enhancer, sunburn, and heat-stress uses are not registered in California.**

FIRST AID	
If in eyes	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
HOT LINE NUMBER	
You may contact 1-800-424-9300 for emergency medical treatment information	

## PRECAUTIONARY STATEMENTS

### HAZARD TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. May cause irritation to the respiratory system. Avoid breathing dust or mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

### ENVIRONMENTAL HAZARDS

Do not apply directly to water. Do not contaminate water when disposing of equipment wash water or rinsate.

## DIRECTIONS FOR USE

### 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 treated area without protective clothing until sprays have dried.

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

## I. GENERAL INFORMATION

**SURROUND WP** protectant forms a mineral-based particle film intended for protection of agricultural crops. When **SURROUND WP** is applied to plants, a dry white film results. The **SURROUND WP** barrier will help reduce the damage to plants and crops caused by certain insects, mites, disease, and environmental stresses such as solar effects. This product may be used

as the primary component in a pest management system that utilizes supplementary compatible pesticides.

**Plant Response Precautions:**

Lack of adhesion or film formation on foliage or fruit may indicate spray incompatibility with the plant surface or previously applied materials.

Ensure that plant leaf and fruit surfaces are dry before applying or poor adhesion or film formation will occur.

**a. Mix Instructions**

**For Sprayer Tanks, Such as Hand-held or Backpack Sprayers**

The following mixing sequence must be followed:

1. Use **SURROUND WP** powder at a rate of ½ lb. (about 3 cups) of **SURROUND WP** powder per one gallon of water.
2. While stirring or swirling, slowly add **SURROUND WP** powder into ¼ to ½ of the water that will be used in the batch.
3. Mix thoroughly by shaking the closed container vigorously for 30 seconds.
4. Add tank mix pesticides, if any.
5. Add the remainder of the batch water and shake for an additional 30 seconds.
6. Shake the sprayer occasionally during application.
7. At the end of the application, spray until empty and flush system and nozzles with fresh water. Properly dispose of rinse water.

**b. Compatibility:**

**SURROUND WP** is generally mixable with most other household use insecticides, miticides, and fungicides. However, the user should test tank mixes before use. When mixing with other products, make up a small batch and observe slurry and film characteristics. Curdling, precipitation, lack of film formation, or changes in viscosity are signs of incompatibility. Do not tank mix with bordeaux mixture fungicides. **Always add tank mix pesticides after the SURROUND WP powder has been added.** Use of anti-foaming agents is not recommended.

**c. General Application Guidelines (see, also, specific crop use instructions):**

**Coverage:** Use sufficient spray volume to obtain thorough coverage. For optimal performance, applications must coat all portions of plant that are to be protected, including both sides of the leaves. **Plant Color Change:** All plant surfaces must turn a hazy white color after drying. Additional treatments will turn the plant surfaces a deeper white. This is normal, and is indicative of appropriate film formation. Generally, two or more coatings are required for complete coverage and for establishment of the foundation of the protective barrier.

**Foliage Dryness:** Apply only to dry foliage. Do not apply to wet foliage or poor coverage and adhesion will result.

**Reapplication:** Reapplication is generally required every 7-14 days. Intervals can be widened to 14 to 21 days later in the season when new growth diminishes.

When the dry foliage has lost its white appearance, reapplication is necessary. Heavy rainfall, new growth, and wind erosion will affect film quality. Reapply to re-establish coverage after heavy rain as soon as the foliage is dry. However, reapplication may not be necessary if all target surfaces remain thoroughly coated. Excessively thick coatings are not recommended.

**d. General Insect and Mite Control:**

**SURROUND WP** is a protectant/repellent that forms a film barrier to insects and mites. For optimum performance, begin application before a particular insect or mite outbreak occurs; thorough coverage must be in place before the pest outbreak. Thorough, uniform, and consistent coverage is essential for effective control.

**e. Growth Enhancer, Sunburn and Heat Stress Protectant:**

When applied at recommended rates and frequencies, benefits such as increased plant vigor and improved yields may occur on many fruit and nut trees. Under high ambient temperatures, **SURROUND WP** reduces canopy temperature and, therefore, can help to reduce heat and water stress. When **SURROUND WP** is used, many pome and stone fruit varieties have shown improved fruit color, smoothness, and size with less russet, sunburn, and cracking.

For sunburn reduction, apply before conditions leading to sunburn occur. Apply concentrate spray at least every 7-14 days to ensure complete coverage of fruit surfaces. Under windy conditions, particle film may be rubbed off by leaf movement making reapplication necessary.

If initiating sprays for sunburn reduction where there have been no prior sprays, thorough coverage of all fruit surfaces must be in place just prior to sunburn-causing conditions

**f. Washing and Processing:**

Rub off any residue with a brush under running water. Traces of residue will not effect processed produce quality.

**g. Organic Growing Considerations:**

Surround WP is listed for use in organic crop production by the Organic Materials Review Institute (OMRI).

**II. TREE FRUIT AND NUT CROPS**

**Pears**

**For pear psylla control**

- Apply every 7 – 14 days starting early in the spring (no later than green cluster bud). If applying during bloom, do not tank mix with materials toxic to bees. Reapplication following heavy rain may be necessary.
- Application intervals may be widened to 14 to 21 days as new growth slows or when dry periods occur.
- After infestation, **SURROUND WP** may be effective at reducing psylla adults, soft bodied nymphs, and the damage of psylla honeydew if thorough coverage is achieved and maintained.

**For suppression of two-spotted spider mite, European red mite, pear rust mite, mealy bug, thrips, leafhoppers, green fruit worm, codling moth, California pear slug, Lygus bugs, obliquebanded leafroller, pandemus leafroller, tarnished plant bug, stink bugs, and fabraea leaf spot**

Spray per recommendations for psylla control or spray before expected infestation and continue at 7 to 14 day intervals. Do not widen spray intervals beyond 14 days to achieve season-long suppression. Supplemental pest control methods may be needed for full control; especially for codling moth.

**Apples**

**For control of over-wintering obliquebanded leafroller**

- Apply two sprays 7 days apart starting just prior to delayed dormant.

**For control of leafhoppers**

- Apply every 7 to 14 days starting within three days of first petal fall.

**For suppression of European red mite, apple rust mite, two-spotted spider mite, codling moth, plum curculio, Leafminers, apple sucker, Lygus bugs, pandemus leafroller, tarnished plant bug, stink bugs, apple maggot, thrips, green fruitworms, and aphids**

- Apply at 7 to 14 day intervals starting at delayed dormant. If applying during bloom, do not tank mix with materials toxic to bees. Application intervals may be widened to 14 to 21 days as new growth slows or when dry periods occur. Be sure to maintain a good film coverage to maximize potential benefits of **SURROUND WP**. Supplemental pest control methods may be needed for full control, especially for codling moth.

**Stone Fruit – Apricots, cherries, nectarines, peaches, plums, and prunes**

**For control of Japanese beetle**

- Apply one week prior to the expected infestation period and follow with three to four additional applications at 5 to 7 day intervals.

**For suppression of thrips**

- Apply before bloom and reapply at 5 to 7 day intervals throughout bloom. Continue applications at 7 to 14 day intervals as needed throughout the season. Do not tank mix with materials toxic to bees. Be sure to maintain good film coverage to maximize potential benefits of **SURROUND WP**. Supplemental pest control methods may be needed for full control.

**For suppression of European red mite, two-spotted spider mite, peach silver mite, stink bugs, oriental fruit moth, tarnished plant bug, European earwig, June beetle, peach twig borer, naval orange worm, and plum curculio**

- Apply within three days of first petal fall and continue applications at 7 to 14 day intervals. Application timing may be widened to once every 14 to 21 days when new growth slows or when dry periods occur. Be sure to maintain good film coverage to maximize potential benefits of **SURROUND WP**. Supplemental pest control methods may be needed for full control.

**Special Instructions for Peaches: Peaches may hold a white film on the skin. Only apply on peaches used for fresh eating for a month after petal fall to avoid difficult-to-remove residues at harvest. Peaches for processing can be applied season-long.**

## Citrus Fruits – Lemons, Limes, Grapefruit, and Oranges

### For suppression of thrips

- Apply before bloom and reapply at 5 to 7 day intervals throughout bloom. Continue applications at 7 to 14 day intervals as needed throughout the season. Do not tank mix with materials toxic to bees. Be sure to maintain good film coverage to maximize potential benefits of SURROUND WP. Supplemental pest control methods may be needed for full control.

## Nut Trees – Walnuts, Pecans, and Almonds

- Use for sunburn reduction only per instructions in 1 e.

## III. SMALL FRUIT CROPS

Apply only to fruits to be used for processing (cooking) as the white film will be difficult to remove completely at harvest.

Application of plain water via a hose prior to harvest may help to reduce SURROUND WP residues. This may be particularly helpful for wine grapes.

## Blackberries, Raspberries, Dewberries, Boysenberries, Loganberries, and Blueberries

For suppression of blackberry psyllid, European raspberry aphid, Japanese beetle, leafhoppers, thrips, two-spotted spider mite, and European red mite

- Apply at 7 to 14 day intervals starting after fruit set. Application timing may be widened during dry periods to once every 14 to 21 days, being sure to maintain good film coverage to maximize potential benefits of SURROUND WP. Supplemental pest control methods may be needed for full control.

## Wine Grapes

For suppression of European red mite, two-spotted spider mite, omnivorous leafroller, grape leafroller, grape leaf skeletonizer, leafhoppers, Japanese beetle, June beetle, and thrips

- Apply at 7 to 14 day intervals starting after fruit set. Depending upon pest pressure, application timing may be widened during dry periods to once every 14 to 21 days, being sure to maintain good film coverage to maximize potential benefits of SURROUND WP. Supplemental pest control methods may be needed for full control.



## **IV. FIELD AND VEGETABLE CROPS**

For difficult to wash or unwashed crops, especially in low rainfall areas, it is recommended to stop spraying 30 days prior to harvest or when fruit are small. For crops where the produce is not directly sprayed by SURROUND WP (e.g. potato, shelled beans, and radishes), SURROUND WP may be applied up to the day of harvest.

### **Beans**

**For suppression of alfalfa looper, aphids, Fall armyworm, flea beetle, Mexican bean beetle, European red mites, Japanese beetle, leafhoppers, Lygus bug, stink bugs, tarnished plant bug, three cornered alfalfa hopper, thrips, two-spotted spider mite, and velvetbean caterpillar**

- Apply at 7 to 14 day intervals starting after fruit set. Application timing may be widened during dry periods to once every 14 to 21 days, being sure to maintain good film coverage to maximize potential benefits of SURROUND WP. Supplemental pest control methods may be needed for full control.

### **Potato, Tomato, Eggplant, and Pepper**

**For suppression of European red mites, Colorado potato beetle, flea beetles, lace bugs, leafhoppers, stink bugs, tarnished plant bug, tomato fruit worm, tomato pinworm, and two-spotted spider mite**

- Apply at 7 to 14 day intervals starting one week before infestation is expected. Supplemental pest control methods may be needed for full control.

### **Onions**

**For suppression of onion thrips**

- Apply 6.25 to 12.5 lbs. per acre at 7 to 14 day intervals starting one week before infestation is expected. Supplemental pest control methods may be needed for full control.

### **Cucurbits**

**For suppression of cucumber beetles**

Apply 6.25 to 25 lbs. per acre at 7 to 14 day intervals starting one week before infestation is expected. Supplemental pest control methods may be needed for full control.

**STORAGE AND DISPOSAL**

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

**PESTICIDE STORAGE:**

Store in a dry, locked, sheltered location and away from food or feed. Store the container in the upright position. Product is slippery when wet.

**PESTICIDE DISPOSAL:**

**If partly filled:** Call your local solid waste agency or 1-800-CLEANUP (or equivalent organization) for disposal instructions. Unless otherwise instructed, discard in trash. Never pour down drain or on the ground.

**CONTAINER DISPOSAL:**

**If empty:** Do not reuse the container. Do not rinse unless required for recycling. If recycling is not available, tightly fasten the lid, if applicable, and discard in trash.

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THE MANUFACTURER WARRANTS THAT THIS PRODUCT CONFORMS TO THE CHEMICAL DESCRIPTION ON THE LABEL AND THAT, SUBJECT TO THE INHERENT RISKS DISCUSSED BELOW, THIS PRODUCT IS REASONABLY FIT FOR THE PURPOSES SET FORTH IN THIS LABEL WHEN USED UNDER NORMAL CONDITIONS AND STRICTLY IN ACCORDANCE WITH THE DIRECTIONS, WARNINGS, AND OTHER STATEMENTS ON THIS LABEL. IT IS IMPOSSIBLE TO ELIMINATE ALL RISKS INHERENTLY ASSOCIATED WITH THE USE OF THIS PRODUCT. CROP INJURY, INEFFECTIVENESS, OR OTHER UNINTENDED CONSEQUENCES MAY RESULT BECAUSE OF SUCH FACTORS AS WEATHER CONDITIONS, PRESENCE OF OTHER MATERIALS, OR THE MANNER OF USE OR APPLICATION, ALL OF WHICH ARE BEYOND THE CONTROL OF MANUFACTURER. ALL SUCH RISKS ARE ASSUMED BY BUYER/USER. THE DIRECTIONS, WARNINGS AND OTHER STATEMENTS ON THIS LABEL ARE BASED UPON REASONABLE EXPERTS' EVALUATIONS OF REASONABLE TESTS OF EFFECTIVENESS, AND UPON REPORTS OF FIELD EXPERIENCE. TESTS HAVE NOT BEEN MADE UNDER ALL CONDITIONS.

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