

SPIRODICLOFEN GROUP 23 INSECTICIDE

# Spine

For Use on Avocado, Black Sapote, Canistel, Citrus, Grapes, Hop, Mango, Mamey Sapote, Papaya, Pome Fruit, Sapodilla, Star Apple, Stone Fruit, Tree Nuts, and Christmas Tree Plantations.

ACTIVE INGREDIENT:	WT. BY %
Spirodiclofen: 3-(2, 4-dichlorophenyl)-2-oxo-1-oxaspiro [4.5] dec-3-en-4-yl 2, 2-dimethylbutanoate. . . . .	23.5%
OTHER INGREDIENTS: . . . . .	76.5%
TOTAL: . . . . .	100.0%

Contains 2.11 lbs. active ingredient per gallon or 253 grams per liter.

## KEEP OUT OF REACH OF CHILDREN CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand this label, find someone to explain it to you in detail.)

See label booklet for complete First Aid, Precautionary Statements, Directions For Use, and Storage and Disposal.

Manufactured For:

Sharda USA LLC 

7217 Lancaster Pike, Suite A  
Hockessin, Delaware 19707

EPA Reg. No. 83529-202

EPA Est. No. **CS** 70815-GA-001; **MA** 83411-MN-001;

**MC** 89332-GA-001; **SC** 39578-TX-001; **TX** 07401-TX-001

The EPA Establishment Number is identified by the circled letters above that match the first two letters in the batch number.

## Net Contents: 1 Gallon

<b>FIRST AID</b>	
<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15 - 20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF IN EYES:</b>	<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 15 minutes, then continue rinsing.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF INHALED:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>HOTLINE NUMBER</b>	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. For emergency information concerning this product, call your poison control center at <b>1-800-222-1222</b> .	
<b>NOTE TO PHYSICIAN</b>	
No specific antidote is available. Treat patient symptomatically.	

## **PRECAUTIONARY STATEMENTS**

### **HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

#### **CAUTION**

Harmful if swallowed. Harmful if absorbed through skin. Harmful if inhaled. Causes moderate eye irritation. Avoid contact with eyes, on skin, or clothing. Prolonged or frequent repeated skin contact may cause allergic reactions in some individuals.

#### **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

**Applicators, mixers, loaders, and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of barrier laminate, butyl rubber  $\geq$  14 mils, nitrile rubber  $\geq$  14 mils, neoprene rubber  $\geq$  14 mils, polyvinyl chloride (PVC)  $\geq$  14 mils, or Viton<sup>®</sup>  $\geq$  14 mils
- Shoes plus socks

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.

## ENGINEERING CONTROLS STATEMENT

When handlers use closed systems or enclosed cabs 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.

### USER SAFETY RECOMMENDATIONS

#### Users should:

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

### ENVIRONMENTAL HAZARDS

Avoid contamination of surface water through spray drift. Do not contaminate water when disposing of equipment washwater or rinsate. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high-water mark. This product is toxic to honeybees. **DO NOT** apply from time of bloom until petal fall.

#### Groundwater Advisory

Degradates of spirodiclofen (especially spirodiclofen-enol) have properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

#### Surface Water Advisory and Runoff Management

This product may impact surface water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application. A level well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of spirodiclofen from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in any manner inconsistent with its labeling. Read the entire label before using this product.

This product can only be used in accordance with the Directions for Use on this label. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulations.

#### ENDANGERED SPECIES ADVISORY

The use of any pesticide in a manner that may kill or otherwise harm endangered species or adversely modify their habitat is a violation of Federal law.

### 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 **12 hours** for all crops following application.

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:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves
- Shoes plus socks

### PRODUCT INFORMATION

**Spine** is a suspension concentrate formulation that works on mite eggs, all nymphal stages, and adult females by contact of the active. Treatments made of this formulation must be made as a preventive application or timed to correspond with early threshold level in developing mite population. Make applications of **Spine** only through properly calibrated ground application equipment except where otherwise stated within crop-specific section below. For pest control, complete coverage of all plant parts is required. The presence of physical barriers including, but not limited to, excessive dust, sun block agents, and/or sooty-mold can interfere with the binding of **Spine** to target plant parts and may require higher spray volumes to achieve penetration of these barriers.

#### RESTRICTIONS:

- **DO NOT** apply this product within 75 feet of any well used for drinking water.
- **DO NOT** make applications of **Spine** through any type of irrigation system.
- **DO NOT** make applications of **Spine** in enclosed structures such as greenhouses or plant houses.

### PROTECTION OF POLLINATORS

**DO NOT** apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area. Following best management practices can help reduce risk to pollinators. Examples of best management practices include applying pesticides in the evening and at night when pollinators are not foraging and checking to confirm hive locations before spraying. For additional resources on pollinator best management practices, visit <https://www.epa.gov/pollinator-protection/find-best-management-practices-protect-pollinators>. Managed pollinator protection plans are developed by states/tribes to promote communication between growers, landowners, farmers, beekeepers, pesticide users, and other pest management professionals to reduce exposure of bees to pesticides. If available, visit state plans for additional information on how to protect pollinators.

## INSECTICIDE/ACARICIDE RESISTANCE MANAGEMENT

For resistance management, **Spine** contains a Group 23 acaricide/insecticide. Any insect/mite population may contain individuals naturally resistant to **Spine** and other Group 23 acaricides/insecticides. The resistant individuals may dominate the insect/mite population if this group of acaricides/insecticides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed.

### To delay acaricide/insecticide resistance, take the following steps:

- Rotate the use of **Spine** or other Group 23 acaricides/insecticides within a growing season, or among growing seasons, with different groups that control the same pests.
- Use tank mixtures with acaricides/insecticides from a different group that are equally effective on the target pest when such use is permitted. Do not rely on the same mixture repeatedly for the same pest population. Consider any known cross-resistance issues (for the targeted pests) between the individual components of a mixture. In addition, consider the following recommendations provided by the Insecticide Resistance Action Committee (IRAC):
  - Individual insecticides selected for use in mixtures should be highly effective and be applied at the rates at which they are individually registered for use against the target species.
  - Mixtures with components having the same IRAC mode of action classification are not recommended for insect resistance management.
  - When using mixtures, consider any known cross-resistance issues between the individual components for the targeted pest(s).
  - Mixtures become less effective if resistance is already developing to one or both active ingredients, but they may still provide pest management benefits.
  - The insect resistance management benefits of an insecticide mixture are greatest if the two components have similar periods of residual insecticidal activity. Mixtures of insecticides with unequal periods of residual insecticide activity may offer an insect resistance management benefit only for the period where both insecticides are active.
- Adopt an integrated pest management program (IPM) for acaricides/insecticides use that includes scouting, uses historical information related to pesticide use, crop rotation, record keeping, and which considers cultural, biological and other chemical control practices.
- Monitor after application for unexpected target pest survival. If the level of survival suggests the presence of resistance, consult with your local university specialist or certified pest control advisor.

Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for the specific site and pest problems in your area. For further information or to report suspected resistance, contact a Sharda USA LLC company representative.

### MANDATORY SPRAY DRIFT MANAGEMENT

The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator is responsible for considering all of these factors when making application decisions. Avoiding spray drift is the responsibility of the applicator.

#### Aerial Applications:

- **DO NOT** release spray at a height greater than 10 feet above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- Applicators are required to select nozzle and pressure that deliver medium or coarser droplets (ASABE S641).
- **DO NOT** apply when wind speeds exceed 15 mph at the application site. If the wind speed is greater than 10 mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- If the windspeed is 10 miles per hour or less, applicators must use 1/2 swath displacement upwind at the downwind edge of the field. When the windspeed is between 11 - 15 miles per hour, applicators must use 3/4 swath displacement upwind at the downwind edge of the field.
- **DO NOT** apply during temperature inversions.

#### Airblast Applications:

- Sprays must be directed into the canopy.
- **DO NOT** apply when wind speeds exceed 15 miles per hour at the application site.
- User must turn off outward pointing nozzles at row ends and when spraying outer row.
- **DO NOT** apply during temperature inversions.

#### Ground Boom Applications:

- **DO NOT** release spray at a height greater than 4 feet above the ground or crop canopy.
- Applicators are required to select nozzle and pressure that deliver medium or coarser droplets (ASABE S572).
- **DO NOT** apply when wind speeds exceed 15 mph at the application site.
- **DO NOT** apply during temperature inversions.

### 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.

### **Controlling Droplet Size - Aircraft**

**Adjust Nozzles** - nozzles should be oriented parallel with the airflow in flight.

### **BOOM HEIGHT - Ground Boom**

For ground equipment, the boom should remain level with the crop and have minimal bounce.

### **RELEASE HEIGHT - Aircraft**

Higher release heights increase the potential for spray drift.

### **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.

### **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 upward and rapidly dissipates indicates good vertical air mixing.

### **WIND**

Drift potential generally increases with wind speed. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift. Boomless Ground Applications: Setting nozzles at the lowest effective height will help to reduce the potential for spray drift. Handheld Technology Applications: cautions to minimize spray drift.

### **COMPATIBILITY/MIXING/ORDER-OF-MIXING**

**Spine** is physically and biologically compatible with many registered pesticides and fertilizers or micronutrients. Contact your supplier first for advice when considering mixing **Spine** with other pesticides, or other additives. For further information, contact your local Sharda USA LLC representative. Conduct a physical compatibility test if supplier and Sharda USA LLC representative have no experience with the combination you are considering. To determine physical compatibility, add the correct proportions of each chemical with the same proportion of water, as will be present in the chemical supply tank, into a suitable container, mix thoroughly and allow to stand for five minutes. If the combination remains mixed, or can be readily re-mixed, the mixture is considered physically compatible.

**Spine** may be used with other EPA-registered pesticides, fertilizers, and micronutrients. The proper mixing procedure for **Spine** alone or in tank mix combinations with other pesticides is:

1. Fill the spray tank 1/4 to 1/3 full with clean water;
2. While recirculating and with the agitator running, add any products in PVA bags (see below **Note**). Allow time for thorough mixing;
3. Continue to fill spray tank with water until 1/2 full;
4. Add any other wettable powder (WP) or wettable granules (WG) products;
5. Add the required amount of **Spine**, and any other "flowable" (FL or SC) type products;
6. Allow enough time for thorough mixing of each product added to tank;
7. If applicable, add any remaining tank mix components: emulsifiable concentrates (EC), fertilizers, and micronutrients; and
8. Fill spray tank to desired level and maintain constant agitation to ensure uniformity of spray mixture.

**Important:** Do not use PVA packets in a tank mix with products that contain boron or release free chlorine. The resultant reaction of PVA and boron or free chlorine is a plastic that is not soluble in water or solvents.

#### USE DIRECTIONS

**Important:** Removable chemical extraction probes (also known as "stingers") used in suction/extraction systems must be rinsed within the pesticide containers prior to removal.

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#### TREE FRUIT, TREE NUTS, GRAPE, AND HOP

Make application of the stated dosage of **Spine** as a dilute or concentrate spray at the early threshold for the target mite pest or early in the infestation as the population begins to develop. Preventative applications are permitted where required for management of specific mite problems but generally require the higher dosage specified within the crop specific sections for optimal residual control. No sooner than 7 days following application can the performance be evaluated. Degree of control or suppression of additional labeled pests will be determined, in part, by the stage of pest development at treatment and infestation level of those pests. Application rates stated within this label are based on full-size mature trees and vines. Use higher rates for moderate to heavy mite pressure or where longer residual control is desired. Lower rates are typically adequate on smaller trees/vines, or for low to moderate mite pressure but require careful scouting. The lower rates will typically provide shorter residual control than higher rates. Make applications with adequate spray volume to ensure thorough and uniform coverage of target plant parts.



**Avocado, Black Sapote, Canistel, Mamey Sapote, Mango, Papaya, Sapidilla, and Star Apple**

Pests Controlled	Rate - Fl. Oz. per Acre	Application Instructions
Avocado Brown Mite Avocado Red Mite Broad Mite Carmine Spider Mite Citrus Red Mite Flat Mite (Black and Red) Mango Spider Mite Papaya Leaf Edgeroller Mite Persea Mite Six-Spotted Mite Texas Citrus Mite Two-Spotted Spider Mite	17.3 - 19.1 (0.28 - 0.31 lb. a.i.)	<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 2 days</li> <li>• Do not make an application of more than 19.1 fl. oz. (0.31 lb. a.i.) of <b>Spine</b> per acre per calendar year.</li> <li>• Do not make an application of more than 19.1 fl. oz. (0.31 lb. a.i.) of <b>Spine</b> per acre in a single application.</li> <li>• Do not apply more than 1 application per calendar year.</li> <li>• Minimum application volume (per acre): 50 gals. – ground, 50 gals. – aerial (avocado only).</li> <li>• Not for use on avocado, black sapote, canistel, mamey sapote, mango, papaya, sapidilla, or star apple in the State of NY.</li> </ul>

**Citrus**

**Crops of Crop Group 10:** Orange (Sweet and Sour), Grapefruit, Lemon, Lime, Calamondin, Citrus Citron, Citrus Hybrids (Includes Chironja, Tangelo, And Tangor), Kumquat, Mandarin (Tangerine), Pummelo, Satsuma Mandarin

Pests Controlled	Rate - Fl. Oz. per Acre	Application Instructions
Broad Mite Citrus Flat Mite (False Spider Mite) Citrus Red Mite Citrus Rust Mite (Silver Mite) Pink Citrus Rust Mite Six-Spotted Mite Texas Citrus Mite Two-Spotted Spider Mite Yuma Spider Mite	<p style="text-align: center;"><i>Without</i></p> horticultural spray oil 11.6 - 19.1 (0.188 - 0.31 lb. a.i.) <p style="text-align: center;"><i>With</i></p> horticultural spray oil 17.3 - 19.1 (0.28 - 0.31 lb. a.i.)	<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 7 days</li> <li>• Do not make an application of more than 19.1 fl. oz. (0.31 lb. a.i.) of <b>Spine</b> per acre per calendar year.</li> <li>• Do not make an application of more than 19.1 fl. oz. (0.31 lb. a.i.) of <b>Spine</b> per acre in a single application.</li> <li>• Do not apply more than 1 application per calendar year.</li> <li>• Minimum application volume (per acre): 100 gals. by conventional ground airblast sprayer. If using high air velocity, low volume, or air curtain sprayers, utilize in no less than 30 gals., insuring complete and uniform coverage of fruit and foliage.</li> <li>• For all citrus do not make application from time of bloom until petal fall is complete.</li> <li>• Not for use on citrus in the State of NY.</li> </ul>

## Grape

American Bunch Grape, Muscadine Grape, and Vinifera Grape

Pests Controlled	Rate - Fl. Oz. per Acre	Application Instructions
European Red Mite Grape erineum mite (Blister Mite) Pacific Spider Mite Two-Spotted Spider Mite Willamette Spider mite	15.4 - 32.7 (0.25 - 0.53 lb. a.i.)	<b>Restrictions:</b> <ul style="list-style-type: none"><li>• Pre-Harvest Interval (PHI): 14 days</li><li>• Do not make an application of more than 32.7 fl. oz. (0.53 lb. a.i.) of <b>Spine</b> per acre per calendar year.</li><li>• Do not make an application of more than 32.7 fl. oz. (0.53 lb. a.i.) of <b>Spine</b> per acre in a single application.</li><li>• Do not apply more than 1 application per calendar year.</li><li>• Minimum application volume (per acre): 50 gals. – ground application only.</li><li>• Use higher dosage when mite population density is extreme and environmental conditions favor continued, prolonged infestation pressure.</li><li>• Not for use on grapes in the State of NY.</li></ul>

## Hop

Pest Controlled	Rate - Fl. Oz. per Acre	Application Instructions
Two-Spotted Spider Mite	17.3 - 23.8 (0.28 - 0.386 lb. a.i.)	<b>Restrictions:</b> <ul style="list-style-type: none"><li>• Pre-Harvest Interval (PHI): 14 days</li><li>• Do not make an application of more than 23.8 fl. oz. (0.386 lb. a.i.) of <b>Spine</b> per acre per calendar year.</li><li>• Do not make an application of more than 23.8 fl. oz. (0.386 lb. a.i.) of <b>Spine</b> per acre in a single application.</li><li>• Do not apply more than 1 application per calendar year.</li><li>• Minimum application volume (per acre): 50 gals. by conventional ground airblast sprayer.</li><li>• Not for use on hops in the State of NY.</li></ul>

## Pome Fruit

**Crops of Crop Group 11:** Apple, Crabapple, Loquat, Mayhaw, Pear, Oriental Pear, Quince

Pests Controlled	Rate - Fl. Oz. per Acre	Application Instructions
Apple Rust Mite European Red Mite McDaniel Spider Mite Pacific Spider Mite Pear Rust Mite Two-Spotted Spider Mite	15.4 - 17.3 (0.25 - 0.28 lb. a.i.)	<b>Restrictions:</b> <ul style="list-style-type: none"><li>• Pre-Harvest Interval (PHI): 7 days</li><li>• Do not make an application of more than 17.3 fl. oz. (0.28 lb. a.i.) of <b>Spine</b> per acre per calendar year.</li><li>• Do not make an application of more than 17.3 fl. oz. (0.28 lb. a.i.) of <b>Spine</b> per acre in a single application.</li><li>• Do not apply more than 1 application per calendar year.</li><li>• Minimum application volume (per acre): 100 gals. – ground application only.</li><li>• Not for use on pome fruit in the State of NY.</li></ul>

## Stone Fruit

**Crops of Crop Group 12:** Apricot, Cherry (sweet and tart), Nectarine, Peach, Plum (includes Chickasaw, Damson, and Japanese), Plumcot, Prune (fresh and dried)

Pests Controlled	Rate - Fl. Oz. per Acre	Application Instructions
Brown Mite European Red Mite Pacific Spider Mite Peach Silver Mite Two-Spotted Spider Mite	15.4 - 17.3 (0.25 - 0.28 lb. a.i.)	<b>Restrictions:</b> <ul style="list-style-type: none"><li>• Pre-Harvest Interval (PHI): 7 days</li><li>• Do not make an application of more than 17.3 fl. oz. (0.28 lb. a.i.) of <b>Spine</b> per acre per calendar year.</li><li>• Do not make an application of more than 17.3 fl. oz. (0.28 lb. a.i.) of <b>Spine</b> per acre in a single application.</li><li>• Do not apply more than 1 application per calendar year.</li><li>• Minimum application volume (per acre): 50 gals. – ground application only.</li><li>• Not for use on stone fruit in the State of NY.</li></ul>

## Tree Nuts

**Crops of Crop Group 14:** Almond, Beechnut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Filbert, Hickory nut, Macadamia nut, Pecan, Pistachio, Walnut (black and English)

Pests Controlled	Rate - Fl. Oz. per Acre	Application Instructions
Pecan Leaf Scorch Mite	13.5 - 17.3 (0.22 - 0.28 lb. a.i.)	<b>Restrictions:</b> <ul style="list-style-type: none"><li>• Pre-Harvest Interval (PHI): 7 days</li><li>• Do not make an application of more than 32.7 fl. oz. (0.53 lb. a.i.) of <b>Spine</b> per acre per calendar year.</li><li>• Do not make an application of more than 32.7 fl. oz. (0.53 lb. a.i.) of <b>Spine</b> per acre in a single application.</li><li>• Do not apply more than 1 application per calendar year.</li><li>• Minimum application volume (per acre): 100 gals. – ground application only.</li><li>• Use higher dosage when mite population density is extreme and environmental conditions favor continued, prolonged infestation pressure.</li><li>• Not for use on tree nuts in the State of NY.</li></ul>
Brown Mite European Red Mite Pacific Spider Mite Peach Silver Mite Two-Spotted Spider Mite	15.4 - 32.7 (0.25 - 0.53 lb. a.i.)	
<b>Pest Suppressed</b>	<b>Rate - Fl. Oz. per Acre</b>	
San Jose Scale	27.2 - 32.7 (0.44 - 0.53 lb. a.i.)	

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### OTHER CROPS

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Make application of the stated dosage of **Spine** as a dilute or concentrate spray at early threshold for the target mite pest or early in the infestation as the population begins to develop. Preventative applications are permitted where required for management of specific mite problems but generally require the higher dosage specified within the crop specific sections for optimal residual control. No sooner than 7 days following application can the performance be evaluated. Degree of control or suppression of additional labeled pests will be determined, in part, by the stage of pest development at treatment and infestation level of those pests.

Application rates stated within this label are based on full-size mature trees and vines. Use higher rates for moderate to heavy mite pressure or where longer residual control is desired. Lower rates are typically adequate on smaller trees/vines, or for low to moderate mite pressure but require careful scouting. The lower rates will typically provide shorter residual control than higher rates. Make application with adequate spray volume to ensure thorough and uniform coverage of target plant parts.

### Christmas Tree Plantations

Pests Controlled	Rate - Fl. Oz. per Acre	Application Instructions
Hemlock Rust Mite (Eriophyid Rust Mite and Needle Sheath Mite) Spruce Spider Mite Two-Spotted Spider Mite	17.3 - 23.8 (0.28 - 0.386 lb. a.i.)	<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Do not make an application of more than 23.8 fl. oz. (0.386 lb. a.i.) of <b>Spine</b> per acre per calendar year.</li> <li>• Do not make an application of more than 23.8 fl. oz. (0.386 lb. a.i.) of <b>Spine</b> per acre in a single application.</li> <li>• Do not apply more than 1 application per calendar year.</li> <li>• Minimum application volume (per acre): 20 gals. – ground, 10 gals. – aerial application.</li> <li>• Not for use on Christmas trees in the State of NY.</li> </ul>

### PEST NAMES WITHIN THIS LABEL

Common Name	Scientific Name	Common Name	Scientific Name
Apple Rust Mite	<i>Aculus schlechtendali</i>	Peach Silver Mite	<i>Aculus cornutus</i>
Broad Mite	<i>Polyphagotarsonemus latus</i>	Pear Rust Mite	<i>Epitrimerus pyri</i>
Brown Mite	<i>Bryobia rubrioculus</i>	Pecan Leaf Scorch Mite	<i>Eotetranychus hicoriae</i>
Citrus Flat Mite (False Spider Mite)	<i>Brevipalpus lewisi</i>	Pink Citrus Rust Mite	<i>Aculops pelekassi</i>
Citrus Red Mite	<i>Panonychus citri</i>	San Jose Scale	<i>Quadraspidiotus perniciosus</i>
Citrus Rust Mite (Silver Mite)	<i>Phyllocoptruta oleivora</i>	Sixspotted Mite	<i>Eotetranychus sexmaculatus</i>
European Red Mite	<i>Panonychus ulmi</i>	Spruce Spider Mite	<i>Oligonychus ununguis</i>
Grape Erineum Mite (Blister Mite)	<i>Colomerus vitis</i>	Texas Citrus Mite	<i>Eutetranychus banksi</i>
Hemlock Rust Mite	<i>Nalepella tsugifoliae</i>	Two-spotted Spider Mite	<i>Tetranychus urticae</i>
McDaniel Spider Mite	<i>Tetranychus mcdanieli</i>	Willamette Mite	<i>Eotetranychus willametti</i>
Pacific Spider Mite	<i>Tetranychus pacificus</i>	Yuma Spider Mite	<i>Eotetranychus yumensis</i>

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** This product is packaged in polyethylene containers. Do not allow product or containers to freeze. Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Handle and open container in a manner as to prevent spillage. If container is leaking, invert to prevent leakage. If the container is leaking or material is spilled for any reason or cause, carefully dam up spilled material to prevent runoff. Refer to **PRECAUTIONARY STATEMENTS** on label for hazards associated with the handling of this material. Do not walk through spilled material. Absorb spilled material with absorbing type compounds and dispose of as directed for pesticides below. In spill or leak incidents, keep unauthorized people away.

**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. Improper disposal of unused pesticide, spray mixture, or rinse water is a violation of Federal law. If these wastes cannot be used according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance in proper disposal methods.

### CONTAINER HANDLING:

**Less Than or Equal to 5 Gallons:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. 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. Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill or by incineration.

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER!**

### CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather, presence of other materials or other influencing factors in the use of the product, which are beyond the control of Sharda USA LLC or Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold Sharda USA LLC and Seller harmless for any claims relating to such factors.

Sharda USA LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under conditions not reasonably foreseeable to or beyond the control of Seller or Sharda USA LLC and Buyer and User assume the risk of any such use. To the extent consistent with applicable law, SHARDA USA LLC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

To the extent consistent with applicable law, neither Sharda USA LLC nor Seller shall be liable for any incidental, consequential, or special damages resulting from the use or handling of this product. **TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SHARDA USA LLC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SHARDA USA LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

Sharda USA LLC and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of Sharda USA LLC.

All trademarks are the property of their respective owners.

**NOTES**



SPIRODICLOFEN GROUP 23 INSECTICIDE

# Spine

For Use on Avocado, Black Sapote, Canistel, Citrus, Grapes, Hop, Mango, Mamey Sapote, Papaya, Pome Fruit, Sapodilla, Star Apple, Stone Fruit, Tree Nuts, and Christmas Tree Plantations.

<b>ACTIVE INGREDIENT:</b>	WT. BY %
Spirodiclofen: 3-(2, 4-dichlorophenyl)-2-oxo-1-oxaspiro [4.5] dec-3-en-4-yl 2, 2-dimethylbutanoate	23.5%
<b>OTHER INGREDIENTS:</b>	76.5%
<b>TOTAL:</b>	100.0%

Contains 2.11 lbs. active ingredient per gallon or 253 grams per liter.

## KEEP OUT OF REACH OF CHILDREN CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

**FIRST AID - IF SWALLOWED:** • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person. **IF ON SKIN OR CLOTHING:** • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 - 20 minutes. • Call a poison control center or doctor for treatment advice. **IF IN EYES:** • Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. • Remove contact lenses, if present, after the first 15 minutes, then continue rinsing. • 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. **HOTLINE NUMBER** - Have the product container or label with you when calling a poison control center or doctor or going for treatment. For emergency information concerning this product, call your poison control center at 1-800-222-1222. **NOTE TO PHYSICIAN** - No specific antidote is available. Treat patient symptomatically.

**PRECAUTIONARY STATEMENTS - HAZARDS TO HUMANS AND DOMESTIC ANIMALS - CAUTION** - Harmful if swallowed. Harmful if absorbed through skin. Harmful if inhaled. Causes moderate eye irritation. Avoid contact with eyes, on skin, or clothing. Prolonged or frequent repeated skin contact may cause allergic reactions in some individuals. **ENVIRONMENTAL HAZARDS** - Avoid contamination of surface water through spray drift. Do not contaminate water when disposing of equipment washwater or rinsate. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high-water mark. This product is toxic to honeybees. **DO NOT** apply from time of bloom until petal fall.

**Groundwater Advisory** - Degradates of spirodiclofen (especially spirodiclofen-enol) have properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow. **Surface Water Advisory and Runoff Management** - This product may impact surface water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application. A level well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of spirodiclofen from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

**STORAGE AND DISPOSAL** - Do not contaminate water, food, or feed by storage or disposal. **PESTICIDE STORAGE:** This product is packaged in polyethylene containers. Do not allow product or containers to freeze. Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Handle and open container in a manner so as to prevent spillage. If container is leaking, invert to prevent leakage. If the container is leaking or material is spilled for any reason or cause, carefully dam up spilled material to prevent runoff. Refer to **PRECAUTIONARY STATEMENTS** on label for hazards associated with the handling of this material. Do not walk through spilled material. Absorb spilled material with absorbing type compounds and dispose of as directed for pesticides below. In spill or leak incidents, keep unauthorized people away. **PESTICIDE DISPOSAL:** Pesticide wastes are toxic. Improper disposal of unused pesticide, spray mixture, or rinse water is a violation of Federal law. If these wastes cannot be used according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance in proper disposal methods. **CONTAINER HANDLING: Less Than or Equal to 5 Gallons:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. 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 and disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill or by incineration. **CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER!**

See label booklet for additional Precautionary Statements and Directions For Use.

### Manufactured For:

Sharda USA LLC, 7217 Lancaster Pike, Suite A, Hockessin, Delaware 19707

EPA Reg. No. 83529-202

EPA Est. No. **CS** 70815-GA-001; **MA** 83411-MN-001;

**NC** 89332-GA-001; **SC** 39578-TX-001; **TX** 07401-TX-001

The EPA Establishment Number is identified by the circled letters above that match the first two letters in the batch number.

Net Contents: 1 Gallon

OPEN HERE