



TwinGuard™ Insecticide

with ISOCLAST™ ACTIVE

GROUP	4C	5	INSECTICIDES
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For control of listed insects on pome fruit, stone fruit and potatoes

COMMERCIAL

AGRICULTURAL

READ THE LABEL AND BOOKLET BEFORE USING
KEEP OUT OF REACH OF CHILDREN

ACTIVE INGREDIENT: sulfoxaflor 20.0 %
spinetoram 20.0 %
Water dispersible granules

REGISTRATION NO. 31442 PEST CONTROL PRODUCTS ACT

POTENTIAL SKIN SENSITIZER

NET CONTENTS: 1 kg - bulk

Corteva Agriscience Canada Company
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Calgary, Alberta
T2P 1M4
1-800-667-3852

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PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN

Potential skin sensitizer.

Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, cottages, schools, and recreation areas is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

DO NOT use in greenhouses, shadehouses, or lathouses. DO NOT apply through any irrigation system.

PROTECTIVE CLOTHING AND EQUIPMENT

Wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes during mixing, loading, application, clean-up and repair. In addition, when handling more than 90kg of product per day, mixers and loaders must wear a respirator with a NIOSH-approved organic-vapour-removing cartridge with a prefilter approved for pesticides, or a NIOSH-approved canister approved for pesticides. Gloves are not required during application within a closed cab or cockpit

FIRST AID

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

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

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

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

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

TOXICOLOGICAL INFORMATION

No specific antidote. Employ supportive care. Treatment should be based on judgement of the physician in response to reactions of the patient.

AGRICULTURAL CHEMICAL

Do not ship or store with food, feeds, drugs or clothing.

ENVIRONMENTAL HAZARDS

Toxic to certain beneficial insects. Minimize spray drift to reduce harmful effects on beneficial insects in habitats next to the application site such as hedgerows and woodland. Toxic to bees exposed to direct treatment, drift, or residues on flowering crops or weeds. Minimize spray drift to reduce harmful effects on bees in habitats close to the application site. Apply early in the morning or late in the evening when bees are not active. Consult the crop use directions for instructions related to timing of applications.

TOXIC to small wild mammals.

TOXIC to non-target terrestrial plants. Observe buffer zones specified under DIRECTIONS FOR USE.

The use of this chemical may result in contamination of groundwater particularly in areas where soils are permeable (e.g. sandy soil) and/or the depth to the water table is shallow. To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay. Avoid application when heavy rain is forecast. Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

STORAGE

Avoid freezing. Store in original container in a secured dry storage area. Prevent cross-contamination with other pesticides and fertilizers. To prevent contamination store this product away from food and feed.

DISPOSAL

Recyclable Containers:

Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

Returnable Containers:

Do not reuse this container for any purpose. For disposal, this empty container may be returned to the point of purchase (distributor/dealer).

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

DIRECTIONS FOR USE

GENERAL INFORMATION

TwinGuard Insecticide can be used to control listed insects on pome fruit, stone fruit and potatoes.

GENERAL USE PRECAUTIONS

READ ALL DIRECTIONS CAREFULLY BEFORE APPLYING. FAILURE TO FOLLOW LABEL INSTRUCTIONS MAY RESULT IN ERRATIC INSECT CONTROL OR CROP DAMAGE.

As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

Crops may only be planted to treated fields 30 days following treatment

Restricted Entry Interval (REI)

Do not enter or allow entry into treated areas during the restricted-entry interval (REI) of 12 hours.

Tank Mixtures

In some cases, tank mixing a pest control product with another pest control product or a fertilizer can result in biological effects that could include, but are not limited to: reduced pest efficacy or increased host crop injury. The user should contact Corteva Agriscience Canada Company at 1-800-667-3852 or www.corteva.ca for information before mixing any pesticide or fertilizer that is not specifically recommended on this label. The user assumes the risk of losses that result from the use of tank mixes that do not appear on this label or that are not specifically recommended by Corteva Agriscience Canada Company.

Application Instructions

Carefully read, understand and follow label use rates and restrictions. Apply TwinGuard Insecticide as a foliar spray or aerial application (potatoes only) at the rate indicated for target pest. The low rates may be used for light infestations of the target pests and the higher rates for moderate to heavy infestations. Apply the amount specified with properly calibrated ground spray equipment. Proper application techniques help ensure thorough spray coverage and correct dosage for optimum insect control.

Mixing Instructions

Fill the spray tank with water to about 1/2 of the required spray volume. Start agitation and add the required amount of TwinGuard Insecticide. Continue agitation while mixing and filling the spray tank to the required spray volume. Maintain sufficient agitation during application to ensure uniformity of the spray mix. Do not allow water or spray mixture to back-siphon into the water source.

Field Sprayer Application

DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply with spray droplets smaller than the American Society of Agricultural and Biological Engineers (ASABE S572.1) fine classification. Boom height must be 60 cm or less above the crop or ground. Apply in sufficient spray solution to ensure thorough coverage of plant foliage. Use a minimum of 100 litres of water per hectare for field sprayer applications.

Airblast application

DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT direct spray above plants to be treated. Turn off outward pointing nozzles at row ends and outer rows. DO NOT apply when wind speed is greater than 16 km/h at the application site as measured outside of the treatment area on the upwind side. Apply in sufficient spray solution to ensure thorough coverage of plant foliage. Use a minimum of 500 litres of water per hectare for airblast applications.

Aerial Application (Potatoes Only)

DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply when wind speed is greater than 16 km/h at flying height at the site of application. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE S572.1) fine classification. To reduce drift caused by turbulent wingtip vortices, the nozzle distribution along the spray boom length MUST NOT exceed 65% of the wing- or rotorspan.

Apply only by fixed-wing or rotary aircraft equipment which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label.

Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate recommended for aerial application on this label. **Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.**

Apply in a minimum of 30 litres per hectare. Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices or equivalent electronic positioning systems (GPS).

Use Precautions

Apply only when meteorological conditions at the treatment site allow for complete and even crop coverage. Apply only under conditions of good practice specific to aerial application as outlined in the *National Aerial Pesticide Application Manual*, developed by the Federal/Provincial/Territorial Committee on Pest Management and Pesticides.

Operator Precautions

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.

It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

The field crew and mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent label precautions in cases where the operator precautions exceed the generic label recommendations on the existing ground boom label.

All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

Product Specific Precautions

Read and understand the entire label before opening this product. If you have questions, call the manufacturer at 1-800-667-3852 or obtain technical advice from the distributor or your provincial agricultural representative.

See specific crop instructions for additional precautions and recommended application rates. Where rate ranges appear, use the high rate when pest populations are high or for extended intervals.

POME FRUITS (Crop Group 11-09): apple, Asian pear, azarole, Chinese quince, crabapple, Japanese quince, mayhaw, medlar, pear, quince, tejocote.

Observe a minimum treatment interval of 7 days, unless otherwise stated, and a preharvest interval of 7 days. Do not make more than 2 applications per growing season. DO NOT apply this product during crop flowering period or when flowering weeds are present in the treatment area. DO NOT APPLY BY AIR.

Target Pest	Application Rate Grams of Product Per Hectare	Application Timing
Aphids – green apple aphid, spirea aphid, rosy apple aphid	250	Monitor the crop on a regular basis. Consult local authorities to determine threshold numbers and the most effective time to apply control measures in your local area. Thorough coverage is essential for good control. For San Jose scale, apply when crawlers are active.
Mullein bug (<i>Campylomma verbasci</i>)	500	
San Jose scale	250-500	
Tarnished plant bug	360	
Woolly apple aphid	500	For control of woolly apple aphid do not make applications less than 14 days apart.
Codling Moth Oriental Fruit Moth	500	For the control of each generation, apply at first egg hatch based on pheromone trap catches and degree days after biofix dates. These pests must be controlled before the larvae penetrate the fruit so early timing is critical. Repeat at 14 day intervals to maintain control depending on pest pressure.
Obliquebanded & Threelined (<i>Pandemis</i>) Leafrollers	250-500	For the control of the over wintering (spring) generation, apply when larvae have emerged and are actively feeding but before they roll up in the leaves. Under high insect pressure, an application timed to target the overwintering generation is recommended to reduce summer populations.

		For control of the summer generation, apply at first egg hatch as determined by monitoring adult moth flights. Repeat in 14 days if monitoring of populations indicates a second application is required. Use the higher rate under high pest pressure and/or larger larvae.
Spotted & Western Tentiform Leafminers	250-500	Apply at egg hatch as determined by monitoring or at the first sign of sap-feeding on the leaves to control leafminers. Use the higher rate under high pest pressure.
Apple Maggot	500	For the suppression of this pest, apply 7-10 days after the first apple maggot fly is caught on yellow scented sticky boards near or in the orchard. Repeat in 14 days if populations warrant.
Plum Curculio	500	For the suppression of this pest, monitor trees along the edge of the orchard or adjacent wild trees for the first sign of feeding damage after bloom. Repeat in 14 days if populations warrant.

STONE FRUITS (Crop Group 12-09): American plum, apricot, beach plum, black cherry, Canada plum, cherry plum, Chickasaw plum, chokecherry, Damson plum, Japanese apricot, Japanese plum, Klamath plum, Nanking cherry, nectarine, peach, plum, plumcot, prune plum, sloe, sweet cherry, tart cherry

Observe a minimum treatment interval of 7 days, unless stated otherwise, and a preharvest interval of 7 days. Do not make more than 2 applications per growing season. DO NOT apply this product during crop flowering period or when flowering weeds are present in the treatment area. DO NOT APPLY BY AIR.

Target Pest	Application Rate Grams of Product Per Hectare	Application Timing
Oriental Fruit Moth	500	For the control of each generation, apply at first egg hatch based on pheromone trap catches and degree days after biofix dates. These pests must be controlled before the larvae penetrate the fruit so early timing is critical. Repeat at 14 day intervals to maintain control depending on pest pressure.
Obliquebanded & Threelined (Pandemis) Leafrollers	250-500	For the control of the over wintering (spring) generation, apply when larvae have emerged and are actively feeding but before they roll up in the leaves. Under high insect pressure, an application timed to target the overwintering generation is recommended to reduce summer populations. For control of the summer generation, apply at first egg hatch as determined by monitoring adult moth flights. Repeat in 14 days if monitoring of populations indicates a second application is required. Use the higher rate under high pest pressure and/or larger larvae.
Aphids – black cherry aphid, green peach aphid, mealy plum aphid	250	Monitor the crop on a regular basis. Consult local authorities to determine threshold numbers and the most effective time to apply control measures in your local area. Thorough coverage is essential for good control.
San Jose scale	250-500	For San Jose scale, apply when crawlers are active

POTATOES

For aerial application, use a minimum spray volume of 30 L/ha. Refer to the section of the label entitled **Aerial Application** for detailed use instructions.

Observe a minimum treatment interval of 7 days, unless stated otherwise, and a pre-harvest interval of 7 days. Do not make more than 2 applications per growing season. For ground application, use a minimum spray volume of 100 L/ha.

Target Pest	Application Rate Grams of Product Per Hectare	Application Timing
Aphids	200	Monitor the crop on a regular basis. Consult local authorities to determine threshold numbers and the most effective time to apply control measures in your local area. Thorough coverage is essential for good control. Repeat application if monitoring indicates pest population is sufficiently high.
Tarnished plant bug	360	
Colorado Potato Beetle	200-300	Time the application for egg hatch or small larvae. Use the higher rate for higher pest pressure or for larger larvae. A repeat application in 7 to 14 days may be necessary depending on pest pressure.
European Corn Borer	200	Monitor egg laying and egg hatch to determine application timing. Time the application to coincide with peak egg hatch.
Leafhoppers	360	Monitor the crop on a regular basis for adults and nymphs . Early detection is important to avoid economic damage. Consult local authorities to determine threshold numbers. Apply as soon as leafhopper populations reach threshold numbers. Thorough coverage is essential for good control. Repeat application if monitoring indicates populations have again reached threshold numbers.

BUFFER ZONES

Spot treatments using hand-held equipment DO NOT require a buffer zone.

The buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands).

Method of Application	Crop		Buffer Zones (metres) Required for the Protection of:
			Terrestrial Habitat
Airblast	Pome Fruit, Stone Fruit	Early growth stage	1
		Late growth stage	1
Field sprayer	Potatoes		1
Aerial	Potatoes	Fixed wing	1
		Rotary wing	1

NOTE: Applicators may recalculate a site-specific buffer zone by combining information on current weather conditions and spray configuration for the following applications: all airblast applications, and for field and aerial applications which specify the following droplet size category wording on the product label: 'DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) [Fine or Medium or Coarse] classification.' To access the Buffer Zone Calculator, please visit the Pest Management Regulatory Agency web site.

RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, TwinGuard Insecticide contains both Group 4C and Group 5 insecticides. Any insect population may contain individuals naturally resistant to TwinGuard Insecticide and other Group 4C or Group 5 insecticides. The resistant individuals may dominate the insect population if these insecticides are used repeatedly in the same fields. Other resistance mechanisms that are not linked to site of action but are specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay insecticide resistance:

- Where possible, rotate the use of TwinGuard Insecticide or other Group 4C or Group 5 insecticides with different groups that control the same pests.
- Use tank mixtures with insecticides from a different group that is effective on the target pest when such use is permitted.
- Insecticide use should be based on an IPM program that includes scouting and record keeping, and considers cultural, biological and other chemical control practices.
- Monitor treated pest populations for resistance development.
- 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 Corteva Agriscience Canada Company at 1-800-667-3852 or at www.corteva.ca.

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

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Replaces: CN-31442-006-E

Specimen Notes:

Legal Entity change from DAS to Corteva