



STATE OF HAWAII
Department of Agriculture

ACCEPTED

LICENSE NO.

8282.16

GROUP 16 INSECTICIDE



ACTIVE INGREDIENT:

Buprofezin: 2- <i>tert</i> -butylimino-3-isopropyl-5-phenyl-1,3,5-thiadiazinan-4-one	70.00%
OTHER INGREDIENTS:	30.00%
TOTAL	100.00%

Contains 0.70 lbs. buprofezin per pound of product

EPA Reg. No. 71711-21 EPA Est. No. 67545-AZ-1 39578-TX-1
superscript corresponds with lot number

**KEEP OUT OF REACH
OF CHILDREN
CAUTION**

*See inside booklet for First Aid, Precautionary
Statements, and Directions for Use*

NET CONTENTS: 4.32 pounds

650516
02/15

**NICHINO
AMERICA®**

Nichino America, Inc.
4550 New Linden Hill Road
Wilmington, DE 19808

FIRST AID	
If inhaled	<ul style="list-style-type: none">• 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 center or doctor for further treatment advice.
If on skin or clothing	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15-20 minutes.• Remove contact lenses, if present, after the first 5 minutes; then continue rinsing eye.• Call a poison control center or doctor for treatment advice.
If swallowed	<ul style="list-style-type: none">• Call 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 the poison control center or doctor.• Do not give anything by mouth to an unconscious person.

(continued)

FIRST AID *(continued)*

HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-348-5832 for emergency medical treatment information. In case of fire or spills, information may be obtained by calling 1-800-424-9300.

NOTE TO PHYSICIAN: There is no specific antidote. All treatment should be based on observed signs and symptoms of distress in the patient. Overexposure to materials other than this product may have occurred.

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS
AND DOMESTIC ANIMALS
CAUTION**

Harmful if swallowed. Wash thoroughly with soap and water after handling. Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Harmful if inhaled. Avoid breathing spray mist. Remove contaminated clothing and wash before reuse.

**PERSONAL PROTECTIVE EQUIPMENT
(PPE)**

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should: Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

ENGINEERING CONTROLS STATEMENT

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

ENVIRONMENTAL HAZARDS

For terrestrial uses, 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 by cleaning of equipment or disposal of equipment washwaters.

DIRECTIONS FOR USE

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

Do not apply this product 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 regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls over long-sleeved shirt and long pants
- Waterproof gloves
- Socks and chemical-resistant footwear

GENERAL INFORMATION

CENTAUR® WDG insect growth regulator is effective against the nymphal stages of scales, psylla, mealybugs, planthoppers, and leafhoppers by inhibiting chitin biosynthesis, suppressing oviposition of adults, and reducing viability of eggs.

CENTAUR WDG insect growth regulator is not an adulticide. Evidence of activity may be slower than typical contact insecticides as treated susceptible pests may remain alive on the plant for 3-7 days; however, pests have stopped feeding, and any feeding damage during this time is typically very low.

CENTAUR WDG insect growth regulator is not disruptive to beneficial insects and mites.

CENTAUR WDG insect growth regulator is a contact insecticide, so good spray coverage is necessary. Apply by ground or air in sufficient water volume. Orient nozzles to assure good coverage. Use of higher volume of water will assure better coverage, especially under adverse conditions such as hot, dry weather and/or a dense canopy. The entire field should be treated. Apply when economic infestations occur based on local information.

CENTAUR WDG insect growth regulator is not for sale, sale into, distribution, and or use in Nassau and Suffolk counties of New York State.

INSECTS CONTROLLED

Mealybugs: Citrus mealybug, Comstock mealybug, Gill's mealybug, Grape mealybug, Longtailed mealybug, Mexican mealybug, Obscure mealybug, Striped mealybug, Vine mealybug

Leafhoppers and Planthoppers: Brown planthopper, Cherry leafhopper, Eastern grape leafhopper, Glassy-winged sharpshooter, Potato leafhopper, Variegated leafhopper, Western grape leafhopper, White apple leafhopper

Pear Psylla

Scales:

Armored Scales: Boisduval scale, Cactus scale, California red scale, Coconut scale, Fern scale, Florida red scale, Oystershell scale, San Jose scale

Margarodid Scale: Cottony cushion scale

Soft Scales: Barnacle scale, Black scale, Brown soft scale, Citricola scale, European fruit lecanium scale, False oleander scale, Frosted scale, Hemispherical scale, Indian wax scale and other wax scales, Tessellated scale, White peach scale

USE RESTRICTIONS

- Do not apply this product through any type of irrigation system.
- Crop Rotational Restrictions:

Crop	Plantback Timing
All crops registered for use with buprofezin	0 days following application
Cereal grains	30 days following application
All other crops	60 days following application

USE PRECAUTIONS

- Apply in a minimum finished spray volume of 5 gallons per acre by air.
- For gallonage per acre by ground, refer to Application Rate Chart.
- Phytotoxicity may occur in Asian pear varieties, normally limited to applications made prior to petal fall.

RESISTANCE MANAGEMENT

CENTAUR WDG insect growth regulator is classified by IRAC in Group 16 – chitin biosynthesis inhibitors and is not known to be cross-resistant to other classes of insecticides. However, insect pests are known to develop resistance to products used repeatedly. Because resistance development cannot be predicted, the use of this product should conform to resistance management strategies established for the crop and use area. Such strategies may include rotating with insecticides with different modes of action. Consult your local pest control advisor or extension office for details. If resistance to this product develops in your area, it may not provide adequate control. If you experience difficulty with control, and resistance is a likely cause, consult your local state university horticultural specialist or local agricultural authorities for the best alternative method of control. To preserve the usefulness of **CENTAUR WDG** insect growth regulator, do not make more than two consecutive applications. Prior to subsequent applications, use an alternative chemistry with a different mode of action. Always consult your local

crop advisor for the most appropriate control decision for your area. Resistance management strategies advise against applying rates lower than those recommended on the label.

APPLICATION DIRECTIONS

Applications should be made immediately after the spray solution is prepared. Thorough spray coverage is essential for effective control. Applications may be made with high or low volume spray equipment that provides thorough coverage of the plant. Apply with properly calibrated spray equipment. For best results, apply when pest populations are beginning to build, before reaching economic thresholds. Consult your local agricultural advisor or state cooperative extension service for recommendations.

MIXING DIRECTIONS

CENTAUR WDG Insect Growth Regulator Alone: Fill spray tank with $\frac{3}{4}$ of the amount of water needed for the intended application; and then turn on agitation. Pour recommended amount of product on the surface of water in the spray tank. Add the balance of the water to the spray tank with agitation running. Keep agitation running during filling and spraying operations. If spraying must be stopped before emptying the sprayer, resume agitation before spraying the remainder of the load.

CENTAUR WDG Insect Growth Regulator Tank

Mixtures: Follow all use directions as listed above under **CENTAUR WDG Insect Growth Regulator Alone** with the following exception: after the **CENTAUR WDG** insect growth regulator is thoroughly mixed and the tank is $\frac{3}{4}$ full, add the recommended amount of wettable powder, soluble powder, flowable, emulsifiable concentrate, or soluble liquid product, **while maintaining agitation**. If a spray additive is needed, add a liquid fertilizer, surfactant, or crop oil concentrate to the spray tank at this time. Then continue adding water to the tank to achieve the desired level, while maintaining agitation.

CENTAUR WDG Insect Growth Regulator Tank Mixtures with Products in Water-Soluble Packaging:

Follow all use directions as listed above under **CENTAUR WDG Insect Growth Regulator Alone** with the following exception: add the desired number of water-soluble bags to the tank (if allowed by their label instructions) at the same time the **CENTAUR WDG** insect growth regulator is added. **Note:** If using products in water soluble packaging, do not tank mix with products that contain boron, chromium, or other micronutrients.

SPRAY DRIFT REDUCTION MANAGEMENT

Do not apply when wind speed favors drift beyond the area intended for treatment. 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.

Importance of Droplet Size

An important factor influencing drift is droplet size. Small droplets (<150 - 200 microns) drift to a greater extent than large droplets. Within typical equipment specifications, applications should be made to deliver the largest droplet spectrum that provides sufficient control and coverage. Use only Medium or coarser spray nozzles (for ground and non-ULV aerial application) according to ASAE (S572) definition for standard nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size.

Ground Applications

Wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application. For ground boom applications, apply using a nozzle height of no more than 4 feet above the ground or crop canopy. For airblast applications, turn off outward pointing nozzles at row ends and when spraying the outer two (2) rows. To minimize spray loss over the top in orchard applications, spray must be directed into the canopy.

Aerial Applications

The spray boom should be mounted on the aircraft so as to minimize drift caused by wing tip vortices. The minimum practical boom length should be used, and must not exceed 75% of the wing span or 80% rotor diameter. Flight speed and nozzle orientation must be considered in determining droplet size.

Spray must be released at the lowest height consistent with pest control and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. When applications are made with a crosswind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind. Making applications at the lowest height that is safe reduces the exposure of the droplets to evaporation and wind.

Wind Speed Restrictions

Drift potential increases at wind velocities of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size, canopy and equipment specifications determine drift potential at any given wind speed. Only apply this product if the wind direction favors on-target deposition. Do not apply when wind velocity exceeds 15 mph and avoid gusty and windless conditions. Risk of exposure to sensitive aquatic areas can be reduced by avoiding applications when wind direction is toward the aquatic area.

Restrictions During Temperature Inversions

Do not make ground applications during temperature inversions. Drift potential is high during temperature inversions. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature inversions are characterized by stable air and increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by mist or ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source. Smoke that layers and moves laterally near the ground surface in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical mixing.

**APPLICATION RATE CHART FOR
CENTAUR WDG INSECT GROWTH REGULATOR**

Citrus Fruits (Crop Group 10) - For Florida and Texas Only

calamondin; citrus, citron; citrus hybrids (including chironja, tangelo, tangor); clementine; grapefruit; kumquat; lemon; lime; mandarin; orange, sour; orange, sweet; pummelo; satsuma mandarin; tangerine

Pest	Rate/Acre
Soft scales	34.5 to 46.0 oz/acre
Armored scales	(2.156 to 2.875 lbs/acre) (1.5 to 2.0 lbs ai/acre)

Notes and Use Restrictions

Limited to Florida and Texas Only

- Apply by ground application using a minimum of 250 gallons of water per acre.
- Do not make more than 2 applications per growing season.
- Allow at least 60 days between applications.
- Do not apply more than 92.0 oz (5.75 lbs) per acre per growing season.
- Preharvest Interval (PHI): 3 days

RECOMMENDATIONS

- Thorough coverage is essential for optimum control.
- Choice of water volume should be based on tree canopy size and location of the scale insect within the tree canopy.
- Applications should be made at the beginning of crawler hatch and emergence.

(continued)

**APPLICATION RATE CHART FOR
CENTAUR WDG INSECT GROWTH REGULATOR**
(continued)

Pears; Asian Pears	
Pest	Rate/Acre
Mealybugs	34.5 to 46.0 oz/acre
Pear psylla	(2.156 to 2.875
Scales	lbs/acre)
	(1.5 to 2.0 lbs ai/acre)
Notes and Use Restrictions	
<ul style="list-style-type: none"> • Apply by ground application using a minimum of 80 gallons of water per acre. • Do not make more than 2 applications per growing season. • Allow at least 7 days between applications. • Do not apply more than 69.0 oz (4.3 lbs) per acre per growing season. • Preharvest Interval (PHI): 14 days <p>RECOMMENDATIONS</p> <ul style="list-style-type: none"> • Pear Psylla: For best results of controlling 1st and 2nd instars, apply prebloom or at petal fall. In-season, apply early when smaller pear psylla nymphs are present. For best results, tank mix with an adulticide. • Mealybugs or San Jose scale: Apply prebloom or at first crawler emergence. • Other scales: Apply at first crawler emergence. • Good spray coverage is essential. • Phytotoxicity may occur in Asian pear varieties, normally limited to applications made prior to petal fall. 	

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**APPLICATION RATE CHART FOR
CENTAUR WDG INSECT GROWTH REGULATOR**
(continued)

Pome Fruits (Crop Group 11-10) – Except Pear and Asian Pear (See Application Rate Chart For Pear and Asian Pear)

apple; azarole; crabapple; loquat; mayhaw; medlar; quince; quince (Chinese); quince (Japanese); tejocote; cultivars, varieties and/or hybrids of these

Pest	Rate/Acre
Leafhoppers	9.0 to 12.0 oz/acre (0.56 to 0.75 lb/acre) (0.40 to 0.53 lb ai/acre)
Mealybugs Scales	34.5 oz/acre (2.156 lbs/acre) (1.5 lbs ai/acre)

Notes and Use Restrictions

- Apply by ground application using a minimum of 80 gallons of water per acre. For low-volume sprayers, use a minimum of 20 gallons of water per acre.
- Do not make more than 1 application per growing season.
- Do not apply more than 34.5 oz (2.156 lbs) per acre per growing season.
- Preharvest Interval (PHI): 14 days

RECOMMENDATIONS

- **San Jose scale:** Application can be made at dormant, delayed dormant, prebloom, or in-season at early crawler emergence.
- **Other scales:** Apply at early crawler emergence.
- **Mealybugs:** Application should be made from dormant, delayed dormant to petal fall when nymphs are present. Apply in-season at early crawler emergence.
- Good spray coverage is essential.

**APPLICATION RATE CHART FOR
CENTAUR WDG INSECT GROWTH REGULATOR**
(continued)

Stone Fruits (Crop Group 12) apricot; cherry, sweet; cherry, tart; nectarine; peach; plum; plum, chickasaw; plum, damson; plum, Japanese; plumcot; prune (fresh)	
Pest	Rate/Acre
Mealybugs Scales	34.5 oz/acre (2.156 lbs/acre) (1.5 lbs ai/acre)
Notes and Use Restrictions	
<ul style="list-style-type: none"> • Apply by ground application using a minimum of 50 gallons of water per acre. • Do not make more than 2 applications per growing season. • Allow at least 14 days between applications. • Do not apply more than 69.0 oz (4.3 lbs) per acre per growing season. • Do not apply more than 3.0 lbs active ingredient per acre per growing season. • Preharvest Interval (PHI): 14 days <p>RECOMMENDATIONS</p> <ul style="list-style-type: none"> • Mealybugs: Application should be made when early crawler emergence occurs. • San Jose scale: Application can be made at dormant, delayed dormant, or prebloom when scale is in the black cap stage or in-season at early crawler emergence. • Other scales: Apply at early crawler emergence. • Good spray coverage is essential. 	

(continued)

**APPLICATION RATE CHART FOR
CENTAUR WDG INSECT GROWTH REGULATOR**
(continued)

Tree Nuts (Crop Group 14) and Pistachio
almond; beechnut; Brazil nut; butternut; cashew;
chestnut; chinquapin; filbert; hickory nut;
macadamia nut; pecan; pistachio; walnut (black
and English)

Pest	Rate/Acre
Mealybugs Scales	34.5 to 46.0 oz/acre (2.156 to 2.875 lbs/acre) (1.5 to 2.0 lbs ai/acre)

Notes and Use Restrictions

- Apply by ground application using a minimum of 100 gallons of water per acre.
- Do not make more than 1 application per growing season.
- Do not apply more than 46.0 oz (2.875 lbs) per acre per growing season.
- Preharvest Interval (PHI): 60 days

RECOMMENDATIONS

- **Mealybugs:** Application should be made when early crawler emergence occurs.
- **San Jose scale:** Application can be made at dormant or delayed dormant when scale is in the black cap stage or in-season at early crawler emergence.
- **Other scales:** Apply at early crawler emergence or when scales are at a susceptible early nymphal stage.
- Good spray coverage is essential.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in original container, unopened, in a cool, dry place.

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

CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available.

IMPORTANT: READ BEFORE USE

By using this product, user or buyer accepts the following conditions, warranty, disclaimer of warranties, and limitations of liability.

CONDITIONS: The directions for use of this product are believed to be accurate and must be followed carefully. However, because of extreme weather and soil conditions, use methods and other factors beyond the control of Nichino America, Inc. (NAI), it is impossible for NAI to eliminate all risks associated with the use of this product. As a result, crop injury or ineffectiveness is always possible. To the extent consistent with applicable law, all such risks are assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, WHICH EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of NAI is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. To the extent consistent with applicable law, NAI disclaims any liability whatsoever for incidental or consequential damages, including, but not limited to, liability arising out of breach of contract, express or implied warranty (including warranties of merchantability and fitness for a particular purpose), tort, negligence, strict liability, or otherwise.

LIMITATIONS OF LIABILITY: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID, OR AT THE ELECTION OF NICHINO AMERICA, THE REPLACEMENT OF PRODUCT.

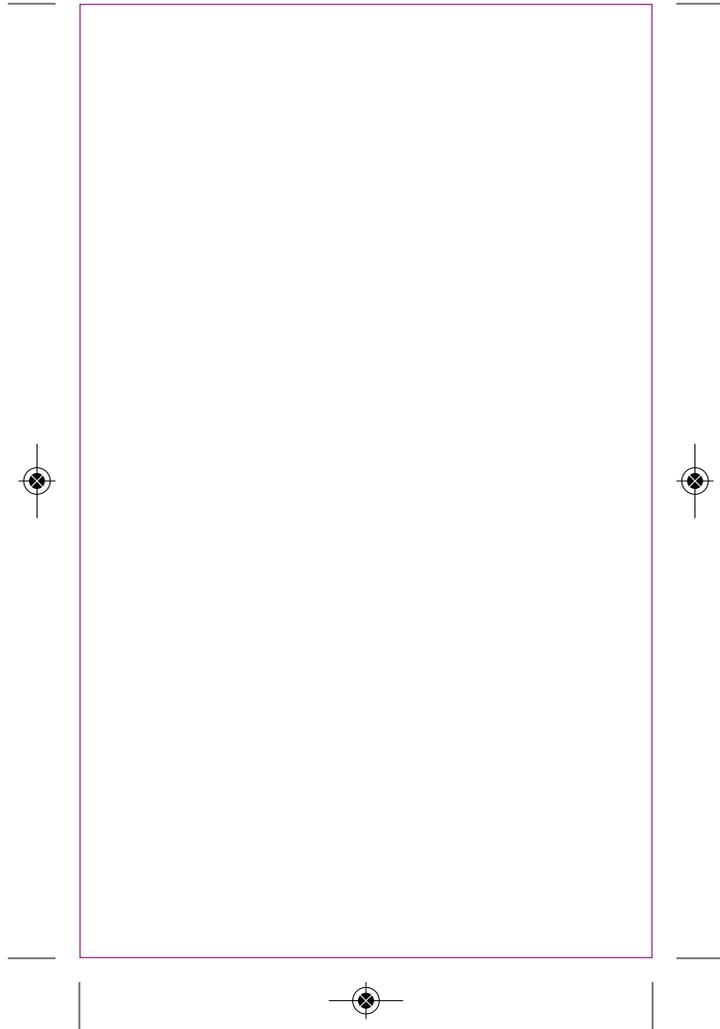
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Produced for
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Wilmington, DE 19808
888-740-7700

NOTES

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GROUP 16 INSECTICIDE



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OTHER INGREDIENTS:	30.00%
TOTAL	100.00%

Contains 0.70 lbs. buprofezin per pound of product

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superscript corresponds with lot number

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