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Product labels in this guide are for reference purposes only. Please refer to specific labels found on product containers prior to actual use. Always read and follow label directions carefully.

The specimen labels and information contained are correct as of the publication date but are subject to change without notice. NOT ALL PRODUCTS AND USES REFERENCED IN THIS GUIDE ARE REGISTERED FOR USE IN ALL STATES. PLEASE CONTACT YOUR OLYMPIC HORTICULTURAL PRODUCTS REPRESENTATIVE FOR CLARIFICATION.

publication date 6/01

OLYMPIC HORTICULTURAL PRODUCTS™

P.O. Box 1885, Bradenton, FL 34206-1885

For more information regarding **Olympic Horticultural Products**, for the Greenhouse, Nursery and Interiorscape, we may be reached at:

Customer Service: 800-659-6745 **Technical Service: 800-356-4647**

www.olympichort.com

AZATIN® XL

OLYMPIC HORTICULTURAL PRODUCTS™

Botanical Insecticide — SPECIMEN LABEL

FOR INDOOR AND OUTDOOR USE ON ORNAMENTALS AND HORTICULTURAL CROPS

ACTIVE INGREDIENT:	
Azadirachtin*	3.0%
OTHER INGREDIENTS	97.0%
	100.0%

***Contains 0.265 pounds (120 grams) of azadirachtin per gallon**

EPA Reg. No. 70051-27-59807 **EPA Est. No.: 44616-MO-1**

Net Contents: One Quart

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed or inhaled. Avoid breathing vapors or spraymist. Causes eye irritation. Do not get in eyes. Avoid contact with skin or clothing. Wash thoroughly with soap and water after handling.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- chemical resistant gloves such as barrier laminate or Viton (14 mil)
- shoes plus socks, and
- protective eye wear.

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.

FIRST AID

If in Eyes: Flush eyes with plenty of water. Call a physician if irritation persists.

If Inhaled: Move to fresh air. Clear lungs and airways. Get medical attention if irritation develops.

If on Skin: Wash with plenty of soap and water. Get medical attention if irritation develops.

If Swallowed: Do not induce vomiting. Contact a physician immediately.

User Safety Recommendations:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal area below the mean high-water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when cleaning equipment or disposing 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.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Do not store above 100 degrees F or below -20 degrees F for extended periods of time. Keep containers tightly closed when not in use.

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

CONTAINER DISPOSAL: Do not re-use as a container. Triple rinse or equivalent. Then offer for recycling or reconditioning, or puncture and dispose of in an incinerator or landfill or by other procedures approved by State and local authorities.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and 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 workers entry into treated areas during the restricted entry interval (REI) of 4 hours.

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

Long-sleeved shirt and long pants, chemical resistant gloves such as barrier laminate or Viton (14 mil), shoes plus socks, and protective eye wear.

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 Standards for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, or greenhouses. For other uses including golf courses, and other non-agricultural uses, do not enter treated areas without protective clothing until sprays have dried.

Pests controlled by AZATIN® XL

Aphids, such as:
Apple Aphid
Cotton Aphid
Green Peach Aphid
Melon Aphid
Pea Aphid
Potato Aphid
Rose Aphid

Armyworms, such as:
Beet Armyworm
Fall Armyworm
Lawn Armyworm
Southern Armyworm
Yellow Striped Armyworm

Bagworms

Beetles, Grubs and Weevils, such as:
Black Vine Weevil
Colorado Potato Beetle
Elm Leaf Beetle
Flea Beetles
Japanese Beetle
June Beetle
Mexican Bean Beetle
Rose Chafer

Cankerworms, such as:
Fall Cankerworm
Spring Cankerworm

Caterpillar and Loopers, such as:
Cabbage Looper
Corn Earworm
Diamondback Moth
Grapeleaf Skeletonizer
Imported Cabbageworm
Navel Orangeworm
Soybean Looper
Tent Caterpillar
Tobacco Budworm
Tobacco Hornworm
Tomato Fruitworm
Tomato Pinworm

Chafers, such as:
European Chafer
Northern Masked Chafer
Rose Chafer
Southern Masked Chafer

Cutworms, such as:
Black Cutworm
Citrus Cutworm

Flies, such as:
Caribbean Fruit Fly
Crane Fly
Fungus Gnat
Hessian Fly
Oriental Fruit Fly
Mediterranean Fruit Fly
Melon Fly
Shore Fly
Walunt Husk Fly

Leaf Tiers

Leafhoppers, such as:
Grape Leafhopper
Potato Leafhopper
Variegated Leafhopper

Leafminers, such as:
Citrus Leafminer
Serpentine Leafminer
Vegetable Leafminer

Leafrollers, such as:
Blueberry Leafroller
Filbert Leafroller
Fruitree Leafroller
Grape Leafroller
Oblique Banded Leafroller
Omniverous Leafroller

Leaf Perforators

Marsh Crane Flies

Mealybugs

Moths, such as:
European Pine Shoot Moth
Pine Tip Moth
Tussock Moth

Psyllids

Sawflies

Thrips, such as:
Citrus Thrips
Flower Thrips
Gladiolus Thrips
Western Flower Thrips

Whiteflies, such as:
Greenhouse Whitefly
Silverleaf Whitefly
Sweetpotato Whitefly

CROPS ON WHICH AZATIN® XL CAN BE USED

Azatin® XL can be used indoors and outdoors. Plants may be potted, grown in the soil or soiless mixtures or grown hydroponically.

Bedding Plants, Flowers, Potted Plants and Foliage, such as:
Actinopteris
Aglaonema
Allamanda
Algerian Ivy
Alocasia
Anthurium
Aphelandra
Artemisia
Aster
Aucuba Illex
Azalea
Baby's Breath
Begonia
Bougainvillea
Boston Fern
Boxwood
Brachycome
Cacti
Calabrese
Caladium
Calla
Calathea
Calendula
Carnation
Chrysanthemum
Coleus
Columbine
Dahlia
Daisy
Daylily
Delphinium
Dianthus
Dieffenbachia
Dusty Miller
Easter Lily
English Ivy
Euphorbia
Fern
Ficus
Foxglove
Freesia
Fuchsia
Gaillardia
Gardenia
Geranium
Gerbera
Gladioli
Gypsophilla
Hedera
Hibiscus
Impatiens
Iris
Lily
Manvilla
Marigold
Nasturtium
Pansy
Pelargonium
Peony

Peperomia
Petunia
Philodendron
Phlox
Photinia
Pittosporum
Pinks
Poinsettia
Pothos
Portulaca
Rosemary
Rose
Rubberplant
Salvia
Schefflera
Sedum
Sempervivum
Snapdragon
Spathiphyllum
Stock
Syngonium
Verbena
Vinca
Wandering Jew
Zinnia

Ornamentals, such as:
Ageratum
Arborvitae
Aster
Aucuba Illex
Azalea
Begonia
Boxwood
Cacti
Calendula
Calla
Camella
Camellia
Carnation
Ceanothus
Chrysanthemum
Cineraria
Coleus
Cotoneaster
Cyclmen
Daffodil
Dahlia
Delphinium
Dogwood
Ficus
Foliage Plants
Fuchsia
Gardenia
Geranium
Hyacinth
Hydrangea
Iris
Ivy
Lily
Maidenhair Fern
Marigold
Narcissus
Orchid
Pansy
Pelargonium
Peony
Phlox
Photinia
Pittosporum
Poinsettia
Pyracantha
Rhododendron
Rose
Rubber Plant
Snapdragon
Stock
Tulip
Wandering Jew
White Cedar
White Pine
Yew
Yucca
Zinnia

Trees and Shrubs, such as:
Andromeda
Arborvitae
Ash
Austrian Pine
Azalea
Beech
Birch
Birdsnest Spruce
Blue Spruce
Boxwood
Butternut
Cedar
Chamaecyparis
Cherry
Crabapple
Cotoneaster
Cyprus
Dogwood
Douglas Fir
Elm
Euonymus
Firethorn
Forsythia
Hackberry
Hawthorn
Hemlock
Hickory
Holly
Honey Locust
Horse Chestnut
Juniper
Larch
Laurel
Lilac
Linden
London Plane
Magnolia
Manvilla
Maple
Mimosa
Mountain Ash
Myrtle
Oak
Pachysandra
Peach
Pine
Planetree
Poplar
Privet
Quince
Spruce
Sycamore

Bulb Vegetables, such as:
Garlic
Leek
Onion
Shallot

Citrus Fruits, such as:
Calamandin
Citrus citron
Grapefruit
Kumquat
Lemon
Limes
Mandarin (tangerine)
Orange, sour
Orange, sweet
Pummelo
Satsuma mandarin

Cucurbit Vegetables, such as:
Balsam pear (bitter melon)
Cantaloupe
Casaba
Chinese waxgourd
Citron melon
Crenshaw
Cucumber
Gherkin
Gourds
Honeydew
Honeyballs
Mango Melon
Pumpkin
Squash
Watermelon

Fruiting Vegetables, such as:
Eggplant
Ground cherry
Pepinos
Peppers
Tomatillo
Tomato

Herb and Spices such as:
Anise
Balm
Basil
Borage
Burnet
Chamomile
Caraway
Catnip
Celery
Chives
Coriander
Costmary
Cumin
Curry leaf
Dandelion
Dill
Fennel
Fenugreek
Horehound
Hyssop
Marigold
Marjoram
Mint
Nasturtium
Pennyroyal
Rosemary
Rue
Sage
Savory
Sweet bay
Tansy
Tarragon
Thyme
Wintergreen
Woodruff
Wormwood

Brassica (Cole) Crops, such as:
Broccoli
Brussels sprouts
Bok choy
Cabbage
Chinese cabbage
Cauliflower

Leafy Vegetables, such as:
Chinese spinach
Celery
Chervil
Collards
Corn salad
Chrysanthemum (edible)
Cress
Endive
Fennel
Kale
Kohlrabi
Lettuce
Mustard greens
Orach
Parsley
Rhubarb
Spinach
Swiss chard
Turnip tops

Nuts, such as:
Almond
Beach nut
Brazil nut
Butternut
Cashew
Chestnut
Chinquapin
Filberts (hazelnuts)
Hickory nuts
Lychee nuts
Macadamia
Pecan
Pistachio
Walnuts

Pome Fruits, such as:
Apple
Crabapple
Lquat
Mayhaw
Pear
Quince
Jujube

Root and Tuber Crops, such as:
Beet, red
Beet, sugar
Carrot
Cassava
Celeriac
Chervil
Dasheen (taro)
Ginger
Horseradish
Jicama
Parsnip
Potato
Radish
Radish, Japanese (Daikon)
Rutabaga
Salisfy
Sweet potato
Tumeric
Turnip
Yam
Yam bean

Stone Fruits, such as:
Apricot
Cherry, sour
Cherry, sweet
Nectarine
Peach
Plum
Prune

Miscellaneous Crops, such as:
Artichoke
Asparagus
Avocado
Birdseed
Coffee
Cacao
Edible Flowers
Feijoa
Figs
Hops
Guayule
Kiwi
Okra
Palm
Papaya
Pawpaw
Persimmon
Pineapple
Rambutan
Suger Cane
Tamarillo
Tea
Tobacco
Waterchestnut
Watercress

GENERAL APPLICATION DIRECTIONS

READ ALL DIRECTIONS BEFORE USING.

Dilute **Azatin® XL** in water at a rate up to 21 fluid ounces (20 grams active ingredient) per acre. Apply using any suitable ground or aerial equipment, in a manner to obtain uniform and complete plant coverage.

For crops apply using conventional application equipment in a minimum of 30 gallons of water per acre and aerial application equipment in a minimum of 3 gallons of water per acre.

Avoid overspraying to the point of excessive runoff.

Refer to tables for detailed dilution rates.

Applications should be made when pests first appear and are in their early larval stages. Repeat applications every 7 days or as needed.

For best results, a spreader-sticker should be added at the recommended label rate.

Dilute solutions containing **Azatin® XL** should be maintained at a pH between 3 and 7, and applied soon after preparation. Do not store for later use.

This product may be pre-mixed in a supply tank with water, fertilizer or other appropriate agricultural chemicals. Agitation is necessary (See Mixing Directions). Crop injury or lack of effectiveness can result if uniform distribution is not achieved.

When pest populations are high, use the higher label rates.

Application Rates for Whitefly and Other Greenhouse (including Lathe and Shade), Nursery and Interiorscape Pests

Apply **Azatin® XL** at the recommended use dilution rate in 100 gallons of water to assure adequate plant coverage (usually 1-2 gallons of spray solution / 1,000 sq. feet).

Pests controlled by Azatin® XL	Rate of Azatin® XL per 100 gallons water	Remarks
Aphids	12 to 16 oz.	Suppression and adult feeding deterrence.
Armyworms	10 to 16 oz.	Foliar application to larvae.
Black Vine Weevil	21 oz. / acre	Soil and foliar application to larvae.
Fungus Gnats	8 oz.	Apply as soil drench for maggot control.
Leafminers	10 to 16 oz.	Foliar application to larvae.
Western Flower Thrips	12 to 16 oz.	Suppression of larvae and adult feeding deterrence.
Sweetpotato Whitefly (including strain B)	10 to 16 oz.	Foliar application to larvae and nymphs.
Greenhouse Whitefly	10 to 16 oz.	Foliar application to larvae and nymphs.
Others Bagworms Cankerworms Cutworms Leafhoppers Leafrollers Sawflies Tent Caterpillars	10 to 16 oz.	Foliar application to nymphs / larvae.

Application Rates for Key Insect Pests in Vegetables, Fruits, and Nut Crops

Apply **Azatin® XL** at the recommended use dilution rates in sufficient water to assure adequate coverage. (Conventional application equipment apply in a minimum of 30 gallons water per acre). (Aerial application equipment apply in a minimum of 3 gallons water per acre).

Pests controlled by Azatin® XL	Rate Azatin® XL per acre	Remarks
Aphids, such as: Cotton Aphid Green Peach Aphid Hop Aphid Potato Aphid	10 to 16 oz.	Foliar application, for suppression only
Armyworms, such as: Beet Armyworm Fall Armyworm Southern Armyworm Yellow Striped Armyworm	5 to 16 oz.	Foliar application to larvae
Beetles, such as: Colorado Potato Beetle	5 to 16 oz.	Foliar application to larvae
Caterpillars, such as: Corn Earworm Diamondback Moth Imported Cabbageworm Navel Orangeworm Tobacco Budworm Tobacco Hornworm Tomato Fruitworm Western Grapeleaf Skeletonizer	 10 to 21 oz. 10 to 16 oz. 5 to 16 oz. 10 to 21 oz. 5 to 16 oz. 5 to 16 oz. 5 to 16 oz. 5 to 16 oz.	Foliar application to larvae
Cutworms, such as: Citrus Cutworm Black Cutworm	 5 to 16 oz. 5 to 10 oz.	Foliar application to larvae
Loopers, such as: Cabbage Looper Soybean Looper	5 to 10 oz.	Foliar application to larvae
Leafminers, such as: Citrus Leafminer Serpentine Leafminer Vegetable Leafminer	10 to 16 oz.	Foliar application to larvae. Use with oil.
Leafhoppers, such as: Grape Leafhopper Variegated Leafhopper	10 to 16 oz.	Foliar application to nymphs. Use equipment to target the underside of leaves.
Whiteflies, such as: Greenhouse Whitefly Silverleaf Whitefly Sweetpotato Whitefly	10 to 21 oz.	Foliar application to nymphs. Use equipment to target undersides of leaves.

*When using lower rates (less than 10 oz.), combine **AZATIN® XL** with an approved adjuvant such as a non-phytotoxic crop oil, up to 1%. Always ensure good coverage by adjusting spray gallonage. Treat early for best control. Do NOT use less than 10 oz. in California.

SPRAY:

High volume - When plant foliage is dense, use the higher label rates and increase spray gallonage to obtain uniform and complete coverage.

Aerial / low / ultra low volume - Apply **Azatin® XL** at rates of 5 to 21 oz. / acre (10-21 oz. in California) in a minimum of 3 gallons of water per acre. For best results, ensure uniform and complete plant coverage.

DRENCH / CHEMIGATION:

This product is effective as a soil drench for controlling soil-borne insect larvae (e.g. Fungus Gnats).

It is also effective as a soil drench for controlling foliar and soil-borne pests, particularly when alternated with **Azatin® XL** foliar sprays.

Apply **Azatin® XL** in sufficient water and for sufficient duration so as to distribute the recommended rate evenly to the entire treated area.

Apply to moderately moist soils. Use volumes that thoroughly wet the soil, but do not cause significant surface runoff or excessive drip from pots.

CHEMIGATION:

Refer to supplemental labeling entitled "Olympic's Chemigation Bulletin" for use directions for chemigation. Do not apply this product through any irrigation system unless the supplemental labeling on chemigation is followed.

SPRAY EQUIPMENT

Use suitable equipment that allows for uniform coverage of the targeted treatment area, such as hand or power operated spray equipment.

MIXING DIRECTIONS

Azatin® XL WITH WATER:

For best results,

1. Use clean equipment.
2. Fill tank 1/2 full to 3/4 full with water and begin agitation.
3. Add pesticide to the tank.
4. Fill the tank completely with water and mix thoroughly before applying.
5. Adjust spray solution to between 3 to 7 pH, if necessary.
6. Pesticide mix should be applied immediately after mixing.
7. If the mixture is not applied immediately, agitate before application.
8. Thoroughly clean equipment following application.

TANK MIXTURES OR FLUID FERTILIZERS:

1. Before using this product in a tank mix with fertilizer or registered pesticide, determine compatibility by conducting a compatibility test with a small amount of each product.
2. Observe all cautions and limitations on labels of all products used in combination.
3. Follow all tank mix directions and observe limitations listed in the combination product(s) label.

COMPATIBILITY TEST

A compatibility test should be performed before tank mixing this product with other product(s) or liquid fertilizer(s). Fill three separate 1 quart jars with 1 pint of water of fertilizer. To a first jar add this product and mix well. To a second jar, add the desired other tank mix product(s) and mix well. To a third jar, combine this product with the other tank mix product(s) and mix well. If more than one product is used, add them separately with dry formulations first, flowables next, and emulsifiable concentrates last. After each addition, shake or stir gently to thoroughly mix. For the appropriate amount of product for this test use the following:

DRY PRODUCTS - For each pound to be applied per acre, add 1.5 level teaspoons to each jar.

LIQUID PRODUCTS - For each pint to be applied per acre, add 0.5 teaspoons or 2.5 ml to each jar.

Note any differences between the mixtures in the jars (compounds alone vs mixtures) after 15 minutes. Look for evidence of physical incompatibility such as clumping, precipitation, oily residues on the sides of the glass or other signs of incompatibility. If either mixture separates, but can be readily remixed, the mixture can be sprayed as long as good agitation is used. If the mixtures are incompatible, do not use the mixture.

WARRANTY

Olympic Horticultural Products Company warrants that the material contained herein conforms to the description on the label and is reasonably fit for the purposes refurred to in the dirctions for use. Timing and method of application, weather, watering practices, nature of soil, the insect problem, condition of the crop, incompatibility with other chemicals not specifically recommended, and other influencing factors in the use of this product are beyond the control of the seller. Buyer assumes all risks of use, storage or handling of this material not in strict accordance with directions given herein. NO OTHER EXPRESS OR IMPLIED WARRANTY OF THE FITNESS OR MERCHANTABILITY IS MADE.

OLYMPIC
HORTICULTURAL PRODUCTS™

Manufactured for:
Olympic Horticultural Products Company
P. O. Box 230
Mainland, PA 19451
(800) 659-6745

981220-1 OHP0700RT

U.S. Patent No. 5,001,146 and /or No. 5,124,349

MATERIAL SAFETY DATA SHEET

OLYMPIC HORTICULTURAL PRODUCTS, CO.
P.O. BOX 230, MAINLAND, PA 19451
800-659-6745

CAS No. (a.i.): 11141-17-6
MSDS Date: August 18, 1998
Supercedes: April 1996

TRANSPORTATION EMERGENCY
CALL CHEM TEL: . . . . . (800) 255-3924
OUTSIDE USA: . . . . . (813) 977-3668

NON-TRANSPORTATION
OLYMPIC EMERGENCY PHONE . . . . . .(800) 356-4647
OLYMPIC INFORMATION PHONE . . . . . .(800) 659-6745

PRODUCT NAME: AZATIN® XL

EPA Registration Number: 7 51-27-598 7

I. CHEMICAL PRODUCT INFORMATION

PRODUCT NAME . . . . . .: AZATIN® XL
CHEMICAL FAMILY . . . . . .: emulsifiable concentrate
CHEMICAL NAME . . . . . .: biological insecticide
FORMULA . . . . . .: $C_{35}H_{44}O_{16}$

II. COMPOSITION / INFORMATION ON INGREDIENTS

			OSHA	TLV"s	
COMPONENT	CAS#	WT.%	PEL	TWA	STEL
Azadirachtin A	11141-17-6	3.0	N/A	N/A	N/A
Aromatic hydrocarbon	64742-94-5	~50	N/A	10 ppm	15 ppm

III. HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW

This product is a dark free flowing liquid with odor of garlic and solvent which is intended for use as a pesticide to control insects on agricultural crops. Can cause eye and skin irritation. May cause respiratory irritation, especially at temperatures over 90°F. Contains aromatic solvent; keep away from heat, sparks, or open flame.

Signal Word: CAUTION

Potential Health Effects

ROUTE(S) OF ENTRY . . . . . .: Eyes, skin, oral, inhalation.

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE . . . . . .: None noted.

ACUTE EYE CONTACT . . . . . .: Causes irritation, but does not injure eye tissue.

CHRONIC EYE CONTACT . . . . . .: Chronic exposure not likely from normal use.

ACUTE SKIN CONTACT . . . . . .: May cause mild, reversible skin irritation.

CHRONIC SKIN CONTACT . . . . . .: Prolonged contact may irritate and cause dermatitis. Skin contact may aggravate an existing condition, LD_{50}>2.0 g/kg.

ACUTE INGESTION . . . . . .: LD_{50}>4.242 g/kg.

CHRONIC INGESTION . . . . . .: Chronic exposure not likely from from normal use.

ACUTE INHALATION . . . . . .: LC_{50}>2.18 mg/l.

CHRONIC INHALATION . . . . . .: Chronic exposure not likely from normal use.

CARCINOGENICITY

NTP . . . . . .: N/A
IARC . . . . . .: N/A
OSHA . . . . . .: N/A

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE . . . . . .: None noted.

IV. FIRST AID MEASURES:

FIRST AID FOR EYES . . . . . .: Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Get medical attention.

FIRST AID FOR SKIN . . . . . .: Wash with soap and water. Remove contaminated clothing. Seek medical attention if irritation persists.

FIRST AID FOR INHALATION . . . . . .: If not breathing give artificial respiration, preferably mouth-to-mouth.

FIRST AID FOR INGESTION . . . . . .: Do not induce vomiting.

V. FIRE FIGHTING MEASURES:

NFPA HAZARD CLASSIFICATION:
HEALTH HAZARD 2
FIRE HAZARD 2
REACTIVITY 0

EXTINGUISHING MEDIA . . . . . .: Dry chemical, carbon dioxide, alcohol or polymer foam.

UNUSUAL FIRE AND EXPLOSION HAZARDS . . . . . .: Flammable liquid. Keep away from heat, sparks, or open flame.

SPECIAL FIRE FIGHTING PROCEDURES . . . . . .: None known.

VI. ACCIDENTAL RELEASE MEASURES:

SPILL OR LEAK PROCEDURES . . . . . .: Wear SCBA, rubber boots, and heavy rubber gloves. Shut off sources of ignition. Dike around spill, absorb on sand or similar, and place in closed containers for disposal. Ventilate area and wash spill site after material pick-up. Avoid run-off into storm sewers and ditches, which lead to waterways.

VII. HANDLING AND STORAGE:

STORAGE TEMPERATURE (MIN. / MAX.) . . . . . .: 50 / 95 °F 10 / 35 °C

SHELF LIFE . . . . . .: Stable for upwards of 1 year at ambient conditions.

SPECIAL SENSITIVITY . . . . . .: Avoid temperature extremes, direct sunlight.

PRODUCT NAME: AZATIN® XL

EPA Registration Number: 7 51-27-598 7

HANDLING AND STORAGE PRECAUTIONS . . . . . .: Keep container tightly closed when not in use. Store in a cool, dry place away from feed and food stuffs. Keep away from heat, sparks, or open flame. Wear goggles and or face shield.

VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION:

EYE PROTECTION REQUIREMENTS . . . . . .: The use of safety goggles is recommended.

SKIN PROTECTION REQUIREMENTS . . . . . .: The use of chemical-resistant gloves is required.

RESPIRATORY / VENTILATION REQUIREMENTS . . . . . .: Use with adequate ventilation.

EXPOSURE LIMITS . . . . . .: N/A

IX. PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL FORM . . . . . .: Liquid

COLOR . . . . . .: Dark brown

ODOR . . . . . .: Garlic/aromatic

BOILING POINT RANGE . . . . . .: 360 °F 182 °C

MELT POINT / FREEZE RANGE . . . . . .: N/A °F °C

FLASH POINT . . . . . .: 145 °F 63 °C

AUTO IGNITION . . . . . .: N/A °F °C

UPPER EXPLOSIVE LIMITS (UEL) . . . . . .: Not determined

LOWER EXPLOSIVE LIMITS (LEL) . . . . . .: Not determined

pH . . . . . .: 4.69

SOLUBILITY IN WATER . . . . . .: Dispersible

SPECIFIC GRAVITY . . . . . .: 1.066

BULK DENSITY . . . . . .: N/A

% VOLATILE BY WEIGHT . . . . . .: 62

VAPOR PRESSURE at 20 °C . . . . . .: 3.0 mm Hg

VAPOR DENSITY . . . . . .: 3.94

X. STABILITY AND REACTIVITY:

STABILITY . . . . . .: Stable

HAZARDOUS POLYMERIZATION . . . . . .: Will not occur.

INCOMPATIBILITIES . . . . . .: Acids, acid chlorides, oxidizing agents, reducing metals, alkali metals.

DECOMPOSITION PRODUCTS . . . . . .: None known

CONDITIONS TO AVOID . . . . . .: Keep away from heat, sparks, or open flame.

XI. TOXICOLOGICAL INFORMATION:

Harmful if swallowed. Avoid contact with skin, eyes, or clothing. Avoid contamination of feed and foodstuffs. Avoid breathing spray mist. In case of contact, flush eyes with plenty of water. If on skin, wash with soap and water. If irritation persists, get medical attention.

XII. ECOLOGICAL INFORMATION:

This product may be hazardous to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present, or in areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of water.

XIII. DISPOSAL CONSIDERATIONS:

WASTE DISPOSAL METHOD . . . . . .: Rinsewater and unused diluted pesticide may be disposed of on-site or in an approved waste disposal facility.

XIV. TRANSPORTATION INFORMATION:

D.O.T. PROPER SHIPPING NAME . . . . . .: N/A

TECHNICAL SHIPPING NAME . . . . . .: AZATIN® XL

D.O.T. HAZARD CLASS . . . . . .: Not regulated

U.N. / N.A. NUMBER . . . . . .: N/A

PRODUCT RQ (lbs.) . . . . . .: N/A

D.O.T. LABEL . . . . . .: N/A

D.O.T. PLACARD . . . . . .: N/A

XV. REGULATORY INFORMATION:

OSHA STATUS . . . . . .: N/A

TSCA STATUS . . . . . .: N/A

CERCLA REPORTABLE QUANTITY . . . . . .: N/A

SARA TITLE III:

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES . . . . . .: N/A

SECTION 311/312 HAZARD CATEGORIES . . .: N/A

SECTION 313 TOXIC CHEMICALS . . . . . .: Chemical (s) subject to reporting of the 1986 Superfund Amendments and Re-authorization Act (SARA) and 40 CFR Part 372.

RCRA STATUS . . . . . .: N/A

STATE REGULATORY INFORMATION:

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For detail on your regulatory requirements you should contact the appropriate agency in your state.

COMPONENT NAME / CAS NUMBER **CONCENTRATION** **STATE CODE**

XVI. OTHER INFORMATION:

REASON FOR ISSUE . . . . . .: Administrative language clarification

APPROVAL DATE . . . . . .: August 18, 1998

SUPERSEDES DATE . . . . . .: April 30, 1998

To the best of our knowledge, the information contained herein is accurate. However, Olympic Horticultural Products Company does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All material may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

OLYMPIC HORTICULTURAL PRODUCTS™

COMPASS™ O 50WDG

OLYMPIC HORTICULTURAL PRODUCTS™

Fungicide — SPECIMEN LABEL

FOR CONTROL OF CERTAIN FOLIAR, STEM, AND ROOT DISEASES OF ORNAMENTALS GROWN IN INTERIORSCAPES, FIELD NURSERY PLANTINGS, FOREST NURSERIES, GREENHOUSES, LATH AND SHADEHOUSES, CONTAINERS, AND OTHER ENCLOSED STRUCTURES.

ACTIVE INGREDIENT:	
Trifloxystrobin (CAS No. 141517-21-7)	50.0%
OTHER INGREDIENTS:	50.0%
TOTAL:	100.0%

COMPASS O is a water-dispersible granule.

EPA Est. indicated by second and third digits of the batch number on this package.
(73) = 67545-AZ-1 (03) = 3125-MO-1
(98) = 33967-NJ-1

EPA Reg. No. 3125-560-59807

Net Contents: 8 ounces

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Causes moderate eye irritation. Harmful if absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Chemical-resistant gloves made of any waterproof material.
- 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.

Engineering Control Statements

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.

User Safety Recommendations:

Users should:

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

FIRST AID

If in eyes	• Hold eyes open and rinse slowly and gently with water for 15 to 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 on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment.

In case of emergency call toll free the Bayer Kansas City Emergency Response Telephone No. 800-414-0244. Have a product container or label with you when calling a poison control center or doctor, or going for treatment.

Note to Physician: If ingested, induce emesis or lavage stomach. Treat symptomatically.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface

water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wash water or rinsate.

Ground Water Advisory

Several trifloxystrobin degradates have properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

PHYSICAL OR CHEMICAL HAZARDS

Do not use, pour, spill, or store near heat or open flame.

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 regulations.

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 on 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. Exception: If the product is applied by drenching, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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.
- Chemical-resistant gloves made of any waterproof material.
- Shoes plus socks.

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 areas without protective clothing until sprays have dried.

IMPORTANT: Read these entire Directions and the Conditions of Sale before using **COMPASS O** Fungicide.

CONDITIONS OF SALE: THE DIRECTIONS ON THIS LABEL WERE DETERMINED THROUGH RESEARCH TO BE THE DIRECTIONS FOR CORRECT USE OF THIS PRODUCT. THIS PRODUCT HAS BEEN TESTED FOR A RANGE OF WEATHER CONDITIONS SIMILAR TO THOSE WEATHER CONDITIONS THAT ARE ORDINARY AND CUSTOMARY IN THE GEOGRAPHIC AREA WHERE THE PRODUCT IS USED. INSUFFICIENT CONTROL OF PESTS AND/OR INJURY TO THE CROP TO WHICH THE PRODUCT IS APPLIED MAY RESULT FROM THE OCCURRENCE OF EXTRAORDINARY OR UNUSUAL WEATHER, OR FROM FAILURE TO FOLLOW LABEL DIRECTIONS. IN ADDITION, FAILURE TO FOLLOW LABEL DIRECTIONS MAY CAUSE INJURY TO OTHER CROPS, ANIMALS, MAN, OR THE ENVIRONMENT. OLYMPIC OFFERS, AND THE BUYER ACCEPTS AND USES, THIS PRODUCT SUBJECT TO THE CONDITIONS THAT EXTRAORDINARY OR UNUSUAL WEATHER, OR FAILURE TO FOLLOW LABEL DIRECTIONS ARE BEYOND THE CONTROL OF OLYMPIC AND ARE, THEREFORE, THE RESPONSIBILITY OF THE BUYER.

Do not apply by aerial application in New York State

GENERAL INFORMATION

COMPASS O is a mesostemic fungicide for use on ornamentals with protective and curative activity. **COMPASS O** penetrates the plant and provides translaminar activity via a high affinity for the waxy layer of the plant surface, localized vapor movement and re-deposition on the plant.

Mixing Procedures

Prepare no more spray mixture than is needed for the immediate operation. Thoroughly clean spray equipment before using this product. Agitation is necessary for proper dispersal of the product. Maintain agitation throughout the spraying operation. Do not let the spray mixture stand overnight in the spray tank. Flush the spray equipment thoroughly following each use and apply the rinsate to a previously treated area.

COMPASS O Alone: Add 1/2 of the required amount of water to the mix tank. With the agitator running, add the **COMPASS O** to the tank. Continue agitation while adding the reminder of the water. Begin application of the solution after **COMPASS O** has completely dispersed into the mix water. Maintain agitation until all of the mixture has been applied.

COMPASS O + Tank Mixtures: Add 1/2 of the required amount of water to the mix tank. Start the agitator running before adding any tank mix partners. In general, tank mix partners should be added in this order:

(1) products packaged in water-soluble packaging, wettable powders, wettable granules (dry flowables) such as **COMPASS O**; (2) liquid flowables, liquids; and (3) emulsifiable concentrates. Always allow each tank mix partner to become fully dispersed before adding the next product. Provide sufficient agitation while adding the remainder of the water. Maintain agitation until all of the mixture has been applied.

Note: When using **COMPASS O** in tank mixtures, all products in water-soluble packaging should be added to the tank before any other tank mix partner, including **COMPASS O**. Allow the water-soluble packaging to completely dissolve and the product(s) to completely disperse before adding any other tank mix partner to the tank.

If using **COMPASS O** in a tank mixture, observe all directions for use, crop/sites, use rates, dilution ratios, precautions, and limitations that appear on the tank mix product label. No label

dosage rate should be exceeded, and the most restrictive label precautions and limitations should be followed. This product should not be mixed with any product that prohibits such mixing. Tank mixtures or other applications of products referenced on this label are permitted only in those states in which the referenced products are labeled.

COMPASS O is compatible with most insecticide, fungicide, and foliar nutrient products. However, the compatibility of **COMPASS O** with tank mix partners should be tested before use.

To determine biological compatibility with other products, mix the products in the desired proportions, spray on target plants and observe for phytotoxicity seven days after the application.

To determine the physical compatibility of **COMPASS O** with other products, use a jar test, as described below. Using a quart jar, add the proportionate amounts of the products to 1 qt. of water. Add wettable powders and water-dispersible granular products first, then liquid flowables, and emulsifiable concentrates last. After thoroughly mixing, let stand for at least 5 minutes. If the combination remains mixed or can be remixed readily, it is physically compatible. Once compatibility has been proven, use the same procedure for adding required ingredients to the spray tank.

Observe all directions, precautions, and limitations on labeling of all products used in tank mixes. Tank mixtures or other applications of products referenced on this label are permitted only in those states in which the referenced products are registered.

Use with additives: Use of spray additives are not required. Any spray additive should be evaluated prior to use. Do not use in conjunction with organosilicate-based products, or plant injury may occur. Label directions are based on data with no additives.

Chemigation: Do not apply this product through any type of irrigation system.

Resistance Management: COMPASS O belongs to the strobilurin class of chemistry which exhibits no known cross-resistance to other chemical classes including sterol inhibitors, dicarboximides, benzimidazoles, anilinopyrimidines, or phenylamides. However, certain fungal pathogens 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. Such strategies may include rotating and/or tank mixing with products having different modes of action; or limiting the total number of applications per season. Olympic encourages responsible product stewardship to ensure effective long-term control of the fungal diseases on this label. See specific recommendations in the ornamentals section.

Maximum Use Rates

For plants grown in outdoor nurseries, outdoor seedbeds, field plantings, and landscapes up to 34 1/2 oz. of **COMPASS O** per acre of production per year or crop cycle can be used.

For seedlings and plants grown in greenhouses, containers, and other enclosed structures, up to 120 oz. of **COMPASS O** per acre per year or crop cycle can be used. In California only, do not apply more than 34 1/2 oz. of **COMPASS O** per acre per year or crop cycle to seedlings or plants grown in greenhouses, containers, and other enclosed structures.

Table 1. COMPASS O has been tested for phytotoxicity and been found safe to the following plants*. The numbers in ( ) indicate the diseases listed in Table 2. For plants not listed and for use of COMPASS O in tank mixtures, see Notice to Users.

Aloe Vera (11)	Chrysanthemum (3,5,11)	Hen and Chickens, flowering (11)	Nectarine, nonbearing** (6,8)
Alyssum (11)	Citrus, nonbearing** (6)	Hosta (3,11)	Pansy (1,3,11)
Apple, nonbearing** (6,7,9)	Coleus (3,11)	Hypoestes (11)	Peach, nonbearing** (3,11)
Aptenia (11)	Coontie Palm (11)	Impatiens* (11)	Petunia* (11)
Azalea (1,3,11)	Cosmos (6,11)	Iris, African (3,8,11)	Phlox (3,11)
Bamboo (8,11)	Crabapple, nonbearing**(5,6,7,9)	Iris, Siberian (3,8,11)	Photinia (6)
Barberry, Japanese (2)	Daisy (11)	Jasmine (1,11)	Pittosporum (11)
Begonia (3,6,11)	Dianthus (3,7,11)	Juniperus tortulosm (11)	Plum, nonbearing** (3,6,8)
Bottle Brush (8)	Day Lily (11)	Lantana (7,11)	Poinsettia***(3,6,11)
Blue Daze (11)	Delphinium (3,5,11)	Ligustrum (11)	Rabbit's Foot Fern (3,11)
Brachycome (11)	Dusty Miller (11)	Lilac (3,11)	Rose (2,3,4,6,7,8,11)
Caladium (11)	Dwarf Ivy (11)	Liriope (11)	Salvia (6)
Cast Iron Plant (11)	Geranium (3,6)	Marigold (3,11)	Snapdragon (1,3,4,5,6)
Catnip (3,5,11)	Hawthorn (3,5,9)	Mint (6)	Verbena (3,4,6,11)
Celosia (3,11)	Hawthorn, Indian (11)	Moonflower (11)	
Cherry, nonbearing** (6,8)	Heather, Mexican (11)	Nandina (11)	

Notes: * **COMPASS O** may cause injury to Petunia, Violet, and New Guinea Impatiens. * * Do not apply **COMPASS O** to fruit trees that will bear harvestable fruit within 12 months of the last application. * * * Use of **COMPASS O** on Poinsettia after bract formation may cause injury to bracts.

ORNAMENTAL DISEASE CONTROL

COMPASS O is a broad-spectrum fungicide for the control of certain foliar, stem, and root diseases of ornamentals grown in interiorscapes, field nursery plantings, forest nurseries, greenhouses, lath and shadehouses, containers, and other enclosed structures.

Foliar Diseases: COMPASS O will control foliar diseases of ornamentals when applied as a foliar spray. Apply **COMPASS O** at 1 - 4 oz./100 gals. to the point of drip and repeat at 7 to 14 day intervals until the threat of disease is over. Start applications when conditions are favorable for disease development and continue until the threat of disease is over.

Damping off of New Seedlings: COMPASS O will control damping off of new seedlings caused by *Rhizoctonia solani* when applied as a drench to seedlings and transplants. Drench the growth media at a rate of 1/2 oz./100 gals. Repeat every 21 - 28 days. If *Pythium* spp. are also present, **COMPASS O** should be mixed with a Pythium control fungicide.

The plants that **COMPASS O** has been tested on, diseases that are controlled, and specific directions for use are listed in Tables 1, 2, and 3. Refer to Table 1 for information on ornamentals and diseases that have been evaluated, Table 2 for specific pathogens controlled, and to Table 3 for specific guidelines on the rates and timing of application.

NOTICE TO USER: Plant tolerance to **COMPASS O** has been found to be acceptable on all that is has been tested on with the exception of Petunia, Violets, and New Guinea impatiens. Due to the large number of species and varieties of ornamentals and nursery plants, it is impossible to test every one for tolerance to **COMPASS O**. Neither the Manufacturer nor the Seller has determined whether or not **COMPASS O** can be used safely on ornamental plants not specified on this label. The professional user should determine if **COMPASS O** can be used safely prior to commercial use. In a small area test the recommended rates on a small number of plants for phytotoxicity prior to widespread use. Before using **COMPASS O** in tank mixture with other products, test the mixture on a small number of plants for phytotoxicity prior to widespread use.

Before using **COMPASS O** on plants for diseases that are not listed in the Directions for Use, test **COMPASS O** on a small scale first.

Table 2. Common and scientific names of diseases controlled by COMPASS O.

Common Name	Scientific Name
1. Anthracnose (B)	*Colletotrichum* spp.
2. Black spot (B)	*Diplocarpon rosae*
3. Botrytis (B)	*Botrytis* spp.
4. Downy Mildew (A)	*Peronospora* spp.
5. Leaf spot (B)	*Septoria* spp.
6. Powdery mildew (A)	*Erysiphe* spp. *Microsphaera* spp. *Oidium* spp. *Podosphaera* spp. *Sphaeratheca* spp.
7. Rust (B)	*Gymnosporangium* spp. *Phragmidium* spp.
8. Scab (B)	*Cladosporium* spp.
9. Scab (B)	*Venturia inaequalis*
10. Myrothecium (A)	*Myrothecium* spp.
11. Rhizoctonia root rot (C)	*Rhizoctonia solani*

Table 3. Specific use directions for selected pathogens.

A. Apply **COMPASS O** as a foliar spray at 1/2 oz. /100 gals. to the point of drip before disease is detected or when conditions are favorable for disease development. Continue at 7 - 14 day intervals until the threat of disease is over.

B. Apply **COMPASS O** as a foliar spray at 2 - 4 oz. /100 gals. to the point of drip before disease is detected or when conditions are favorable for disease development. Continue at 7 to 14-day intervals until the threat of disease is over. Under heavy pressure, use the highest rate and the shortest interval. Under light disease pressure, the application interval may be extended.

C. Apply 1/2 oz. /100 gals. as a drench to wet the upper 1/2 of the growing media. Start the application at the time of seedling, again at transplanting and at 21 to 28-day intervals thereafter.

Resistance Management for Ornamentals

COMPASS O is a modern, site-specific fungicide belonging to the strobilurin class of chemistry. Fungal pathogens are known to develop resistance to fungicides with a specific mode of action. When site-specific fungicides are introduced without a clear resistance management strategy, resistance development may be rapid, particularly with greenhouse use.

COMPASS O exhibits cross-resistance to other strobilurins and fungicides within the **S**trobilurin **T**ype **A**ction and **R**esistance group (**STAR** compounds), but there is no known cross-resistance to fungicides of other classes including sterol inhibitors, dicarboximides, benzimidazoles, anilinopyrimidines, phenylpyrroles, or phenylamides.

Many fungi which attack ornamentals and flowering plants including Botrytis and powdery mildews have a history of fungicide resistance development. Because resistance development cannot be predicted, implementation of suitable strategies to manage the resistance risk to **COMPASS O** is needed. To minimize the risk of resistance development to **COMPASS O**, the following practices are recommended.

1. Use **COMPASS O** preventively.
2. For Leaf Spots and diseases other than Powdery Mildew, Downy Mildew, and Botrytis:
   A. Use no more than two (2) applications of **COMPASS O** before rotating to another effective product that is not in the strobilurin class of chemistry for two (2) applications before rotating back to **COMPASS O**.

      OR

   B. Rotate to another fungicide or nonstrobilurin chemistry after each **COMPASS O** application.
3. For Powdery Mildew, Downy Mildew, and Botrytis:
   A. Between each **COMPASS O** application, make two (2) applications of a fungicide of nonstrobilurin chemistry before rotating back to **COMPASS O**.

      OR

   B. Rotate to another fungicide of nonstrobilurin chemistry after each **COMPASS O** application
4. Make no more than four (4) foliar applications of **COMPASS O** per crop cycle or season for each at risk pathogen. Soil applications are independent of this limit.
5. Do not use **COMPASS O** for disease control in vegetables grown in greenhouses for crop production or in vegetable production of transplants for outdoor use.

Restrictions

1. For ground application, a minimum of 50 gals./A is recommended.
2. For aerial application, a minimum of 10 gals./A is recommended.
3. To avoid spray drift, do not apply when conditions favor drift beyond the target area. Avoid spray overlap.
4. For information on spray equipment and calibration, consult sprayer manufacturers and state recommendations. For specific local directions and spray schedules, consult the current state agricultural experiment station recommendations.
5. Use of spray additives are not required. Any spray additive should be evaluated prior to use. Do not use in conjunction with organosilicate-based products, or plant injury may occur. Label directions are based on data with no additives.

Maximum Use Rates in Ornamentals

1. For plants grown in outdoor nurseries, outdoor seedbeds, field plantings, and landscapes, up to 34 1/2 oz. of **COMPASS O** for acre of production or acre of landscape per ear or crop cycle can be used.
2. For seedlings and plants grown in greenhouses, containers, and other enclosed structures, up to 120 oz. of **COMPASS O** per acre per year or crop cycle can be used. In California only, do not apply more than 34 1/2 oz. of **COMPASS O** per acre per year or crop cycle to seedlings and plants grown in greenhouses, containers, and other enclosed structures.
3. For foliar applications, do not apply more than 8 oz. of **COMPASS O** per acre per application.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: 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 locked storage area.

Handle and open container in a manner as to prevent spillage. If the container is leaking or material spilled for any reason or cause, carefully sweep material into a pile. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Dispose of pesticide as directed below. In spill or leak incidents, keep unauthorized people away. You may contact the Bayer Emergency Response Team for decontamination procedures or any other assistance that may be necessary. The Bayer Kansas City Emergency Response Telephone No. is 80-414-0244 or contact Chemtrec at 800-424-9300.

PESTICIDE DISPOSAL: Pesticide wastes may be 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 instruction, 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 DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

OLYMPIC HORTICULTURAL PRODUCTS™

Manufactured for:
Olympic Horticultural Products Company
P. O. Box 230
Mainland, PA 19451
(800) 659-6745

OHP 981558 6/01SL

MATERIAL SAFETY DATA SHEET

OLYMPIC HORTICULTURAL PRODUCTS, CO.
P.O. BOX 230, MAINLAND, PA 19451
800-659-6745

Date prepared: 12/06/2000

TRANSPORTATION EMERGENCY
CALL CHEMTREC . . . . . .(800)-424-9300
DISTRICT OF COLUMBIA . . . . . .(202)-483-7616

NON-TRANSPORTATION
OLYMPIC EMERGENCY PHONE . . . . . .(800)-356-4647
OLYMPIC INFORMATION PHONE . . . . .(800)-659-6745

COMPASS™ O 50 WDG

EPA Registration Number: 3125-560-59807

I. CHEMICAL PRODUCT IDENTIFICATION:

PRODUCT NAME . . . . . .: COMPASS O 50 WDG

CHEMICAL NAME . . . . . .: Benzeneacetic acid, (E,E)-palpha-(methoxyimino)-2-((((1-(3-trifluoromethyl)phenyl) ethylidene)amino)oxy)methyl)-,methyl ester

SYNONYMS . . . . . .: Trifloxystrobin

PRODUCT USE . . . . . .: Fungicide

II. COMPOSITION/INFORMATION ON NAME INGREDIENTS:

INGREDIENTS

/CAS NUMBER EXPOSURE LIMITS CONCENTRATION (%)

******* HAZARDOUS INGREDIENTS *******

Trifloxystrobin

141517-21-7 OSHA: Not Established 50.0%
ACGIH: Not Established

Surfactant
Specific chemical identity is withheld as a trade secret.
OSHA: Not Established % Not Noted
ACGIH: Not Established

Sodium Sulfate
OSHA: Not Established % Not Noted
ACGIH: Not Established

Antifoam Agent
Specific chemical identity is withheld as a trade secret.
OSHA: Not Established % Not Noted
ACGIH: Not Established

Pergopak M
OSHA: Not Established % Not Noted
ACGIH: Not Established

Surfactant
Specific chemical identity is withheld as a trade secret.
OSHA: Not Established % Not Noted
ACGIH: Not Established

Wetting Agent
Specific chemical identity is withheld as a trade secret.
OSHA: Not Established % Not Noted
ACGIH: Not Established

Carrier (contains crystalline silica)
OSHA: .10 mg/m3 TWA (respirable) % Not Noted
ACGIH: 10 mg/m3 TWA (respirable)

III. HAZARDS IDENTIFICATION:

EMERGENCY OVERVIEW CAUTION!

COLOR . . . . . .: Grey to beige

FORM . . . . . .: Solid Granules

ODOR . . . . . .: Weak odor, indeterminate.

POTENTIAL HEALTH EFFECTS:

ROUTE(S) OF ENTRY . . . . . .: Inhalation; Skin Contact; Skin Absorption; Eye Contact

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE EFFECTS OF EXPOSURE: Based on animal studies, this material is slightly toxic by the oral and dermal routes of exposure. It is not irritating to the eyes or skin. A skin sensitizing (allergic) reaction may occur in some individuals.

CHRONIC EFFECTS OF EXPOSURE: This product contains respirable crytalline silica. Excessive long-term exposure to respirable crystalline silica may cause silicosis, a form of progressive pulmonary fibrosis. Severe and permanent lung damage may result.

CARCINOGENICITY: This product is not listed as a carcinogen by NTP or IARC, or regulated as a carcinogen by OSHA. However, it may contain crystalline silica (quartz), a substance which is classified by NTP as a Group 2 carcinogen and by IARC as a Group I carcinogen. Crystalline silica is a naturally-occurring mineral component of many sands and clays. Although controversial, the carcinogenic potential of crystalline silica must be considered if it is inhaled under excessive exposure conditions. However, the respirable portion of the silica which may be contained in this product is small, such that excessive inhalation exposure during normal conditions of use is unlikely.

NTP: Crystalline silica is classified as an NTP Anticipated Human Carcinogen - "Substances or groups of substances that may reasonably be anticipated to be carcinogens."

IARC: IARC has classified crystalline silica as a Group 1 carcinogen. "There is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica (quartz) from occupational sources."

OSHA: Not regulated

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with allergic history or pre-existing dermatitis should use extra care in handling this product. Pulmonary and respiratory diseases may be aggravated by exposure to respirable crystalline silica.

MATERIAL SAFETY DATA SHEET

COMPASS™ O 50 WDG

EPA Registration Number: 3125-560-59807

IV. FIRST AID MEASURES:

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

FIRST AID MEASURES continued

FIRST AID FOR SKIN: 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.

FIRST AID FOR INHALATION: 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 information.

FIRST AID FOR INGESTION: Call poison control center or doctor im-mediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by physician or poison control center. Do not give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: There is no specific antidote if this product is ingested. Treat symptomatically. An aqueous suspension of activated charcoal can be administered to absorb remaining toxicant.

V. FIRE FIGHTING MEASURES:

FLASH POINT . . . . . .: Not Applicable

AUTO-IGNITION TEMPERATURE . .: 320° C

EXTINGUISHING MEDIA . . . . . .: Dry Chemical; Foam; Carbon Dioxide

SPECIAL FIRE FIGHTING PROCEDURES . . . . . .: Wear full protective clothing andself-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated.

UNUSUAL FIRE / EXPLOSION HAZARDS . . . . . .: None Known

VI. ACCIDENTAL RELEASE MEASURES:

SPILL OR LEAK PROCEDURES . . .: Wear chemical safety glasses with side shields or chemical goggles, rubber gloves, rubber boots, long-sleeved shirt, long pants, head covering, and use of particulate filter, NIOSH approved per 42 CFR Part 84. Select N or R or P type as appropriate for the oil characteristics of any other air contaminants present. Filter efficiency may range from 95 - 99.97% as appropriate for the size distribution of dusts present. For small spills, sweep up, keeping dust to a minimum, and place in an approved chemical container. Wash the spill area with water containing a strong detergent, absorb with pet litter or other absorbent material, sweep up and place in a chemical container. Seal the container and handle in an approved manner. Flush the area with water to remove any residue. Do not allow wash water to contaminate water supplies.

VII. HANDLING AND STORAGE

STORAGE TEMPERATURE . . . . . .: Not Noted

SHELF LIFE . . . . . .: Not Noted

SPECIAL SENSITIVITY . . . . . .: Not Noted

HANDLING/STORAGE PRECAUTIONS . . . . . .: Store the material in well-ventilated, secure area out of the reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco usage, and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

VIII. PERSONAL PROTECTION:

REQUIRED WORK/ HYGIENE PROCEDURES . . . .: The following recommendations for exposure control/personal protection are intended for the manufacture, formulation and packaging of the product. For end-use applications consult the product label.

EYE PROTECTION REQUIREMENTS . . . . . .: To avoid eye contact, wear safety glasses with side shields or chemical goggles.

SKIN PROTECTION REQUIREMENTS . . . . . .: To avoid skin contact, wear rubber gloves, rubber boots, long-sleeved shirt, long pants and a head covering.

RESPIRATOR REQUIREMENTS . . .: To avoid breathing dust, use a particulate filter, NIOSH approved per 42 CFR Part 84. Select N or R or P type as appropriate for the oil characteristics of any other air contaminants present. Filter efficiency may range from 95-99.97% as appropriate for the size distribution of dusts present.

ADDITIONAL PROTECTIVEMEASURES . . . .: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

IX. PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL FORM . . . . . .: Solid

APPEARANCE . . . . . .: Granules

COLOR . . . . . .: Grey to beige

ODOR . . . . . .: Weak odor, indeterminate

pH . . . . . .: 9-11 (1% suspension in water)

BOILING POINT . . . . . .: Not Applicable

MELTING/FREEZING POINT . . . . . .: 70.9° C

SOLUBILITY IN WATER . . . . . .: Not Available (trifloxystrobin)

SPECIFIC GRAVITY . . . . . .: Not applicable

BULK DENSITY . . . . . .: 0.60 g/cm3 @ 25° C

VAPOR PRESSURE . . . . . .: Not Available (trifluoxystrobin)

X. STABILITY AND REACTIVITY:

STABILITY . . . . . .: This is a stable material.

HAZARDOUS POLYMERIZATION . .: Will not occur.

INCOMPATIBILITIES . . . . . .: Not known

MATERIAL SAFETY DATA SHEET

COMPASS™ O 50 WDG

EPA Registration Number: 3125-560-59807

INSTABILITY CONDITIONS . . . . . .: Not known

DECOMPOSITION PRODUCTS . . . .: None known

XI. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

ORAL LD50: Rat: >4,000 mg/kg body weight

DERMAL LD50: Rabbit: >2,000 mg/kg body weight

INHALATION LC50: Rat: Not available

EYE EFFECTS: Rabbit: Non-irritating

SKIN EFFECTS: Rabbit: Non-irritating

SENSITIZATION: Guinea Pig: Sensitizing

SUBCHRONIC TOXICITY: Trifloxystrobin: Liver, pancreas, gall bladder, and spleen effects at high dose.

CHRONIC TOXICITY: Not Available

CARCINOGENICITY:

Trifloxystrobin: Not Available

MUTAGENICITY:

Trifloxystrobin: Negative in Ames, CHO, Rat Hepatocytes and Mouse Micronucleus.

DEVELOPMENTAL TOXICITY:

Trifloxystrobin: Developmental delays and fetal toxicity at maternally toxic dose.

REPRODUCTION:

Trifloxystrobin: None Observed

XII. ECOLOGICAL INFORMATION:

The ecological effects of this material have been thoroughly evaluated. Contact Bayer for specific information. In event of a spill emergency, call the Bayer Emergency Response Number at 1.800.414.0244.

XIII. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD . . . . .: Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

XIV. TRANSPORTATION INFORMATION:

TECHNICAL SHIPPING NAME . . . .: Fungicide

FREIGHT CLASS BULK . . . . . .: Insecticides or Fungicides; Agricultural, N.O.S.

FREIGHT CLASS PACKAGE . . . . . .: Insecticides or Fungicides; Agricultural, N.O.S.

PRODUCT LABEL . . . . . .: COMPASS O 50 WDG

DOT (DOMESTIC SURFACE)

HAZARD CLASS OR DIVISION . .: Non-Regulated

IMO / IMDG CODE (OCEAN)

HAZARD CLASS DIVISION NUMBER . . . . . .: Non-Regulated

ICAO / IATA (AIR)

HAZARD CLASS DIVISION NUMBER . . . . . .: Non-Regulated

XV. REGULATORY INFORMATION:

OSHA STATUS . . . . . .: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS . . . . . .: This product is exempt from TSCA Regulation under FIFRA Section 3 (2)(B)(ii) when used as a pesticide.

CERCLA REPORTABLE QUANTITY . . . . . .: None

SARA TITLE III:

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: None

SECTION 311/312 HAZARD CATEGORIES: Immediate Health Hazard; Delayed Health Hazard

SECTION 313 TOXIC CHEMICALS: None

RCRA STATUS . . . . . .: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determineat the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

XVI. OTHER INFORMATION:

NFPA 704M RATINGS:

Health	Flammability	Reactivity	Other
1	1	0	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

Olympic's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. NFPA ratings are provided by Olympic as a customer service.

REASON FOR ISSUE . . . . . .: Create new MSDS

APPROVAL DATE . . . . . .: 12/06/2000

SUPERSEDES DATE . . . . . .: None

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Olympic Horticultural Products, Co. The data on this sheet relates only to the specific material designated herein. Olympic Horticultural Products, Co assumes no legal responsibility for use or reliance upon these data.

OLYMPIC HORTICULTURAL PRODUCTS™

MSDS OHP 981558 6/01

CYCOCEL®

OLYMPIC HORTICULTURAL PRODUCTS™

Plant Growth Regulant — SPECIMEN LABEL

FOR USE ON ORNAMENTALS

ACTIVE INGREDIENT:	
Chlormequat (2-chloroethyl)trimethylammonium chloride.....	11.8%
INERT INGREDIENTS.....	88.2%
	100.0%

(1 gallon contains 1 pound (2-chloroethyl) trimethylammonium chloride)

EPA Reg. No. 241-74-59807 **EPA Est. No. 5905-AR-01**

Net Contents: One Quart or One Gallon

KEEP OUT OF REACH OF CHILDREN

CAUTION!/¡PRECAUCION!

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

In case of emergency endangering life or property involving this product, call collect, day or night, Area Code 201-835-3100.

MANUFACTURED FOR:

Olympic Horticultural Products Co., P. O. Box 230, Mainland, PA 19451

STATEMENT OF PRACTICAL TREATMENT

If Swallowed: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of the throat with a finger. DO NOT induce vomiting or give anything by mouth to an unconscious person. Avoid alcohol.

If in Eyes: Flush eyes with pleny of water. Call a physician if irritation persists.

If on Skin: Flush with plenty of water. Get medical attention if irritaiton persists.

Note to physician: The use of Atropine is contraindicated.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION!

Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes, or clothing.

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.
- 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

This product is toxic to wildlife. Keep out of lakes, streams and ponds. **DO NOT** contaminate water when disposing 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.

Observe all Precautionary Statements, Limitations, and Application instructions on the CYCOCEL plant growth regulant package label.

DO NOT apply this product through any type of irrigation system.

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.

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, waterproof gloves, shoes plus socks.

GENERAL INFORMATION

Read all sections of this label before using CYCOCEL.

CYCOCEL is a plant growth regulator for use on ornamentals in greenhouses. CYCOCEL enhances the crops aesthetic appeal and improves durability during postproduction shipping and handling. Treated crops are more compact with shorter internodes, stronger stems and greener leaves.

CYCOCEL should be used on healthy plants grown under proper conditions and is not a replacement for good cultural practices. CYCOCEL contains a wetting agent; therefore, additional wetting agents are not needed. If any adjuvants or other chemicals are applied with CYCOCEL, small test areas should be treated first to insure that no crop injury will occur. Plants treated with CYCOCEL may use less water, and irrigation schedules may need to be adjusted to prevent over irrigation.

GROWTH REGULATION WITH CYCOCEL: CYCOCEL will normally reduce internode elongation for a period of 1 to 3 weeks following spray treatment, depending on crop culture, environmental conditions and plant growth habit. Multiple applications can be applied as needed. CYCOCEL has greatest effect on final plant height when

CYCOCEL®

applied at the beginning of rapid stem elongation and will have less effect if applied when shoots are not elongating or at the end of an elongation phase. CYCOCEL application rate, timing and frequency should be adjusted depending on individual grower preferences for crop development.

SPRAY APPLICATIONS: In spray applications, CYCOCEL enters the plant through young expanding leaves, mature leaves and stems. Maximum effect occurs when CYCOCEL is applied to thoroughly cover plant leaves and stems. The spray volume providing thorough plant coverage will vary with plant size and foliage cover, but generally is between 2 and 3 quarts of spray solution per 100 square feet of bench space. Greater spray volumes that result in heavy runoff of spray solution from the plant are a waste of chemical and are undesirable. CYCOCEL can be applied in light spray volumes at about 1 quart per 100 square feet, which will reduce growth of upper lateral shoots and have less effect on lower shoots that receive less CYCOCEL spray.

CYCOCEL penetrates into the plant to provide maximum effect while the spray solution stays wet. Therefore, greater effect is obtained if sprays are applied under conditions that support slow drying of spray solutions. It is desirable to time CYCOCEL applications so that overhead irrigation or rain will not occur for a period of 6 hours after sprays are applied.

Unless otherwise stated in the section under specific crops, CYCOCEL spray application rates range from 800 to 4,000 ppm depending on the crop and individual user's desired results. The suggested initial CYCOCEL rate for small-scale trials is 1,250 ppm. All references to ppm are based on total CYCOCEL product.

CYCOCEL PHYTOTOXICITY: Foliar spray applications of CYCOCEL often will cause slight yellowing near leaf margins or at the tip of leaves that are small and rapidly enlarging at time of application. The discoloration appears about 3 to 5 days after the spray treatment. Mature leaves at time of spray and leaves formed after application are not affected. Discolored areas usually regain most or all green color by the end of the crop cycle. The degree of yellowing is related to CYCOCEL application rate. The lowest rates do not cause any phytotoxicity or temporary discoloration. Before application rates of 1,500 ppm or greater are used, trials should be conducted to insure that the amount of leaf spotting is not unacceptable to the user. CYCOCEL application rates that are too high may cause brown necrotic areas on leaf margins, which will not recover green color. If the amount of yellowing is too great, CYCOCEL application rates should be lowered to reduce phytotoxicity or temporary discoloration and more frequent applications at lower rates made to achieve desired height control.

Users should not apply CYCOCEL near the end of a crop unless they have conducted adequate trials to insure the CYCOCEL rate is low enough to avoid an undesirable appearance during the sales period.

DRENCH APPLICATIONS: CYCOCEL can be applied as a drench to the growing medium. It is taken up by the plant through the roots and transported to the stem tips where it is active. Drench applications do not cause leaf yellowing and provide longer and more uniform control of stem elongation. In a drench treatment, it is the total amount of CYCOCEL active ingredient applied to each container that determines the reduction in stem elongation. Therefore, users must insure that both the amount of solution applied to each container and the concentration of CYCOCEL in ppm are correct.

Drenches should be applied so that the potting medium is uniformly saturated or non uniform heights will result when there are multiple plants in a container. Apply the drench to a moist medium and not when crops need irrigation. A good procedure is to irrigate crops one day and apply the CYCOCEL drench the next day.

CYCOCEL application rates for drench treatments range from 2,000 to 4,000 ppm of CYCOCEL. Users should do trials to determine the optimum rates under their particular conditions. The following table gives suggested volumes of dilute CYCOCEL solution to be applied to different size containers. The volumes applied can be altered, if the user has established the effect of different volumes through their own small-scale trials.

Pot diameter (inches)	Fluid ounces of dilute solution per pot	Number of pots treated with 1gal. of solution
2 1/4 to 3	2	64.0
4	3	42.5
5	4	32.0
6	6	21.5
8	8	16.0

FACTORS AFFECTING ACTIVITY OF CYCOCEL

Plant growth and response to CYCOCEL is altered by several factors. The optimum CYCOCEL rate and frequency of application will vary depending on how the crop is grown.

ENVIRONMENTAL FACTORS: Crops produced under low light levels and/or high humidity conditions will have a less compact growth habit and will generally require more CYCOCEL than the same crop produced at higher light levels and/or low humidities. Likewise, crops produced at higher temperatures or higher DIF (difference between day and night temperatures) will generally have greater stem elongation and require more CYCOCEL to produce the desired final plant height.

CULTURAL FACTORS: Crops grown with greater amounts of irrigation, higher fertilization rates, or high amounts of ammoniacal nitrogen will be more lush and taller than crops grown "harder" with less irrigation, lower fertilizer, and predominately nitrate-nitrogen. The more lush crops normally require higher amounts of CYCOCEL or more frequent applications. Plants that are spaced close together will elongate rapidly when leaves begin to overlap, and more CYCOCEL is needed under these conditions to produce plants with the desired final heights.

The production schedule for photoperiodic crops and varieties, such as poinsettias and chrysanthemums, influences final plant size, and the amount of chemical needed to achieve the desired final plant height will vary with the production schedule. Crops that are grown under long schedules with more time between planting and start of flower initiation or between final pinch and flower initiation will be taller than crops grown using short production schedules.

VARIETY DIFFERENCES: Varieties within a species often vary greatly in their growth habits and the amount of CYCOCEL required for optimum final height. Also, colors within a bedding plant series will vary in sensitivity to CYCOCEL. Generally, more vigorous, taller varieties require greater amounts of CYCOCEL than do less vigorous, shorter varieties. Users should consult with plant and seed suppliers and breeder companies for information on growth habit of varieties with which the user is not familiar.

DETERMINING OPTIMUM CYCOCEL USAGE

The optimum usage of CYCOCEL varies depending on the crop, the individual user's production situation and the desired final plant height and appearance. Users should determine the optimum CYCOCEL rate, timing, and frequency under their individual production situations. Users should obtain experience in small-scale trials under the different conditions where CYCOCEL is to be used before CYCOCEL is used on an entire crop. The CYCOCEL rates recommended in this label are general guidelines to be used by growers in trials to determine specific, optimum usage appropriate for their operations.

PREPARATION OF CYCOCEL SOLUTIONS

For Spray and Drench Applications

Concentration (ppm)*	CYCOCEL (fl. oz./ gal	CYCOCEL (mL / gal)	CYCOCEL (mL / L)
200	0.22	6.4	1.7
460	0.50	14.7	3.9
800	0.87	25.7	6.8
1,000	1.08	32.1	8.4
1,250	1.36	40.1	10.6
1,500	1.63	48.1	12.7
2,000	2.17	64.2	16.9
3,000	3.25	94.2	25.4
4,000	4.34	128.0	33.9

*ppm calculations based on total CYCOCEL product.

POINSETTIAS

CYCOCEL can be used to reduce stem elongation of all poinsettia varieties. It can be applied as needed to stock plants, cuttings during propagation, and before or after pinching plants grown for flowering.

Response of poinsettias to CYCOCEL varies with variety and geographical region of the United States. Higher rates and more frequent applications are needed in warmer production areas. For natural-season crops in the North, CYCOCEL should not be used after October 15, except that reduced rates can be used until October 21 if conditions are warm and sunny. In the South, CYCOCEL should not be used after November 1. Late application times or excessive rates can cause reduced bract size and/or delayed flowering. If the crop is being produced for other than natural season, the last application should be no later than 6 weeks prior to flower maturity.

Spray applications can be made at rates between 800 and 1,500 ppm. Multiple applications may be made as needed at intervals between 3 and 14 days. Frequent reapplication may be needed if lowest application rates are used. At rates of 1,000 to 1,500 ppm, less frequent reapplication is needed. Higher CYCOCEL rates between 1,500 and 3,000 ppm often result in considerable leaf yellowing and are not frequently used, but may be applied if the user has adequately evaluated these rates.

Drench applications can be made to poinsettias using the procedures given in the Drench Applications section of this label. Drench application rates are 3,000 to 4,000 ppm. Drench treatments should not be made after the critical cut off dates given above for CYCOCEL applications to poinsettias.

GERANIUMS

CYCOCEL is recommended for controlling plant size of seed geraniums and vegetatively propagated geranium types. CYCOCEL is, also, recommended for inducing early flowering of seed geraniums.

CYCOCEL spray application rates on geraniums are from 800 to 1,500 ppm. Generally, first applications are made 2 to 4 weeks after planting plugs or rooted cuttings, after stems have started elongating. Multiple applications can be made as needed. To promote earlier flowering of seed geraniums, use 1,500 ppm. Make two spray applications at 35 and 42 days after seeding. Treated plants show decreased days to flowering, compact growth and more lateral breaks.

BEDDING PLANTS

CYCOCEL will effectively control the stem elongation of a wide variety of bedding plant crops grown in packs, pots, hanging baskets, and plug trays.

The growth rate of bedding plant crops varies greatly depending on growers' cultural practices. The use of CYCOCEL must be altered depending on grower practices and desired final plant size. Plant growth after transplanting is affected by the amount of CYCOCEL or other growth regulator applied to the plant during the plug stage. Therefore, use of CYCOCEL during the plug stage will reduce the amount needed after transplanting.

CYCOCEL spray application rates on bedding plants are 800 to 1,500 ppm, but may be increased up to 3,000 ppm after extensive trials to evaluate the effects of higher rates. First CYCOCEL sprays should not be applied until after transplanted plugs begin to grow and amount of growth control needed can be determined. For bedding plants in seedling stage, users should start evaluating CYCOCEL at one-half the rate used on finished bedding plants.

CYCOCEL will reduce the stem elongation on these and other bedding plant crops:

Ageratum	Jerusalem cherry
Celosia	Marigold
Dahlia	Nasturtium
Dianthus	Salvia
Cleome	Sunflower
Coleus	Verbena
Gomphrena	Vinca
Hypoestes	Zinnia

OTHER HERBACEOUS CROPS

CYCOCEL can be used to reduce stem elongation in other herbaceous crops not specifically listed, such as flowering potted plants, tropical and temperate perennials, and foliage plants. CYCOCEL can be applied to these crops either as a foliar spray or drench to the growing medium. The optimum CYCOCEL rate, timing of application and frequency will vary for different crops and amount of height control desired by individual users. Users should conduct trials with a small number of plants before CYCOCEL is used on entire crops.

Examples of other herbaceous crops that can be treated with CYCOCEL:

Achimenes	Ivy
Aster	Kalanchoe
Astilbe	Lilium spp.
Begonia, hiemalis	Morning glory
Begonia, tuberous	Pachystachys
Calceolaria	Pilea spp.
Carnation	Pentas
Chrysanthemum	Salvia spp.
Columbine	Schefflera
Easter Lily	Sedum spp.
Gynura aurantiaca	Sunflower

HIBISCUS

CYCOCEL is recommended to improve flowering and to produce compact plants with uniform shoot growth of *Hibiscus* spp. The CYCOCEL spray application rate range is between 200 and 600 ppm depending on variety growth habit and amount of control desired. Users should start with 460 ppm in trials. CYCOCEL should be applied in multiple applications to produce most uniform growth. CYCOCEL can be applied once before first and second pinches to produce more compact plants before final pinch. To produce the most compact flowering plants (height less than 18" in 6-inch pot), 3 to 4 applications may be needed after the final pinch, and first application should be made when laterals are 0.5 to 1 inch long.

AZALEAS

CYCOCEL produces earlier budded plants with multiple buds per shoot. Treated azaleas also have more compact, symmetrical heads. For crops produced out of season in a year-round production system, CYCOCEL can be used to induce flower bud set.

Azalea growth habit and response to CYCOCEL varies with variety, geographical region and production system. Optimum CYCOCEL spray rates generally range between 1,000 and 2,000 ppm in most situations, but may range to 4,000 ppm in some cases. Two to six multiple applications may be needed starting 3 to 5 weeks after last pinch (when laterals are about 2 inches long). Treated plants may flower a few days later than nontreated plants.

OTHER WOODY FLOWERING CROPS

Other woody flowering crops can be treated with CYCOCEL to produce more compact growth and earlier flower bud initiation. Plants can be treated prior to pinching or after the last pinch, as needed. Optimum application rates, timing and frequency will be different for different crops. Users should evaluate CYCOCEL in small-scale trials to determine how best to apply it under their individual situations.

Examples of flowering woody crops that can be treated with CYCOCEL:

Baleria cristata	Hydrangea
Bougainvillea	Lantana
Camellia	Potted rose
Gardenia	Pseuderanthemum lactifolia
Fuchsia	Rhododendron
Hollies	

CYCOCEL/B-NINE[1] TANK MIX

On crops that are not very sensitive to CYCOCEL or when an excessive number of applications are required, a tank mix of CYCOCEL and B-Nine can be applied. **Users should recognize that this tank mix of CYCOCEL and B-Nine is more active than using either chemical alone.** Users of the tank mix should follow the guidelines given on the labels of both products. The tank mix is to be applied only as a foliar spray. Optimum rates of each product will vary depending on the crop, the user's preference for height control, and the individual production situation as described for using CYCOCEL alone. Users must test the use of the tank mix on a small scale before general use.

APPLICATION RATES

The application rate for CYCOCEL and B-Nine can be altered to adjust the degree of height reduction resulting from a spray treatment. In general, the highest CYCOCEL rate that does not cause excessive leaf yellowing can be used, and then the B-Nine rate can be raised or lowered to adjust the activity of the tank mix application.

The following table gives a range of application rates for CYCOCEL and B-Nine to use in establishing trials.

CYCOCEL and B-Nine tank mix spray rates:

Activity	CYCOCEL (ppm)	B-Nine (ppm)
Very High	1,500	5,000
High	1,500	2,500
Medium	1,250	1,250
Low	1,000	800

CONSIDERATIONS IN USING THE TANK MIX

1. Bedding plants and general crops
   The CYCOCEL and B-Nine tank mix is active on a wide range of crops. Users must evaluate its use under their individual production situations. The tank mix can be used on bedding plant plugs such as pansy and vinca with low risk of excessive reduction in size. It can be used at higher rates on plug crops such as salvia, marigold, and dahlia that require stronger chemical activity to produce desired height control.
2. Geraniums
   The addition of B-Nine to CYCOCEL does not greatly enhance the height control achieved on geraniums.
3. Impatiens
   The CYCOCEL and B-Nine tank mix has low activity on finished impatiens crops but will provide height control on impatiens plugs.
4. Poinsettias
   Poinsettias are more sensitive to the combination of CYCOCEL and B-Nine than are other crops. **Use of tank mix application rates that are too high or application too late in the crop may cause reduced bract size and/or delayed bract coloring. The very high activity rates of CYCOCEL at 1,500 ppm and B-Nine at 5,000 ppm should not be used on poinsettias.** The high rates of 1,500 ppm CYCOCEL and 2,500 ppm B-Nine can be used on stock plants during the summer or on crops for flowering in the warmest regions. Outside of the warmest regions, growers should use the medium or low activity rates on crops for flowering. In all regions, applications to cuttings in propagation should be at the low or medium rates. **The CYCOCEL and B-Nine tank mix should not be applied to natural season poinsettias after September 25th or after start of short-days in photoperiod-controlled crops. After that date, the B-Nine should be omitted and CYCOCEL used alone as described in the CYCOCEL section of this label.**

DISCLAIMER

The label instructions for use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with 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 use or application of the product contrary to label instructions, all of which are beyond the control of Olympic Horticultural Products Company. All such risks shall be assumed by the user. Olympic Horticultural Products Company warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above.

Any damages arising from a breach of this warranty shall be limited to direct damages and shall not include consequential commercial damages such as loss of profits or values or any other special or indirect damages.

Olympic Horticultural Products Company makes no other express or implied warranty, including any other express or implied warranty of FITNESS or MERCHANTABILITY.

—STORAGE AND DISPOSAL—

DO NOT STORE BELOW FREEZING TEMPERATURES.

STORAGE: DO NOT contaminate water, food or feed by storage.

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

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Manufactured for:
Olympic Horticultural Products Company
P. O. Box 230
Mainland, PA 19451
(800) 659-6745

OHPSL 981661 10/96

MATERIAL SAFETY DATA SHEET

OLYMPIC HORTICULTURAL PRODUCTS

OLYMPIC HORTICULTURAL PRODUCTS, CO.
P.O. BOX 230, MAINLAND, PA 19451
800-659-6745

MSDS NO: AG00647-7
CAS NO:. 000999-81-5
DATE: 01/14/92

TRANSPORTATION EMERGENCY 201-835-3100

NON-TRANSPORTATION
OLYMPIC EMERGENCY PHONE 800-356-4647
OLYMPIC INFORMATION PHONE 800-659-6745

PRODUCT NAME: CYCOCEL® PLANT GROWTH REGULANT

EPA Registration Number 241-74-598 7

I. PRODUCT IDENTIFICATION

TRADE NAME . . . . . .: CYCOCEL Plant Growth Regulant
SYNONYMS . . . . . .: (2-chloroethyl) trimethylammonium chloride. Chlormequat chloride; Chlorocholine chloride; CCC
CHEMICAL FAMILY . . . . . .: Quatenary Ammonia Compound
MOLECULAR FORMULA . . . .: C5 H13 C12 N
MOLECULAR WEIGHT . . . . .: 158.110
USAGE . . . . . .: Growth Regulant

II. WARNING STATEMENTS

CAUTION. KEEP OUT OF REACH OF CHILDREN. HARMFUL IF SWALLOWED. MAY BE ABSORBED THROUGH THE SKIN. AVOID CONTACT WITH THE SKIN, EYES, AND CLOTHING.

III. INGREDIENTS

COMPONENT	CAS. NO.	%	PEL/TV
Chlormequat Chloride	000999-81-5	11.80	None Established
Inerts		88.20	None Established
REFERENCE: Chlormequat Chloride			None
Inerts			None

IV. PHYSICAL PROPERTIES

APPERANCE AND ODOR . .: Colorless to pale yellow liquid; slight fishy odor.
BOILING POINT . . . . . .: 212 F, 100 C
MELTING POINT . . . . . .: Not Applicable
VAPOR PRESSURE . . . . . .: Not Applicable
SPECIFIC GRAVITY . . . . . .: 1.02 (8.52 lbs. per gallon)
VAPOR DENSITY . . . . . .: Not Applicable
% VOLATILITY (BY VOL.) . . .: 88
OCTANOL/H20 PARTITION COEF . . . . . .: Not Applicable
pH . . . . . .: 5.0 +/- 0.2
SATURATION IN AIR (BY VOL) . . . . . .: Not Applicable
EVAPORATION RATE . . . . . .: <1 (Butyl Acetate = 1)
SOLUBILITY IN WATER . . . . .: Complete

V. FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT . . . . . .: >190 F TAG Closed Cup
FLAMMABLE LIMITS (%BY VOL.) . . . . . .: Not Applicable
AUTOIGNITION TEMP . . . . . .: Not Available
DECOMPOSTION TEMP . . . .: Not Available
FIRE EXTINGUISHING MEDIA . . . . . .: This material will not burn or burns with difficulty. Use an extinguishing agent suitable for surrounding fires.
FIRE CONTROL TACTICS . . .: Wear self-contained, positive pressure breathing apparatus and full fire fighting protective clothing.

Keep unnecessary people away. Use as little water as possible. Dike area of fire to prevent pesticide run-off. Use spray or fog - solid stream may cause spreading.

Conduct fire fighting and rescue operations from upwind of the fire area. Evacuate people downwind who may come in contact with smoke, fumes, or contaminated surfaces. Do not decontaminate personnel or equipment, or handle broken packages or containers without protective equipment as specified in the Exposure Control Section. Decontaminate emergency personnel with soap and water before leaving the fire area.

Avoid breathing dusts, vapors and fumes from burning materials. Alert medical personnel to be ready to treat for pesticide poisoning. Control runoff water - if water enters a drainage system, advise the authorities downstream.

VI. NFPA HAZARD RATING

(As Recommended by Olympic Hort. Prod.)

Health	Flammability	Reactivity	Other
2	0	0	

0=Least 1=Slight 2=Moderate 3=High 4=Extreme

VII. REACTIVITY DATA

STABILITY . . . . . .: Stable
CONDITIONS TO AVOID . . . .: To prevent product from freezing, do not store below 32 F (0 C)
POLYMERIZATION . . . . . .: Will not occur
INCOMPATIBLE MATERIALS .: Strong alkalies
HAZARDOUS DECOMPOSITION PRODUCTS . . . . . .: Combustion may produce carbon monoxide, carbon dioxide, hydrogen chloride, and alkylamines.

VIII. HEALTH HAZARD INFORMATION

TOXICITY DATA AND EFFECTS OF OVEREXPOSURE:

ACUTE TOXICITY DATA . .: The acute oral LD50 in male albino rats is greater than 3915 mg/kg indicating that this product is slightly toxic if ingested.

However, this product demonstrates a wide range of LD50's between different animal species with a tendency to be more toxic in higher species such as monkeys and dogs vs. mice and rats. Therefore, it is prudent to assume that it may be at least moderately toxic to humans on ingestion.

The acute dermal LD50 in male albino rabbits is 5075 mg/kg indicating that this product is slightly toxic by single skin applications.

This product is non-irritating to rabbit eyes and skin. Prolonged exposure to aerosols of this product may irritate the respiratory tract.

CHRONIC TOXICITY DATA:

Mutagenicity . . . . . .: No mutagenic activity was observed in CYCOCEL Tech in all test methods used. These included Bacterial/Microsome Reverse Mutation (Ames) Test, Bone Marrow Cells in treated Chinese hamsters, study of the male mouse following oral administration, and mutagenicity in the drosphilia and bacteria.

Teratogenicity . . . . . .: No teratogenic or fetotoxic effects were observed at all dosages tested in mice, rats, and rabbits.

Carcinogenicity . . . . . .: No oncogenic effects were observed in all dose levels tested in rats.
2-chloroethyl trimethylammonium chloride is not listed as a human carcinogen by the IARC, OSHA or NTP.

EMERGENCY AND FIRST AID PROCEDURES:

IF SWALLOWED . . . . . .: Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. Avoid alcohol. Get medical attention.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: CYCOCEL® PLANT GROWTH REGULANT

EPA Registration Number 241-74-598 7

IF ON SKIN . . . . . .: Remove contaminated clothing without delay and wash skin thoroughly with soap and water. Do not reuse clothing without laundering.

IF IN EYES . . . . . .: Immediately flush with plenty of water.

NOTES TO PHYSICIAN . . .: (2-chloroethyl) trimethylammonium chloride is a weak ganglionic stimulant with an action similar to that of nicotine. An effective antidote has not been established.

Based upon animal studies, atropine is definitely contraindicated as it may act synergistically with this choline derivative once poisoning has taken place.

IX. EXPOSURE CONTROL METHODS

During formulation of the product, use the following recommended industrial hygiene practices:

Wear rubber gloves and splash goggles to prevent exposure to skin and eyes. Do not inhale spray mist. Do not eat, drink, or smoke while using this product.

Wash thoroughly with soap and water after handling.

Remove contaminated clothing, launder before reuse.

For end-users, please refer to product label for personal protective equipment/clothing.

X. SPILL OR LEAK PROCEDURES

Cover with an inert absorbent material; sweep up and place in a closed container for disposal. Flush area with water.

WASTE DISPOSAL . . . . . .: Dispose in accord with local, state and federal regulations.

XI. SPECIAL PRECAUTIONS

HANDLING AND STORAGE . .: Do not contaminate water, food, or feed by storage or disposal. Store in a secure, dry, well-ventilated separate room, building or covered area.

Not for use or storage in or around the home.

Keep away from sources of ignition and protect from exposure to fire and heat.

Segregate from oxidizers and imcompatible materials listed in the Reactivity Data Section.

XII. ADDITIONAL REGULATORY INFORMATION

SARA Title III Data

Section 311 and 312 Hazard Categories

Immediate Health Hazard . . . . . .:	Y
Delayed Health Hazard . . . . . .:	N
Fire Hazard . . . . . .:	N
Reactive Hazard . . . . . .:	N
Sudden Pressure Release Hazard . . . . . .:	N
Section 302 Extremely Hazardous Substances .:	None
Section 313 Toxic Chemicals . . . . . .:	None
CERCLA Reportable Quantity . . . . . .:	None

XIII. APPENDIX

CYCOCEL® is a registered trademark of the American Cyanamid Company.

The information and statements herein are believed to be reliable, but are not to be construed as a warranty or representation for which we assume legal responsibility. Users should undertake sufficient verification and testing to determine the suitability for their own particular purpose of any information or products referred to herein. NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE.

DECATHLON 20 WP

OLYMPIC HORTICULTURAL PRODUCTS™

Greenhouse and Nursery Insecticide — SPECIMEN LABEL

FOR COMMERCIAL USE ONLY
FOR BROAD-SPECTRUM CONTROL OF CRAWLING AND FLYING INSECT PESTS ON ORNAMENTALS AND NURSERY STOCK

ACTIVE INGREDIENT:
Cyfluthrin, cyano(4-fluoro-3-phenoxyphenyl)methyl 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate 20%
INERT INGREDIENTS:..... 80%
100%

EPA Reg. No. 3125-430-59807 **EPA Est. No. 3125-MO-1**

Net Weight: 1/2 Pound

STOP - READ THE LABEL BEFORE USE

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUCION AL USUARIO: Si usted no puede leer o entender ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente. (TO THE USER: If you cannot read or understand English, do not use this product until the label has been fully explained to you.)

MANUFACTURED FOR:
Olympic Horticultural Products Co., P. O. Box 230, Mainland, PA 19451

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Causes moderate eye irritation. Harmful if swallowed, inhaled, or absorbed through the skin. Do not get in eyes, on skin, or on clothing. Avoid breathing dust or spray mist.

Do not contaminate feed or food. Do not allow children or pets to enter treated areas until surfaces are dry. Keep out of reach of children.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Water-proof 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:

User should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing 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.

SYMPTOMS OF POISONING: In case of poisoning, call physician or Poison Control Center immediately. Have patient lie down and keep quiet.

STATEMENTS OF PRACTICAL TREATMENT

If in eyes: Hold eyelids open and flush with plenty of water. Call a physician if irritation persists. **If swallowed:** Call a physician or Poison Control Center. Administer water freely and induce vomiting by giving one dose (1/2 oz. or 15 mL) of syrup of ipecac. If vomiting does not occur within 10 to 20 minutes, administer second dose. If syrup of ipecac is not available, induce vomiting by sticking finger down throat. Repeat until vomit fluid is clear. Never give anything by mouth to an unconscious person. Avoid alcohol. **If on skin:** Wash thoroughly with soap and water. Get medical attention if irritation occurs. **If inhaled:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention.

TO PHYSICIAN: No specific antidote is available. Treat the patient symptomatically.

ENVIRONMENTAL HAZARDS

This pesticide is extremely toxic to fish and aquatic invertebrates. Remove from premises or tightly cover fish tanks and disconnect aerators when applying indoors where such containers are present. 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. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters. Apply this product only as specified on this label.

This pesticide is highly toxic to bees exposed to direct treatment or residues on crops or weeds. Do not apply **DECATHLON 20 WP Greenhouse and Nursery Insecticide** or allow it to drift onto crops or weeds on which bees are actively foraging. Additional information may be obtained by consulting your Cooperative Extension Service.

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 intervals. 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.

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 • Waterproof gloves • Shoes plus socks

IMPORTANT: Read these entire Directions and Conditions of Sale before using **DECATHLON 20 WP Greenhouse and Nursery Insecticide**.

DECATHLON 20 WP

CONDITIONS OF SALE: THE DIRECTIONS ON THIS LABEL WERE DETERMINED THROUGH RESEARCH TO BE THE DIRECTIONS FOR CORRECT USE OF THIS PRODUCT. THIS PRODUCT HAS BEEN TESTED FOR A RANGE OF WEATHER CONDITIONS SIMILAR TO THOSE WEATHER CONDITIONS THAT ARE ORDINARY AND CUSTOMERY IN THE GEOGRAPHIC AREA WHERE THE PRODUCT IS USED. INSUFFICIENT CONTROL OF PESTS AND/OR INJURY TO THE CROP TO WHICH THE PRODUCT IS APPLIED MAY RESULT FROM THE OCCURENCE OF EXTRAORDINARY OR UNUSUAL WEATHER, OR FROM FAILURE TO FOLLOW LABEL DIRECTIONS. IN ADDITION, FAILURE TO FOLLOW LABEL DIRECTIONS MAY CAUSE INJURY TO OTHER CROPS, ANIMALS, MAN, OR THE ENVIRONMENT. OLYMPIC OFFERS, AND THE BUYER ACCEPTS AND USES, THIS PRODUCT SUBJECT TO THE CONDITIONS THAT EXTRAORDINARY OR UNUSUAL WEATHER, OR FAILURE TO FOLLOW LABEL DIRECTIONS ARE BEYOND THE CONTROL OF OLYMPIC AND ARE, THEREFORE, THE RESPONSIBILITY OF THE BUYER.

Do not formulate this product into other end-use products.

GENERAL INFORMATION

DECATHLON 20 WP Greenhouse and Nursery Insecticide will not stain or cause damage to any painted or varnished household surface, plastic, fabric or other surface where water applied alone causes no damage.

Add the appropriate amount of product when filling sprayer tank with water, shake or agitate as necessary to mix. Diluted spray mixture can be stored overnight and applied the following day; however, mixture should be agitated prior to application to prevent uneven distribution of product.

One level tablespoonful equals 6 grams. Do not re-use measuring utensils for feed, food, or drinking water purposes.

RECOMMENDATIONS FOR ORNAMENTALS AND NURSERY STOCK

When used at recommended rates and as directed under RECOMMENDED APPLICATIONS, **DECATHLON 20 WP Greenhouse and Nursery Insecticide** will control the designated pests on trees, shrubs, foliage plants and flowers in nurseries and greenhouses as well as outdoor landscaped areas such as parks, recreational areas, athletic fields, institutional grounds, etcs., and interior plantscapes (such as in hotels, shopping malls, office buildings, etc.) where these plants are grown.

APPLICATION: DECATHLON 20 WP Greenhouse and Nursery Insecticide mixes readily with water and may be used in all types of spray equipment. Mix product with the required amount of water and apply as a dilute spray application to the point of run-off. When spraying hard-to-wet foliage such as holly, pine or ivy, the addition of a spreader/sticker may enhance both knock-down and residual activity. If concentrate or mist type spray equipment is used, an equivalent amount of product should be used on the area sprayed, as would be used in a dilute application. Phytotoxicity testing has been carried out on a wide range of ornamental plants under various environmental conditions and no phytotoxicity has been observed. It is advised to pre-spray a selection of ornamentals if local use experience is unavailable. Time applications to flowering plants during periods when pollinating insects are not present, such as early morning or late evening.

Do not apply this product through any type of irrigation system.

COMPATIBILITY: DECATHLON 20 WP Greenhouse and Nursery Insecticide has been found to be compatible with all commonly used fungicides, miticides, liquid fertilizers and other insecticides. Check physical compatibility using the correct proportion of products in a small jar if local experience is unavailable.

RECOMMENDED APPLICATIONS

CROP	PEST	DECATHLON 20 WP per 100 gallons	REMARKS
Ornamentals and Nursery Stock (Including Trees, Shrubs, Evergreens, Flowers, Foliage Plants)	Armyworms Azalea caterpillars Bagworms Bristly rose slugs California oakworms Canker worms Crickets* Cutworms Elm spanworms Flies* Fungus gnats Gypsy moth larvae Lace bugs Leaf-feeding caterpillars Midges* Mosquitoes* Oleander moth larvae Pillbugs Pine shoot moths Pine tip moths Redhumped caterpillars Sawfly larvae Sowbugs Spiders* Striped oakworms Tent caterpillars Tussock moth larvae Walnut caterpillars Webworms Yellownecked caterpillars	36 grams (1.3 oz.)	Applications should be started prior to establishment of high pest populations and reapplication made as necessary. Good spray coverage is necessary to provide the most effective level of control. Addition of a spreader/sticker at recommended rates may enhance control of insects on certain species of ornamentals having hard-to-wet surfaces. *The use of Decathlon 20 WP Insecticide for the control of ants, crickets, spiders, midges, wasps, flies and mosquitoes limited to ornamental areas and areas adjacent to the buildings. Apply as a general spray, concentrating on damp areas beneath shrubbery, around foundations and in areas of tall grass or weeds. Do not apply to any food crop. Remove any animal feeding dishes prior to treatment and do not allow spray or drift to contact fish-bearing water.
	Aphids Boxelder bugs Budworms Casebearers Clover mites Cockroaches** Elm leaf beetles Flea beetles Grasshoppers Japanese beetles (adult) June beetles (adult) Leafhoppers Leafrollers Leaf Skeletonizers Mealybugs Orchid weevil Pear psylla Peppertree psyllid Plant bugs Scale insects (crawler stages) Spittlebugs Striped beetles Thrips Ticks Tussock moth larvae Whiteflies	54 grams (1.9 oz.)	Applications should be started prior to establishment of high pest populations and reapplication made as necessary. Good spray coverage is necessary to provide the most effective level of control. Addition of a spreader/sticker at recommended rates may enhance control of insects on certain species of ornamentals having hard-to-wet foliage. **Outdoor cockroach control (including Asian cockroaches) is obtained by spraying hiding or resting places such as under shrubbery, in ground covers and mulching materials, in hollow trees, etc.

— STORAGE AND DISPOSAL —

Not for Storage in or Around the House

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

Pesticide wastes are hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use 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.

Container Disposal: Do not use container in connection with food, feed, or drinking water. Completely empty container into application equipment. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Store in cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in orginal containers 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 the container is leaking or material spilled for any reason or cause, carefully sweep material into a pile. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Dispose of pesticide as directed above. In spill or leak incidents, keep unauthorized people away. You may contact the Bayer Emergency Response Team for decontamination procedures or any other assistance that may be necessary. The Bayer Kansas City Emergency Response Team Telephone No. is 800-414-0244, or contact Chemtrec at 800-424-9300

Olympic Horticultural Products, P.O. Box 230, Mainland, PA 19451

800-659-6745 SL981789-5/97

MATERIAL SAFETY DATA SHEET

OLYMPIC HORTICULTURAL PRODUCTS

OLYMPIC HORTICULTURAL PRODUCTS, CO.
P.O. BOX 230, MAINLAND, PA 19451
800-659-6745

Approval Date: 07/11/95
Supersedes: 12/10/93

TRANSPORTATION EMERGENCY
CALL CHEMTREC 800-424-9300
DISTRICT OF COLUMBIA 202-483-7616

NON-TRANSPORTATION
OLYMPIC/BAYER EMERGENCY PHONE . . 800-414-0244
OLYMPIC INFORMATION PHONE 800-659-6745

DECATHLON™ 20 WP GREENHOUSE AND NURSERY INSECTICIDE

EPA Registration Number: 3125-43 -598 7

I. PRODUCT IDENTIFICATION:

PRODUCT NAME . . . . . .: Decathlon 20 WP Greenhouse and Nursery Insecticide
CHEMICAL FAMILY . . . . . .: Pyrethroid Insecticide
CHEMICAL NAME . . . . . .: Cyano (4-fluoro-3-phenoxyphenyl) methyl 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate
SYNONYMS . . . . . .: Cyfluthrin
FORMULA . . . . . .: C22 H18 C12, F N 03

II. HAZARDOUS INGREDIENTS:

INGREDIENT NAME /CAS NUMBER	EXPOSURE LIMITS	CONCENTRATION(%)
DECATHLON (cyfluthrin)		
68359-37-5	OSHA : Not Established ACGIH : Not Established	20%
Ingredient 1968		
Specific chemical identity is withheld as a trade secret.	OSHA : Not Established ACGIH : Not Established	1-5%
Total Crystalline Silica (quartz)		
14808-60-7	OSHA : 100 mg/m3 TWA (respirable) ACGIH : 100 mg/m3 TWA (respirable)	<1-7%

III. PHYSICAL PROPERTIES:

PHYSICAL FORM . . . . . .: Powder
COLOR . . . . . .: Tan
ODOR . . . . . .: Slightly aromatic
ODOR THRESHOLD . . . . . .: Not established
MOLECLUAR WEIGHT . . . . . .: 434.3 (for cyfluthrin)
pH . . . . . .: 9.2 (1% Solution)
BOILING POINT . . . . . .: Not applicable
MELTING/FREEZING POINT . . .: Not applicable
SOLUBILITY IN WATER . . . . . .: 2 ppb (for cyfluthrin)
SPECIFIC GRAVITY . . . . . .: Not applicable
BULK DENSITY . . . . . .: Approximately 30 lb/cu ft
% VOLATILE BY VOLUME . . . .: Not established
VAPOR PRESSURE . . . . . .: 3.3 x 10 -8 mm Hg @ 20 C (for cyfluthrin)
VAPOR DENSITY . . . . . .: Not established (Air = 1)

IV. FIRE AND EXPLOSION DATA:

FLASH POINT . . . . . .: Not applicable
FLAMMABLE LIMIITS:
UPPER EXPLOSIVE LIMIT (UEL) (%) . . . . . .: Not applicable
LOWER EXPLOSIVE LIMIT (LEL) (%) . . . . . .: Not applicable
EXTINGUISHING MEDIA . . .: Water; Dry Chemical
SPECIAL FIRE FIGHTING PROCEDURES . . . . . .: If involved in fire, wear self contained breathing apparatus and stay up-wind.

V. HUMAN HEALTH DATA

ROUTE(S) OF ENTRY . . . . . .: Dermal contact and inhalation of the product are the primary routes of entry. Inhalation of aerosol during spray application of the product as part of its end use is another potential route of entry.

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE EFFECTS OF EXPOSURE . . . . . .: The active ingredient in this product has low toxicity, and no specific systemic symptoms of overexposure are known to occur in humans. Mild eye or skin irritation such as itching, stinging, redness or rash may occur from contact with the powder or spray mixture. Paresthesia (a tingling or burning sensation on the surface of the skin) may also result from skin contact. This is a frequently reported symptom associated with sufficient dermal exposure to synthetic pyrethroids and normally subsides without treatment within 24 hours. The onset of these symptoms usually occurs 2-12 hours after exposure. Mucous membrane irritation involving the nose, throat and upper respiratory tract may occur from inhalation of aerosols during end use of the product such as spray application.

CHRONIC EFFECTS OF EXPOSURE . . . . . .: Based on animal studies, noadverse effects or symptoms would be expected from chronic exposure to the active ingredient in this product during normal use. This product may contain an amount of total crystalline silica which ranges from less than 1% to approximately 7%. However, the amount of respirable crystalline silica is expected to be significantly lower based on data provided by the raw material manufacturer. Excessive long-term exposure to respirable crystalline silica may cause silicosis, a form of progressive pulmonary fibrosis. Severe and permanent lung damage may result.

CARCINOGENICITY . . . . . .: DECATHLON 20 WP is not listed as a carcinogen by NTP or IARC, or regulated as a carcinogen by OSHA. However, it may contain crystalline silica (quartz), a substance which is classified by NTP as a Group 2 carcinogen and by IARC as a Group 2A carcinogen. Crystalline silica is a naturally occurring mineral component of many sands and clays. Considerable controversy exists regarding the carcinogenic potential of crystalline silica in humans, but based on animal data, the potential must be considered relevant if crystalline silica is inhaled under excessive exposure conditions. However, the respirable portion of the silica which may be contained in this product is small, such that excessive inhalation exposure during normal conditions of use is unlikely.

NTP . . . . . .: Crystalline silica is classified as an NTP Anticipated Human Carcinogen - "Substances or groups of substances that may reasonably be anticipated to be carcinogens."

IARC . . . . . .: "IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans," Vol. 42 - for Crystalline Silica (Quartz) - determined that "There is sufficient evidence for the carcinogenicity of crystalline silica to experimental animals. There is limited evidence for the carcinogenicity of crystalline silica to humans."

OSHA . . . . . .: Not regulated.

MEDICAL CONDITIONS

AGGRAVATED BY EXPOSURE: No specific medical conditions are known which may be aggravated by exposure to the active ingredient in this product. As with all materials which can cause upper respiratory tract irritation, persons with a history of asthma, emphysema, or hyperreactive airways disease may be more susceptible to overexposure. In addition, pulmonary and respiratory diseases may be aggravated by exposure to respirable crystalline silica.

VI. EMERGENCY AND FIRST AID PROCEDURES:

FIRST AID FOR EYES . . . . . .: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

FIRST AID FOR SKIN . . . . . .: Wash skin immediately with soap and warm water. Get medical attention if irritation persists.

FIRST AID FOR INHALATION . .: If a person is overcome by excessive exposures to dusts or aerosols of this material, remove to fresh air or uncontaminated area. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention as soon as possible.

FIRST AID FOR INGESTION . . .: If ingestion is suspected, call a physician or poison control center. Drink one or two glasses of water and induce vomiting by touching back of throat with finger, or if available, by administering syrup of ipecac. If syrup of ipecac is available, administer 1 tablespoonful (15 mL) of syrup of ipecac followed by 1 or 2 glasses of water. If vomiting does not occur within 20 minutes, repeat the dose once. Do not induce vomiting or give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN . . . . . .: **ANTIDOTE** - No specific antidote is available. Treat victim symptomatically. Published data indicate Vitamin E acetate can prevent and/or mitigate symptoms of paresthesia caused by synthetic pyrethroids. In case of poisoning, it is also requested that Bayer Corporation, Agriculture Division, Kansas City, Missouri, be notified. Telephone: 800/414-0244.

VII. EMPLOYEE PROTECTION RECOMMENDATIONS:

EYE PROTECTION REQUIREMNTS . . . . . .: Goggles should be used when needed to prevent dust or spray mixture from getting into the eyes.

SKIN PROTECTION REQUIREMENTS . . . . . .: Avoid skin contact. Use chemical-resistant gloves and additional protective clothing when needed to prevent dermal exposure.

RESPIRATOR REQUIREMENTS : Under normal handling conditions, no respiratory protection is needed. However, if needed to prevent respiratory irritation, a respirator approved by NIOSH for dusts and mists or for pesticides may be used.

VENTILATION REQUIREMENTS . . . . . .: Control airborne concentrations of DECATHLON 20 WP through the use of general and local exhaust ventilation where needed.

ADDITIONAL PROTECTIVE MEASURES. . . . . .: Clean water and soap should be available for washing in case of eye or skin contamination. Educate and train employees in safe use of the product. Follow all label instructions. Launder clothing after use. Wash thoroughly after handling.

VIII.REACTIVITY DATA:

STABILITY . . . . . .: This is a stable material

HAZARDOUS POLYMERIZATION . . . . . .: Will not occur

INCOMPATIBILITIES . . . . . .: Alkaline media; reacts with methanol; incompatible with most disinfectants

INSTABILITY CONDITIONS . . .: Not noted

DECOMPOSITION PRODUCTS .: Not established

IX. SPILL AND LEAK PROCEDURES:

SPILL OR LEAK PROCEDURES . . . . . .: Isolate area. Avoid breathing dusts and skin contact. Use recommended protective equipment while carefully sweeping up and place in covered container for re-use if possible. Scrub contaminated area with soap and water. Repeat and rinse with water. Prevent contamination of streams, sewers, or other waterways.

WASTE DISPOSAL METHOD . .: Follow all federal, state and local regulations. Bury material in EPA-approved landfill, or burn in an incinerator approved for pesticide destruction. Do not reuse container.

X. SPECIAL PRECAUTIONS AND STORAGE DATA:

STORAGE TEMPERATURE (MIN/MAX) . . . . . .: None/30 day average not to exceed100 F

SHELF LIFE . . . . . .: Not noted

SPECIAL SENSITIVITY . . . . . .: Heat, moisture

HANDLING/STORAGE PRECAUTIONS . . . . . .: Store in a cool, dry area designated specifically for pesticides. Do not store near any material intended for use, or consumption by humans or animals.

XI. SHIPPING INFORMATION:

TECHNICAL SHIPPING NAME . .: Cyfluthrin

FREIGHT CLASS BULK . . . . . .: Insecticides, NOI - NMFC 102120

FREIGHT CLASS PACKAGE . . .: Insecticides, NOI - NMFC 102120

PRODUCT LABEL . . . . . .: Not noted

DOT (HM-181) (DOMESTIC SURFACE)

PROPER SHIPPING NAME . . . .: Not regulated

HAZARD CLASS OR DIVISION .: Non-regulated

IMO/IMDG CODE (OCEAN)

PROPER SHIPPING NAME . . . .: Not regulated

HAZARD CLASS DIVISION NUMBER . . . . . .: Non-regulated

ICAO/IATA (AIR)

PROPER SHIPPING NAME . . . .: Not regulated

HAZARD CLASS DIVISION NUMBER . . . . . .: Non-regulated

XII. ANIMAL TOXICITY DATA:

Only acute studies have been performed on this product as formulated. The non-acute information pertains to the active ingredient, cyfluthrin.

ACUTE TOXICITY

ORAL LD50 . . . . . .: Male Rat: 3084 mg/kg - Female Rat: 1733 mg/kg

DERMAL LD50 . . . . . .: Male and Female Rabbit: >2000 mg/kg

INHALATION . . . . . .: 4 hr exposure to Dust: Male and Female Rat: >1.18 mg/l (analytical) - 1 hr exposure to Dust (extrapolated from 4 hr LC50): Male and Female Rat: >4.72 mg/l (analytical)

EYE EFFECTS . . . . . .: Rabbit: Mild irritation to the iris and conjuctiva was observed with all irritation resolving within 7 days.

SKIN EFFECTS . . . . . .: Rabbit: Slight dermal irritant.

SENSITIZATION . . . . . .: Guinea Pig: Not a dermal sensitizer.

SUBCHRONIC TOXICITY . . . . .: In a 3-week dermal toxicity study, the active ingredient, cyfluthrin, was administered at 50 or 250 mg/kg to the back of rabbits for 6 hours/day, 5 days/week. There were no local or systemic effects observed in the treated rabbits. The no-observed-effect-level (NOEL) was equal to or greater than 250 mg/kg. In a 13 week inhalation study, rats were exposed to cyfluthrin at aerosol concentrations of 0.09, 0.71 or 4.51 mg/cubic meter for 6 hours/day, 5 days/week. The NOEL was 0.09 mg/cubic meter based on reduced body weight gains.

CHRONIC TOXICITY . . . . . .: Cyfluthrin was administered for 2 years to rats at dietary concentrations of 50, 150 or 450 ppm. Body weight gains were reduced at 150 ppm and greater. The NOEL was 50 ppm based on reduced body weight gains. Dogs were administered cyfluthrin for 1 year at dietary concentrations of 40, 160 or 640 ppm. At the high dose, there was an increase incidence of clinical-signs and a reduction of body weight gains. The NOEL was 160 ppm. Preliminary data are available on an ongoing dog study. Dogs were administered cyfluthrin at dietary concentrations of 50, 100, 360 or 500 ppm for 1 year. Mid-term neurological examinations revealed hind-limb motor disturbances at dose levels of 360 ppm and greater.

CARCINOGENICITY . . . . . .: Cyfluthrin was investigated for carcinogenicity in chronic studies using rats and mice at maximum levels of 450 and 800 ppm, respectively. There was no evidence of a carcinogenic potential observed in either species.

MUTAGENICITY . . . . . .: Numerous in vitro and in vivo mutagenicity studies have been conducted on cyfluthrin, all of which are negative.

DEVELOPMENTAL TOXICITY . . . . . .: In teratology studies using rats, cyfluthrin was administered during gestation by oral gavage at doses ranging from 1 to 30 mg/kg. The overall NOEL from these studies for maternal toxicity was 3 mg/kg. No developmental effects were observed at any of the doses tested. In each study the NOEL for developmental toxicity was equivalent to the highest dose tested. The NOELs for developmental toxicity for the initial study and the subsequent study were 30 and 10 mg/kg, respectively. Rabbits were administered cyfluthrin during gestation by oral gavage at doses ranging from 5 to 180 mg/kg. At maternally toxic levels, there was an increased incidence of post-implantation losses. The overall NOEL derived from these studies for both maternal and developmental toxicity was 20 mg/kg. In an inhalation study, rats were exposed during gestation to cyfluthrin at aerosol concentrations of 0.46, 2.55 or 11.9 mg/m3 for 6 hours/day. NOELs for maternal and developmental toxicity were less than 0.46 and 0.46 mg/m3, respectively.

REPRODUCTION . . . . . .: In a reproduction study, cyfluthrin was administered to rats for 3 generations at dietary concentrations of 50, 150 and 450 ppm. Reproductive effects observed at parentally toxic levels included reductions in viability, lactation, litter size, feed consumption, and pup birth weights and body weight gains. Coarse tremors were observed in some offspring at 450 ppm. The NOEL for both parental and reproductive effects was 50 ppm. In another reproduction study, cyfluthrin was administered to rats for 2 generations at dietary concentrations of 50, 125 or 400 ppm. The in-life portion of the study has been completed and preliminary results indicate a marginal decrease in viable pup weights from birth through day 7 at 50 ppm. This is the only effect noted in pups at the low dose and occurred only in the F2a generation. The biological relevance of this equivocal finding awaits full completion of the study.

NEUROTOXICITY . . . . . .: Numerous neurotoxicity studies have been conducted on cyfluthrin. Oral gavage studies using hens have indicated that at extremely high dose levels (5000 mg/kg), minimal nerve damage occurs. When rats were administered cyfluthrin daily at oral doses of 40 to 80 mg/kg for 14 days, minimal nerve effects were seen. These effects were completely reversible within a 3-month recovery period. In dermal and inhalation studies which are more relevant to field exposure, there was no evidence of delayed neurotoxicity in hens.

XIII. FEDERAL REGULATORY INFORMATION:

OSHA STATUS . . . . . .: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS . . . . . .: This product is exempt from TSCA Regulation under FIFRA Section 3 (2)(B)(ii) when used as a pesticide.

CERCLA REPORTABLE QUANTITY . . . . . .: No components listed.

SARA TITLE III:

SECTION 302 EXTREMEMLY HAZARDOUS SUBSTANCES: No components listed.

SECTION 311/312 HAZARD CATEGORIES . . . .: Immediate Health Hazard.

SECTION 313 TOXIC CHEMICALS . . . . . .: Cyfluthrin-CAS #68359-37-5 (20%)

RCRA STATUS . . . . . .: If discarded in its purchased form, this product would not be hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

XIV. OTHER REGULATORY INFORMATION:

NFPA 704M RATINGS:	Health	Flammability	Reactivity	Other
	2	2	1	0

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

Olympic's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. NFPA ratings are provided by Olympic as a customer service.

XV. APPROVALS:

REASON FOR ISSUE: . . . . . .: Revise Sections II, V, XII and XIII.

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Olympic Horticultural Products, Co. The data on this sheet relates only to the specific material designated herein. Olympic Horticultural Products, Co. assumes no legal reponsibility for use or reliance upon these data.

INSECTICIDAL SOAP 49.52 CF

OLYMPIC HORTICULTURAL PRODUCTS™

SPECIMEN LABEL

FOR USE on FRUITS, NUTS, VEGETABLES, and ORNAMENTALS

ACTIVE INGREDIENT:	
Potassium Salts of Fatty Acids	49.52%
INERT INGREDIENTS	50.48%
Total	100.00%

EPA Reg. No. 36488-45-59807 **EPA Est. No. 44616-MO-1**

Net Contents: 2.5 gallons or 30 gallon drums

KEEP OUT OF REACH OF CHILDREN

WARNING / AVISO

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

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING: Causes substantial but temporary eye injury. Causes skin irritation. Do not get on skin, in eyes or on clothing. Wear goggles or safety glasses. Wash thoroughly with soap and water after handling. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category C on an EPA chemical resistant category selection chart.

Applicators and other handlers of the diluted product must wear: Clothing that avoids exposure of bare skin to product including long pants, long-sleeved shirt, socks, shoes, and protective gloves. Protective eyewear should be used for overhead exposure.

Mixers and loaders of the concentrate product must wear: Coveralls over short-sleeved shirt and short pants.

Chemical resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride, viton. Chemical-resistant footwear plus socks. Protective eyewear. Chemical-resistant headgear for overhead exposure. Chemical-resistant apron when cleaning equipment, mixing, or loading.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. 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.
- Remove contaminated clothing 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.

STATEMENT OF PRACTICAL TREATMENT

If in Eyes: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention. **If on Skin:** Wash with plenty of soap and water. Get medical attention. **If Inhaled:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

ENVIRONMENTAL HAZARDS

This product may be hazardous to aquatic invertebrates. 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 water.

PHYSICAL OR CHEMICAL HAZARDS

Flammable, keep away from heat and flame.

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 the 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, soils, or water is:

Clothing that avoids exposure of bare skin to product including:

- Long pants
- Long-sleeved shirt
- Socks
- Shoes
- Protective gloves

INSECTICIDAL SOAP 49.52 CF is an effective contact insecticide that is ideal for use in areas such as parks, restaurants, hospitals, school grounds, malls, and other public places, as well as in agriculture, horticulture, and greenhouses.

INSECTICIDAL SOAP 49.52 CF effectively controls:

Adlegids	Aphids	Earwigs	Grasshoppers
Lace Bugs	Leafhoppers	Mealybugs	Plant bugs
Psyllids	Sawfly larvae	Scales	Spider Mites
Tent caterpillars	Thrips	Whiteflies	Wooly Aphids

INSECTICIDAL SOAP 49.52 CF offers effective insect control on a wide variety of cultivars in ornamental horticultural and agricultural settings:

Foliage Plants	Flowers	Fruits
Tree Nuts	Trees & Shrubs	Vegetables

INSECTICIDAL SOAP 49.52 CF:

- Can be applied up to time of harvest.
- Can be used as an effective component of intergrated pest management programs.

For best results, use freshly mixed solution. Use soft water whenever possible. If water has a high mineral content and produces soap scale, pre-treat water with an approved softening agent or a pesticide compatibility agent before adding concentrate. To prevent or minimize foaming, avoid use of mechanical agitation, place filling hose below surface of spray solution, terminate bypass and return lines at bottom of tank; if needed, use approved antifoam or defoaming agent. CAUTION: Do not use on new transplants, newly rooted cuttings, or plants stressed by drought. Avoid application when leaf temperature exceeds 85°F.

WHEN USED ALONE: **INSECTICIDAL SOAP 49.52 CF** may be used up to and including day of harvest and is useful as a component of Integrated Pest management (IPM) systems.

Dilute at the rate of 2 gallons of concentrate to 100 gallons of water, except as noted in individual sections. Apply according to the rates and other directions given under the individual crop groupings. Spray should be applied to thoroughly wet all infested surfaces.

WHEN COMBINED WITH OTHER PESTICIDES: **INSECTICIDAL SOAP 49.52 CF** may be combined with other pesticides to broaden the target spectrum, improve the level of kill and enhance coverage. Such use should conform to accepted use precautions and directions for use of both products.

INSECTICIDAL SOAP 49.52 CF may be tank mixed by adding 1 gallon of concentrate per 100 gallons of spray containing the label amount of the companion pesticide or less, except where prohibited by local regulation. Products with which it may be tank mixed include, but are not limited to, *Bacillus thuringiensis*, pyrethrum, and a variety or petrochemical-based pesticides.

INDOOR PLANTS: Mix one part concentrate with 50 parts water, or 2.5 fl. oz. per gallon. Apply when insects or signs of their damage appear. Take care to thoroughly wet all surfaces of infested foliage or branches. For aphids examine plants after two days and spray again if needed. For other pests spray at 7 to 10 day intervals as needed up to three times. Do not make repeated sprays at short intervals without thoroughly rinsing foliage. For blossom thrips on African violets, spray to contact thrips on the blooms. Root mealybug and springtail infestations can be reduced using a soil drench of one to two tablespoons of concentrate in a quart of tepid water applied monthly.

NOTE: Do not use on Crown of Thorns and test on other euphorbias for phytotoxicity before full-scale application. Do not use on dracaena, delicate ferns, dieffenbachia, ornamental ivies, palms or succulents without testing.

FLOWERS AND BEDDING PLANTS GROWING OUTDOORS AND IN GREENHOUSES: including (but not limited to) foliage plants, roses and succulents. Mix two gallons of concentrate per 100 gallons of water or 2.5 fl. oz. per gallon. Apply when insects appear. Take care to thoroughly wet all infested surfaces. A second application should be timed to control newly hatched young. Repeat weekly as needed up to three times. For earwigs spray directly on insects after disturbing their hiding place.

NOTE: Do not use on bleeding heart, jade plant, lantana, lillies or sweetpeas. Some varieties of azaleas, begonias, camellias, fuschias, gardenias, orchids, and impatiens have shown sensitivity. If wilting occurs within a few hours rinse with clean water spray. Do not apply to poinsettias after bract coloration begins. Test on chrysanthemums for varietal sensitivity and do not apply to open blooms.

INSECTICIDIAL SOAP 49.52 CF mixed 2 gallons per 100 gallons of water may be used as a soil drench to control listed pests in the growing medium of container grown plants.

ORNAMENTAL LANDSCAPE TREES AND SHRUBS: including (but not limited to) Christmas trees and ornamental plantings in parks, gardens and along rights-of-way. Mix two gallons of concentrate per 100 gallons water or 2.5 fl. oz. per gallon. To control the crawler stage of adelgids, psyllids, and scales spray to wet bark surface when infestation warrants. For mites and other listed pests, be sure to wet underside of leaves and needle sheaths. For tent caterpillars, mix 1 gallon of concentrate to 30 gallons of water or 4 fl. oz. per gallon and spray directly on young larvae when congregated on outside of tent.

To control Balsam Wooly Aphid on true firs (*Abies* spp.) mix one gallon of concentrate to 80 gallons of water or approximately 1.5 fl. oz. per gallon. Spray trees thoroughly when crawlers are abundant in early spring and/or fall. For best results make a second application after ten days.

To control Spruce Wooly Aphid mix 1 gallon of concentrate to 25 gallons of water or 5 fl. oz. per gallon. Spray spruce thoroughly in fall or spring before females begin egg laying; on Douglas fir spray before bud break or in the fall after foliage has hardened off.

To control Conifer Aphids, sawfly larvae and pine needle scale mix 1 gallon of concentrate per 40 gallons of water or 3 fl. oz. per gallon and spray to thoroughly wet foliage when insects are present.

NOTE: Do not apply to chestnut, Japanese maple, mountain ash, or Colorado blue spruce. Do not apply to ornamentals stressed by drought or when tender new foliage is present. Do not apply when leaf temperature exceeds 85°F. Test on Arborvitae, Eugenia and Euonymus for varietal and drought sensitivity. **INSECTICIDAL SOAP 49.52 CF** sprays may result in the temporary removal of the glaucas bloom from spruces. To suppress gypsy moth populations, prevent egg hatch by applying a spray solution of 1 quart concentrate to 3 quarts of water directly to egg masses; do not allow spray to contact plant foliage.

VEGETABLES GROWING OUTDOORS AND IN GREENHOUSES: Mix two gallons of concentrate to 100 gallons of water or 2.5 fl. oz. per gallon. Apply when insect or mite populations attain spray threshold. Spay to wet all infested plant surfaces. Application volume per acre sprayed will vary according to size and growth form of plants. Row crops will typically require 50 to 150 gallons of spray per acre. For most pests repeat application after several days to eliminate newly hatched individuals. Do not make more than three sequential applications over a two week period. May be used up to day of harvest.

NOTE: Do not apply during heat of the day or when leaf temperature exceeds 85°F.

ROOT AND TUBER VEGETABLES: including (but not limited to) carrot, potato, radish and sugar beet to suppress aphids, and control leafhoppers, plant bugs and whitefly. Use up to day of harvest.

BULB VEGETABLES: including (but not limited to) onion and garlic to suppress thrips. Use up to day of harvest.

LEAFY VEGETABLES: including (but not limited to) lettuce, celery and spinach to control whitefly and mites and to suppress aphids. Use up to day of harvest.

BRASSICA (cole) LEAFY VEGETABLES: including (but not limited to) broccoli, Brussels sprouts, cabbage, Chinese cabbage (bok choy) and kale to control leafhoppers, plant bugs and whitefly and to suppress aphids. Use up to day of harvest.

NOTE: Do not spray on crop prior to application of or tank mix with a topically applied liquid nitrogen fertilizer.

LEGUME VEGETABLES: including (but not limited to) beans, peas and soybeans to control aphids, grasshoppers, whitefly and spider mites. Use up to day of harvest.

FRUITING VEGETABLES: including (but not limited to) eggplant, pepper and tomato to control whitefly and spider mites and to suppress aphids. Use up to day of harvest.

CUCURBIT VEGETABLES: including (but not limited to) cucumber, melon and summer squash to control plant bugs and whitefly and suppress aphids and mites. Use up to day of harvest.

Always apply to cucumbers at night or during the coolest part of the day.

HERBS AND SPICES: including (but not limited to) basil, chives, dill, marjoram and sage to control whitefly and to suppress aphids and mites. Use up to day of harvest.

FRUITS AND NUTS: Mix two gallons of concentrate to 100 gallons of water or 2.5 fl. oz. per gallon. Spray when insects or mites first appear or when their populations attain spray level. Apply to achieve thorough coverage of infested foliage and /or branches. Repeat at weekly intervals as needed. Avoid spraying when blossoms are present. Use up to day of harvest.

CITRUS FRUITS: including (but not limited to) sweet orange, lemon and grapefruit to control aphids, cottony cushion scale, black scale, red scale and mites. Use up to day of harvest.

NOTE: Some marking of fruit may occur, especially when spray run-off occurs or when sooty mold is present.

POME FRUITS: including (but not limited to) apple and pear to control leafhoppers, scale crawlers, pear psylla, pear slug (Tenthridinidae) and to suppress aphids and mites. Use up to day of harvest.

NOTE: Spray may cause localized marking of some varieties particularly apple varieties such as red and golden delicious, Gravenstein, and pear varieties such as d'Anjou, Comice and Asian.

STONE FRUITS: including (but not limited to) cherry, peach and plums to control scale insects and suppress aphids and mites. Use up to day of harvest.

NOTE: Spray may cause localized spotting of nectarines and may remove wax bloom from plums.

SMALL FRUITS AND BERRIES: including (but not limited to) blackberry, coffee, cranberry, grape and strawberry to control leafhoppers, mealybugs, scales and whitefly and to suppress aphids and mites. Use up to day of harvest.

NOTE: Do not spray grapes during the period between the start of blooming and 2 to 3 days post shatter. Application made with dilute spray equipment (more than 75 gallons of spray per acre) and /or tank mixes containing sulfur may mark fruit of grapes; dilute applications are not recommended on varieties being grown for the fresh produce market including (but not limited to) flames, globes and perlettes as marking of fruits may occur. Do not use on Labrusca varieties or Italia and Calmeria varieties grown for the fresh market.

TREE NUTS: including (but not limited to) almond, English walnut and pecan to control scale crawlers and suppress aphids and mites. Use up to day of harvest.

ADDITIONAL CROPS: including (but not limited to) asparagus, coffee, cotton, and subtropical and tropical crops. Mix two gallons of concentrate to 100 gallons of water or 2.5 fl. oz. per gallon. To control aphids, whitefly and mites spray when insects appear and repeat at weekly intervals as needed. Do not use at intervals of less than seven days. Use up to day of harvest.

NOTE: Do not use on passion fruit or guava. Test for varietal sensitivity against other tropical fruits before full-scale application.

POST-HARVEST APPLICATIONS

INSECTICIDAL SOAP 49.52 CF may be used alone or in tank mixes to control or suppress insect and mite pests of perennial crop plants after harvest has been completed.

Post-harvest applications provide a means of reducing residual populations, and are a useful component of IPM programs.

STORAGE AND DISPOSAL

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

Storage: Store only in original container, in a dry place, inaccessible to children or pets. Do not store full or partial containers in direct sunlight. Keep container tightly sealed when not is use.

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

Container Disposal: Do not reuse empty container. Triple rinse (or equivalent), then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Manufactured for:
Olympic Horticultural Products Co.
P.O. Box 230
Mainland, PA 19451
800-659-6745

984250 OHP06980

MATERIAL SAFETY DATA SHEET

OLYMPIC HORTICULTURAL PRODUCTS, CO.
P.O. BOX 230, MAINLAND, PA 19451
800-659-6745

Revision Date: August 14, 1998
MSDS Number: 559

TRANSPORTATION EMERGENCY
CALL HAZARD INFORMATION SERVICES. . . . . .
. . . . . 1-800-228-5635 ext. 170

NON-TRANSPORTATION
OLYMPIC EMERGENCY PHONE 1-800-356-4647
OLYMPIC INFORMATION PHONE 1-800-659-6745

INSECTICIDAL SOAP 49.52 CF

EPA Registration Number: 36488-45-598 7

SECTION I: COMPOSITION / INFORMATION on INGREDIENTS

Hazardous Ingredients(*):	% by weight	CAS No.	OSHA TWA	PEL STEL	ACGIH TWA	TLV STEL
ethyl alcohol	< 35.0	64-17-5	1900 mg/m^3	NE	1880 mg/m^3	NE
methyl alcohol mg/m^3	< 2.0	67-56-1	260 mg/m^3	NE	262 mg/m^3	328
Potassium Salts of Fatty Acids	49.52	N/A	NE	NE	NE	NE

* all ingredients in quantities > 1.0 % (0.1 % for carcinogens or teratogens) that are **potentially** hazardous per OSHA definitions
N/A = not applicable NE = not established

EMERGENCY OVERVIEW

SECTION II: HAZARDS IDENTIFICATION

Physical description: Amber liquid

Odor: alcohol and lard odor

Potential Health Effects: This material may be severely irritating to both eyes and skin. Personnel responding to a spill should wear protective clothing and eye protection.

SECTION III: FIRST AID MEASURES

Skin Contact: . . . . . .Wash with plenty of soap and water. Get medical attention if irritation persists.

Ingestion: . . . . . .If swallowed, promptly drink large amounts of water. Never give liquids to an unconscious person. Get medical attention.

Eye Contact: . . . . . .Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

Inhalation: . . . . . .Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

NOTES TO PHYSICIAN: . .The range of toxicity for methanol ingestion is extremely variable. Blood levels of methanol and degree of acidemia are more indicative of risk. Visual changes have been described, and may be delayed for 12 to 24 hours. Funduscopic findings may be normal but also may show peripapillary edema, hyperemia of the optic disc or retinal edema.

SECTION IV: FIRE FIGHTING MEASURES

Extinguishing media: . . .alcohol foam

Flashpoint: . . . . . .60° F TCC

Hazardous products of combustion: not determined

Autoignition temperature: . . . . . .not applicable

Special Fire Fighting Measures: . . . . . .water stream may spread fire

NFPA Ratings: Health = 2 Fire = 3 Reactivity = 0

SECTION V: ACCIDENTAL RELEASE MEASURES

Spills: . . . . . .Rinse with abundant water and mop up (See Disposal Comments in Section 12)

SECTION VI: HANDLING & STORAGE

Storage: . . . . . .Store away from heat, out of reach of children. Do not contaminate water, food, feed by storage or disposal. Do not reuse container.

SECTION VII: EXPOSURE CONTROLS & PERSONAL PROTECTIVE EQUIPMENT

Skin: . . . . . .Protective gloves (nitrile) recommended

Eye Protection: . . . . . .Recommended to avoid splashing of material directly into eyes

Respiratory: . . . . . .In typical applications no engineering controls should be needed; if industrial hygiene surveys show that occupational exposure limits may be exceeded, use NIOSH approved respirator with organic vapor/dust/mist cartridges.

INSECTICIDAL SOAP 49.52 CF

EPA Registration Number: 36488-45-598 7

SECTION VIII: PHYSICAL & CHEMICAL PARAMETERS

Appearance: . . . . . .Amber liquid

Odor: . . . . . .alcohol and lard odor

Physical state: . . . . . .liquid

Solubility in water: . . . . .nearly complete

Bulk Density: 0.93

pH: . . . . . .10.5 - 10.7

Vapor pressure: . . . . . .not determined

Vapor density: . . . . . .not determined

Boiling point: . . . . . .80° C (176°F)

Freezing point: . . . . . .not determined

SECTION IX: STABLILITY & REACTIVITY

Stability: . . . . . .stable

Conditions to avoid: . . .heat and open flame

Incompatibilities: . . . . . .concentrated mineral supplements (fertilizers), strong oxidizers, acids

Hazardous polymerization: . . . . . .will not occur

SECTION X: TOXICOLOGICAL INFORMATION

Oral LD_{50} = > 5,000 mg/kg

Dermal LD_{50} = > 2,000 mg/kg

Inhalation LC_{50} = > 500 mg/m^3

Not a contact sensitizer

Carcinogens: None listed per OSHA, NTP, or IARC.

Ethanol has been shown to be a developmental toxin from chronic ingestion; such effects are not anticipated from appropriate use of this product.

SECTION XI: ECOLOGICAL INFORMATION

Ecotoxicity: . . . . . .May be hazardous to aquatic invertebrates. Do not apply directly to water; do not contaminate water by cleaning of equipment or disposal of washwaters.

Environmental Fate: . . . .No data available

SECTION XII: DISPOSAL CONSIDERATIONS

Be aware that the waste owner has responsibility for final disposal. Regulations may also apply to empty containers, liners or rinsate. Laws may change or be reinterpreted; state and local regulations may be different from federal regulations. This information applies to material as manufactured; contamination or processing may change waste characteristics and requirements.

SECTION XIII: TRANSPORT INFORMATION

DOT Hazard Description: . . . . . .Flammable Liquid, N.O.S., (contains Ethanol), 3, UN1993, PG III

SECTION XIV: REGULATORY INFORMATION

SARA Title III: . . . . . .reporting not required unless TPQ exceeded in inventory

Individual States: . . . . . .States such Pennsylvania, New Jersey, California, Vermont, Massachusetts and Rhode Island may all have components of this product listed; consult specific state regulatory requirements for additional information.

SECTION XV: OTHER INFORMATION

For additional information, refer to the American Conference of Governmental Industrial Hygienists (ACGIH) documentation of TLV's (Threshold Limit Values) for individual components and the DOT Emergency Response Guidebook.

This information is provided in good faith, but without express or implied warranty.

OLYMPIC HORTICULTURAL PRODUCTS™

MARATHON® 1% Granular

OLYMPIC HORTICULTURAL PRODUCTS™

Greenhouse and Nursery Insecticide — SPECIMEN LABEL

FOR SYSTEMIC INSECT CONTROL IN ORNAMENTAL CROPS

ACTIVE INGREDIENT:	
Imidacloprid,	
1-[(6-Chloro-3-pyridinyl)methyl]-*N*-nitro-2-imidazolidinimine . .	1.0%
INERT INGREDIENTS	99.0%
	100.0%

EPA Est. indicated by second and third digits of the batch number on this package.
(79)=5905-GA-1 (77)=070989-MO-001

EPA Reg. No. 3125-452-59807

Net Weight: 5 lbs.

STOP - READ THE LABEL BEFORE USE

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 the label, find someone to explain it to you in detail.)

MANUFACTURED FOR:
Olympic Horticultural Products Co., P. O. Box 230, Mainland, PA 19451

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed or absorbed through skin. Causes eye irritation. Avoid contact with skin, eyes, or clothing.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Water-proof 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.

Engineering controls statements:

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.

User Safety Recommendations:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing 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.

STATEMENTS OF PRACTICAL TREATMENT

If in eyes: Hold eyelids open and flush with plenty of water. Call a physician if irritation persists.

If swallowed: Call a physician or Poison Control Center. Drink one or two glasses of water and induce vomiting by touching back of throat with finger, or, if available, administer 1 tablespoonful (15mL) of syrup of ipecac followed by 1 to 2 glasses of water. If vomiting does not occur within 20 minutes, repeat the dose once. Do not induce vomiting or give anything by mouth to an unconscious person.

If on skin: Wash thoroughly with soap and water. Get medical attention if irritation occurs.

To Physician: No specific antidote is available. Treat the patient symptomatically.

ENVIRONMENTAL HAZARDS

This product is highly toxic to aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark.

Do not contaminate water when disposing of equipment washwaters.

This chemical demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

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 the restricted entry interval (REI) of 12 hours.

Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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 • Waterproof gloves • Shoes plus socks

IMPORTANT: Read these entire DIRECTIONS FOR USE, GENERAL INFORMATION, AND CONDITIONS OF SALE before using **MARATHON® 1% Granular Greenhouse and Nursery Insecticide**.

CONDITIONS OF SALE: THE DIRECTIONS ON THIS LABEL WERE

MARATHON® 1% Granular

DETERMINED THROUGH RESEARCH TO BE APPROPRIATE FOR THE CORRECT USE OF THIS PRODUCT. THIS PRODUCT HAS BEEN TESTED UNDER DIFFERENT ENVIRONMENTAL CONDITIONS BOTH INDOORS AND OUTDOORS UNDER CONDITIONS SIMILAR TO THOSE THAT ARE ORDINARY AND CUSTOMARY WHERE THE PRODUCT IS TO BE USED. INSUFFICIENT CONTROL OF PESTS OR PLANT INJURY MAY RESULT FROM THE OCCURRENCE OF EXTRAORDINARY OR UNUSUAL CONDITIONS, OR FROM FAILURE TO FOLLOW LABEL DIRECTIONS. IN ADDITION, FAILURE TO FOLLOW LABEL DIRECTIONS MAY CAUSE INJURY TO ANIMALS, MAN AND DAMAGE TO THE ENVIRONMENT. OLYMPIC OFFERS, AND THE BUYER ACCEPTS AND USES, THIS PRODUCT SUBJECT TO THE CONDITIONS THAT EXTRAORDINARY OR UNUSUAL ENVIRONMENTAL CONDITIONS, OR FAILURE TO FOLLOW LABEL DIRECTIONS ARE BEYOND THE CONTROL OF OLYMPIC AND ARE, THEREFORE, THE RESPONSIBILITY OF THE BUYER.

GENERAL INFORMATION

MARATHON 1% Granular Greenhouse and Nursery Insecticide is for insect control on ornamental plants in nurseries and greenhouses. **MARATHON 1% Granular Greenhouse and Nursery Insecticide** is a systemic product and will be translocated upward within the plant. To assure optimum effectiveness, the product must be placed by incorporation where the roots of the plant can absorb the active ingredient. Irrigate moderately but thoroughly after application, allowing no leaching and runout from containers for at least three irrigations or 10 days whichever is longer.

INCORPORATION: Incorporation of **MARATHON 1% Granular Greenhouse and Nursery Insecticide** can be achieved by cultivation, irrigation, rainfall, mechanical placement or by using mechanical soil or media mixing equipment.

WOODY PERENNIALS: Onset of protection is slower than in herbaceous species. A delay of 2 or more weeks should be expected. Longer delays may be expected with larger plants. Application should therefore be made in advance of expected insect activity.

BARK MEDIA: Media with 30% or more bark content when treated with **MARATHON 1% Granular Greenhouse and Nursery Insecticid**e may confer a shorter period of protection.

RECOMMENDED APPLICATIONS - MARATHON 1% G
For systemic insect control in field-grown nursery stock, and indoor and outdoor ornamentals grown in flats, benches, beds and containers.

PEST	USE PATTERN	DOSAGE					REMARKS
		Container size (inches)	Bulk Application		Topical Application		
			Pots /cu. yd. of mix	Bulk Rate lbs /cu. yd.	Level teaspoon / pot	Grams / pot	
Adelgids **Aphids** **Thrips (suppression)*** **Whiteflies** **Armored scale (suppression)** **Elm leaf beetles** **Japanese Beetles** **Lacebugs** **Leafminers** **Mealybugs** **Psyllids** **Root mealybugs** **Root Weevil Complex (such as Black Vine Weevil, Apopka Weevil, Citrus Root Weevil)**** **Soft scale** **White Grub larvae (such as Japanese Beetle, Chafers, European Chafer, Oriental Beetle, Asiatic Garden Beetle)**	Herbaceous Species (one or two plants per pot)	2.0 to 3.0	4500 to 3200	7.0 to 3.5	1/8 to 1/4	0.5 to 1.0	Bulk Rate Application: Mix the required amount of **MARATHON 1% Granular Greenhouse and Nursery Insecticide** per cubic yard of medium. Mix thoroughly before filling pots and transplanting. Topical Application: May be made at transplanting, repotting, or on established containerized plants. Irrigate moderately after application to move the active ingredient into the root zone. Do not allow significant leaching and runout for at least 3 irrigations or 10 days, whichever is longer.
		3.5 to 5.0	1600 to 1300	3.9 to 3.0	1/4 to 1/3	1.0 to 1.4	
		5.5 to 7.0	900 to 400	1.8 to 1.2	1/3 to 1/2	1.4 to 2.0	
		8.0 to 10.0	200 to 160	1.0 to 0.8	1/2 to 2/3	2.0 to 2.7	
		11.0 to 12.0	80 to 60	0.8 to 0.5	2/3 to 1	2.7 to 4.1	
	Woody Perennial Species (three or more plants per pot)	2.0 to 3.0	4500 to 3200	9.0 to 7.0	1/4 to 1/3	1.0 to 1.3	
		3.5 to 5.0	1600 to 1300	6.0 to 4.0	1/3 to 1/2	1.3 to 2.0	
		5.5 to 7.0	900 to 400	2.5 to 2.0	1/2 to 2/3	2.0 to 2.7	
		8.0 to 10.0	200 to 160	1.5 to 1.0	2/3 to 1	2.7 to 4.1	
		11.0 to 12.0	80 to 60	1.0 to 0.8	1 to 1 1/2	4.1 to 6.1	
	Ornamental crops grown in flats, benches, or beds	Apply 15 ounces per 1000 sq feet					Apply as a broadcast treatment and incorporate into the soil or media before planting. On established plants, irrigate moderately after application to move the active ingredient into the root zone. Minimize leaching and runout for at least three irrigations or 10 days, whichever is longer.

RECOMMENDED APPLICATIONS - MARATHON 1% G

For systemic insect control in field-grown nursery stock, and indoor and outdoor ornamentals grown in flats, benches, beds and containers.

PEST	USE PATTERN	DOSAGE					REMARKS
			Bulk Application		Topical Application		
		Container size	Pots /cu. yd. of mix	Bulk Rate lbs /cu. yd.	Level teaspoon / pot	Grams / pot	
Adelgids **Aphids** **Thrips (suppression)*** **Whiteflies** **Armored scale (suppression)** **Elm leaf beetles** **Japanese Beetles** **Leafminers, Mealybugs, Psyllids** **Root mealybugs** **Root Weevil Complex (such as Black Vine Weevil, Apopka Weevil, Citrus Root Weevil)**** **Soft scale** **White Grub larvae (such as Japanese Beetle, Chafers, European Chafer, Oriental Beetle, Asiatic Garden Beetle)**	Containerized Plants	1 Gallon	260 to 230	5.0 to 2.5	1 1/4 to 2 1/2	5.0 to 10.0	For optimum control, make applications prior to egg hatch of the target pest. Irrigate moderately after application to move the active ingredient into the root zone.
		2 Gallon	125 to 100	4.4 to 2.2	2 1/2 to 5.0	10.0 to 20.0	
		3 Gallon	70 to 60	3.3 to 1.7	3 2/3 to 7 1/3	15.0 to 30.0	
		5 Gallon	50 to 30	2.0 to 1.0	4 1/2 to 9.0	18.5 to 37.0	
	1 level tsp. of Marathon 1% G = 4.1 grams 3 teaspoons = 1 tablespoon						
	* Feeding on foliage only. Thrips in buds and flowers will not be suppressed. ** For use on non-bearing citrus nursery stock.						
White grub larvae (such as Japanese Beetle, Masked Chafers, European Chafer, Oriental Beetle, Asiatic Garden Beetle)	Field and Forest Nurseries	Apply a single or split (halved) application as a 36-inch band (18 inches either side of the row) prior to egg deposition. Use 2.00 to 2.75 lb/1000 feet of row in a 36 inch band (18 inches either side of the planted row).					Apply May through July. For optimum control, treatment should be followed by rainfall or irrigation.

RESTRICTIONS

Do not apply to soils which are water-logged, or saturated. This condition will not allow the penetration of water into the root zone of the plants.

Do not over-irrigate or allow excessive runoff to occur following an application of **MARATHON 1% Granular Greenhouse and Nursery Insecticide**. Do not apply to bedding plants intended to be used as food crops.

For outdoor ornamentals grown in beds, applications of **MARATHON 1% Granular Greenhouse and Nursery Insecticide** cannot exceed a total of 40 lb. per acre per year.

On plants with a production cycle of less than one year, application is not to exceed a frequency of more than once each 16 weeks for a particular plant. On stock plants and woody crops with a production cycle of greater than one year, application may not exceed once a year.

STORAGE AND DISPOSAL

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

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

Container Disposal: Completely empty container into application equipment. Dispose of empty containers by incineration in a sanitary landfill or if allowed by the state and local authorities, by burning. If burned, stay out of smoke.

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 material is spilled for any reason or cause, carefully contain any spilled material to prevent non-target contamination. Do not walk through spilled material and dispose of as directed for pesticides above. Refer to Precautionary Statements on label for hazards associated with the handling of this material. In spill or leak incidents, keep unauthorized people away. You may contact the Bayer Emergency Response Team for decontamination procedures or any other assistance that may be necessary. The Bayer Kansas City Emergency Response telephone number is 800-414-0244, or contact Chemtrec at 800-424-9300.

Manufactured for:

OLYMPIC HORTICULTURAL PRODUCTS™

Olympic Horticultural Products Company
P.O. Box 230,
Mainland, PA 19451

800-659-6745

OHP 06990

MATERIAL SAFETY DATA SHEET

OLYMPIC HORTICULTURAL PRODUCTS

OLYMPIC HORTICULTURAL PRODUCTS, CO.
P.O. BOX 230, MAINLAND, PA 19451
800-659-6745

Approval Date: 04/28/1999
Supersedes: 10/03/1994

TRANSPORTATION EMERGENCY
CALL CHEMTREC 800-424-9300
INTERNATIONAL 703-527-3887

NON-TRANSPORTATION
OLYMPIC/BAYER EMERGENCY PHONE . . 800-414-0244
OLYMPIC INFORMATION PHONE 800-659-6745

MARATHON® 1% GRANULAR GREENHOUSE & NURSERY INSECTICIDE

EPA Registration Number: 3125-452-598 7

I. CHEMICAL PRODUCT IDENTIFICATION:

PRODUCT NAME . . . . . .: MARATHON 1% Granular Greenhouse & Nursery Insecticide
EPA REGISTRATION NO. . . . . .: 3125-452-59807
CHEMICAL FAMILY . . . . . .: Chloronicotinyl
CHEMICAL NAME . . . . . .: 1-{ (6-chloro-3-pyridinyl)methyl}-N-nitro-2-imidazolidinimine
SYNONYMS . . . . . .: Imidacloprid; BAY NTN 33893
FORMULA . . . . . .: C9 H10 C1 N5 O2

II. COMPOSITION / INFORMATION ON INGREDIENTS:

INGREDIENT NAME /CAS NUMBER	EXPOSURE LIMITS	CONCENTRATION(%)
*** * * HAZARDOUS INGREDIENTS * * ***		
Imidacloprid		
138261-41-3	OSHA: Not Established ACGIH: Not Established	1%
Total crystalline silica (quartz)		
14808-60-7	OSHA: .100 mg/m3 TWA (respirable) ACGIH: .100 mg/m3 TWA (respirable)	0 - 9%

III. HAZARDS IDENTIFICATION:

EMERGENCY OVERVIEW

COLOR: Tan to red. FORM: Granules, Solid. ODOR: None.

POTENTIAL HEALTH EFFECTS

ROUTE (S) OF ENTRY . . . .: Inhalation; Skin Contact

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE EFFECTS

OF EXPOSURE . . . . . .: No specific symptoms of acute overexposure are known to occur in humans. Data extrapolated from animal studies performed on a similar product have shown that this material is mildly toxic by the oral and dermal routes. It is not a dermal irritant or a dermal sensitizer. An acute eye irritation study on a similar product has shown that this material is mildly irritating to the conjunctiva of the eye, but the irritation is reversible within 7 days.

CHRONIC EFFECTS

OF EXPOSURE . . . . . .: No specific symptoms of chronic overexposure to the active ingredient in this material are known to occur in humans. This product may contain an amount of total crystalline silica (quartz) which ranges from approximately 0 - 9%. However, the amount of respirable crystalline silica is expected to be significantly lower based on data provided by the raw material manufacturer. Excessive long-term exposure to respirable crystalline silica may cause silicosis, a form of disabling, progressive and sometimes fatal fibrotic lung disease. Severe and permanent lung damage may result.

CARCINOGENICITY

NTP. . . . . .: Crystalline silica is classified as an NTP anticipated human carcinogen - "substances or groups of substances that may reasonably be anticipated to be carcinogens".

IARC . . . . . .: "IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans," Vol. 42 - for crystalline silica (quartz) - has concluded that there is "sufficient evidence for the carcinogenicity of crystalline silica to experimental animals" and "limited evidence for the carcinogenicity of crystalline silica to humans."

OSHA . . . . . .: Not regulated

MEDICAL CONDITIONS

AGGRAVATED BY EXPOSURE : No specific medical conditions are known which may be aggravated by exposure to the active ingredient in this product; however, pulmonary and respiratory diseases may be aggravated by exposure to respirable crystalline silica.

IV. FIRST AID MEASURES:

FIRST AID FOR EYES . . . . . .: Hold eyelids open and flush with copious amounts of water for 15 minutes. Call a physician if irritation persists or develops after flushing.

FIRST AID FOR SKIN . . . . . .: Remove contaminated clothing. Wash skin with soap and water. Get medical attention if irritation persists. If signs of intoxication (poisoning) occur, get medical attention immediately.

FIRST AID FOR INHALATION .: First, remove victim to fresh air or uncontaminated area. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention as soon as possible.

FIRST AID FOR INGESTION . .: If ingestion is suspected, call a physician or poison control center. Drink one or two glasses of water and induce vomiting by touching back of throat with finger, or, if available, by administering syrup of ipecac. If syrup of ipecac is available, administer 1 tablespoonful (15 mL) of syrup of ipecac followed by 1 to 2 glasses of water. If vomiting does not occur within 20 minutes, repeat the dose once. Do not induce vomiting or give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN . . . . . .: Treat symptomatically. In case of poisoning, it is also requested that Bayer Corp., Agriculture Division, Kansas City, Missouri, be notified. Telephone: 800-414-0244.

ANTIDOTES . . . . . .: None

V. FIRE FIGHTING MEASURES:

FLASH POINT . . . . . .: Not Applicable

EXTINGUISHING MEDIA . . . .: Water; Carbon Dioxide; Dry Chemical; Foam

SPECIAL FIRE FIGHTING PROCEDURES . . . . . .: Keep out of smoke, cool exposed containers with water spray. Fight fire from upwind position. Use self-contained breathing equipment. Contain run-off by diking to prevent entry into sewers or waterway. Equipment or materials involved in pesticide fires may become contaminated.

VI. ACCIDENTAL RELEASE MEASURES:

SPILL OR LEAK PROCEDURES . . . . . .: Isolate area and keep unauthorized people away. Do not walk through spilled material. Avoid breathing dusts and skin contact. Avoid generating dust (a fine water spray mist, plastic film cover, or floor sweeping compound may be used if necessary). Use recommended protective equipment while carefully sweeping up spilled material. Place in covered container for reuse or disposal. Scrub contaminated area with soap and water. Rinse with water. Use dry absorbent material such as clay granules to absorb and collect wash solution for proper disposal. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers, or other waterways.

VII. HANDLING AND STORAGE:

STORAGE TEMPERATURE (MIN/MAX) . . . . . .: None/30 day average not to exceed 100 F

SHELF LIFE . . . . . .: Not Noted

SPECIAL SENSITIVITY . . . . . .: Not Noted

HANDLING/STORAGE PRECAUTIONS . . . . . .: Store in a cool dry area designated specifically for pesticides. Do not store near any material intended for use or consumption by humans or animals.

MATERIAL SAFETY DATA SHEET

MARATHON® 1% GRANULAR GREENHOUSE & NURSERY INSECTICIDE

EPA Registration Number: 3125-452-598 7

VIII. PERSONAL PROTECTION:

EYE PROTECTION

REQUIREMENTS . . . . . .: Goggles should be used when needed to prevent granular material or dust from getting into the eyes.

SKIN PROTECTION

REQUIREMEMTS . . . . . .: Wear long sleeves and trousers to prevent skin contact.**HAND PROTECTION**

REQUIREMENTS . . . . . .: The use of chemical-resistant gloves to prevent skin contact is recommended as good practice.

RESPIRATOR

REQUIREMENTS . . . . . .: Under normal handling conditions, no respiratory protection is needed; however, if use conditions generate excessive dust concentrations, wear a respirator approved for pesticide use by the National Institute for Occupational Safety and Health (NIOSH).

VENTILATION REQUIREMENTS : Maintain exposure levels below the applicable exposure limit through the use of general and local exhaust ventilation where needed.

ADDITIONAL PROTECTIVE

MEASURES . . . . . .: Clean water should be available for washing in case of eye or skin contamination. Educate and train employees in safe use of the product. Follow all label instructions. Launder clothing after use. Wash thoroughly after handling.

IX. PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL FORM . . . . . .: Granules; Solid
COLOR . . . . . .: Tan to red
ODOR . . . . . .: None
ODOR THRESHOLD . . . . . .: Not established
MOLECULAR WEIGHT . . . . . .: 255.7 (for imidacloprid)
BOILING POINT . . . . . .: Not applicable
MELTING/FREEZING POINT . .: Melting: 120-134 C (for imidacloprid)
VISCOSITY . . . . . .: Not applicable
SOLUBILITY IN WATER . . . . . .: Granules do not disperse in water; 0.51 g/L @ 20 C (for Imidacloprid)
SOLUBILITY (NON AQUEOUS) : Not established
SPECIFIC GRAVITY . . . . . .: Not applicable
BULK DENSITY . . . . . .: 36-42 lb/cu-ft
% VOLATILE BY VOLUME . . . .: Not applicable
VAPOR PRESSURE . . . . . .: 1.5 x 10-9 mm @ 20 C (for imidacloprid)
VAPOR DENSITY . . . . . .: Not applicable (Air = 1)

X. STABILITY AND REACTIVITY:

STABILITY . . . . . .: This is a stable material.
HAZARDOUS POLYMERIZATION : Will not occur.
INCOMPATIBILITIES . . . . . .: None known.
INSTABILITY CONDITIONS . . .: Strong exothermal reaction above 200 C (for imidacloprid).
DECOMPOSITION PRODUCTS : Proposed: HCl, HCN, CO, NOx (for imidacloprid).

XI. TOXICOLOGICAL INFORMATION:

Acute toxicity data have not been performed on this product as formulated. The acute toxicity data have been extrapolated from studies performed on similar products, Imidacloprid 2.5% Granular (oral LD50, dermal LD50, inhalation LC50, skin effects, and sensitization) and Imidacloprid 0.62% Granular (eye effects). The non-acute information pertains to the active ingredient, technical grade imidacloprid.

ACUTE TOXICITY

ORAL LD50 . . . . . .: Male and Female Rat: >4820 mg/kg

DERMAL LD50 . . . . . .: Male & Female Rabbit: >2000 mg/kg

INHALATION LC50 . . . . . .: 4 Hr. Exposure to Dust: Male and Female Rat: >5.09 mg/L (analytical) --1 Hr. Exposure to Dust (extrapolated from 4 Hr. LC50): Male and Female Rat: >20 mg/L (analytical)

EYE EFFECTS . . . . . .: Rabbit: Mild irritation to the cojunctiva was observed with all irritation resolving within 7 days.

SKIN EFFECTS . . . . . .: Rabbit: Not a dermal irritant.

SENSITIZATION . . . . . .: Guinea Pig: Not a dermal sensitizer.

SUBCHRONIC TOXICITY . . . . .: In a 3 week dermal toxicity study, rabbits were treated with the active ingredient, imidacloprid, at the limit dose level of 1000 mg/kg for 6 hours/day, 5 days/week. There were no local or systemic effects observed at any of the levels tested. The no-observed-effect-level (NOEL) was 1000 mg/kg. In a 4 week inhalation study, rats were exposed to dust concentrations of imidacloprid at 5.5, 30.5 and 191.2 mg/cubic meter for 6 hours/day, 5 days/week. Effects observed at the high concentration included decreased body weight gains, decreased heart and thymus weights, increased liver weights, and induction of the hepatic mixed-function oxidases. Histopathological examinations did not reveal any organ damage or local injury to the respiratory tract. The NOEL was 5.5 mg/cubic meter based on induction of the hepatic mixed-function oxidases.

CHRONIC TOXICITY . . . . . .: Dogs were administered imidacloprid for 1 year at dietary concentrations of 200, 500, or 1250 ppm. Due to the lack of significant effects, the high dose was increased to 2500 ppm at 17 weeks for the remainder of the study. Effects observed at the high dose included decreased food consumption, increased liver weights and elevated serum chemistries. The NOEL was 500 ppm. In chronic studies using rats, imidacloprid was administered for 2 years to rats at dietary concentrations of 100, 300, 900 or 1800 ppm. Histopathology examinations revealed an increased incidence of mineralization in the colloid of the thyroid follicles at concentrations of 300 ppm and greater. At 1800 ppm, there were changes in the serum chemistries and a slight increase in the incidence of parafollicular hyperplasia seen in the thyroids. Body weight gains were reduced at 900 and 1800 ppm. The overall NOEL was 100 ppm.

CARCINOGENICITY . . . . . .: Imidacloprid was investigated for carcinogenicity in chronic feeding studies using mice and rats at maximum levels of 2000 and 1800 ppm, respectively. There was no evidence of a carcinogenic potential observed in either species.

MUTAGENICITY . . . . . .: The imidacloprid mutagenicity studies, taken collectively, demonstrate that the active ingredient is not genotoxic or mutagenic.

DEVELOPMENTAL TOXICITY .: In a teratology study using rats, imidacloprid was administered by oral gavage during gestation at doses of 10, 30 or 100 mg/kg. At the maternally toxic dose of 100 mg/kg, skeletal examinations of the fetuses revealed a slight increase in the incidence of wavy ribs. The NOELs for maternal and developmental toxicity were 10 and 30 mg/kg, respectively. Teratogenic effects were not observed at any of the doses tested. Rabbits were administered imidacloprid during gestation at oral doses of 8, 24 or 72 mg/kg. At the maternally toxic dose of 72 mg/kg, reduced body weights and delayed skeletal ossification were observed in the fetuses. The NOELs for maternal and developmental toxicity were 8 and 24 mg/kg, respectively. Taratogenic effects were not observed at any of the doses tested.

REPRODUCTION . . . . . .: In a reproduction study, imidacloprid was administered to rats for 2 generations at dietary concentrations of 100, 250 or 700 ppm. Offspring at 700 ppm, exhibited reduced mean body weights and body weight gains. No other reproductive effects were observed. The maternal and reproductive NOELs were 100 and 250 ppm, respectively.

NEUROTOXICITY . . . . . .: In an acute oral neurotoxicity study using rats, imidacloprid was administered as a single dose at concentrations of 42, 151 or 307 mg/kg. Clinical observations and neurotoxicity evaluations were performed over a period of 15 days followed by a neurohistopathological examination. Deaths attributed to imidacloprid were observed at the high dose within a day of treatment. The NOEL for motor and locomotor activity was 42 mg/kg for males. Females at the low dose exhibited minimal decrease in activity in the figure-eight maze. In a subsequent study, the NOEL for motor and locomotor activity in females was 20 mg/kg. The NOEL for neurotoxicity was 307 mg/kg based on the absence of treatment-related microscopic lesions in skeletal muscle or neural tissue. In a 13 week neurotoxicity study, imidacloprid was administered to rats at dietary concentrations of 140, 963 or 3027 ppm. At the mid- and high dose, effects observed included reductions in body weight and feed consumption, and clinical chemistry findings. Neurobehavioral changes were observed only in males at the high dose. There were no correlative micropathologic findings in muscle or neural tissues in any animals at any treatment level. The NOEL for neurotoxicity was 3027 ppm. The overall NOEL was 140 ppm.

MATERIAL SAFETY DATA SHEET

MARATHON® 1% GRANULAR GREENHOUSE & NURSERY INSECTICIDE

EPA Registration Number: 3125-452-598 7

XII. ECOLOGICAL INFORMATION:

This product has been thoroughly evaluated for ecological effects. Olympic will provide a summary of specific data upon written request. As with any pesticide, this product should be used according to label directions and should be kept out of streams, lakes and other aquatic habits of concern. In the event of a spill, please contact the Bayer Emergency Response Number at 1-800-411-0244.

XIII. DISPOSAL CONSIDERATIONS:

WASTE DISPOSAL METHOD: Follow container label instructions for disposal of wastes generated during use in compliance with the product label. In other situations, bury in an EPA approved landfill or burn in an incinerator approved for pesticide destruction. Do not reuse container.

XIV. TRANSPORTATION INFORMATION:

TECHNICAL SHIPPING NAME .: Imidacloprid
FREIGHT CLASS BULK . . . . . .: Insecticides, NOI-NMFC 102120
FREIGHT CLASS PACKAGE . .: Insecticides, NOI-NMFC 102120
PRODUCT LABEL . . . . . .: Not Noted

DOT (DOMESTIC SURFACE)
PROPER SHIPPING NAME . .: Not hazardous or regulated
HAZARD CLASS OR DIVISION . . . . . .: Non-Regulated
IMO / IMDG CODE (OCEAN)
PROPER SHIPPING NAME . .: Not hazardous or regulated
HAZARD CLASS DIVISION NUMBER . . . . . .: Non-Regulated
ICAO / IATA (AIR)
PROPER SHIPPING NAME . .: Not hazardous or regulated
HAZARD CLASS DIVISION NUMBER . . . . . .: Non-Regulated

XV. REGULATORY INFORMATION:

OSHA STATUS . . . . . .: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
TSCA STATUS . . . . . .: This product is exempt from TSCA Regulation under FIFRA Section 3 (2) (B) (ii) when used as a pesticide.
CERCLA REPORTABLE QUANTITY . . . . . .: No components listed.
SARA TITLE III:
SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES . . . . . .: None.
SECTION 311/312 HAZARD CATEGORIES . .: Immediate Health Hazard.
SECTION 313 TOXIC CHEMICALS . . . . .: None.
RCRA STATUS . . . . . .: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

XVI. OTHER INFORMATION:

NFPA 704M RATINGS:

Health	Flammability	Reactivity	Other
1		1	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

Olympic's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. NFPA ratings are provided by Olympic as a customer service.

REASON FOR ISSUE . . . . . .: Create new MSDS
APPROVAL DATE . . . . . .: 04/28/1999
SUPERSEDES DATE . . . . . .: None
MSDS NUMBER . . . . . .: 36758

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Olympic Horticultural Products, Co. The data on this sheet relates only to the specific material designated herein. Olympic Horticultural Products, Co. assumes no legal responsibility for use or reliance upon these data.

MARATHON® 60 WP

OLYMPIC HORTICULTURAL PRODUCTS

Greenhouse and Nursery Insecticide in Water Soluble Packaging SPECIMEN LABEL

FOR SYSTEMIC INSECT CONTROL IN ORNAMENTAL CROPS

ACTIVE INGREDIENT:	
Imidacloprid,	
1-[(6-Chloro-3-pyridinyl)methyl]-*N*-nitro-2-imidazolidinimine	60.0%
INERT INGREDIENTS	40.0%
	100.0%

Keep water soluble packets in this container and store in a cool dry place but not below freezing (32 F). Do Not Remove Packets From Container Except For Immediate Use.

EPA Est. indicated by second and third digits of the batch number on this package.
(98) = 33967-NJ-1 (85) = 065387-AR-002

EPA Reg. No. 3125-492-59807

Net Contents: 100 grams or Five - 20 gram packets

STOP - READ THE LABEL BEFORE USE

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 the label, find someone to explain it to you in detail.)

MANUFACTURED FOR:

Olympic Horticultural Products Co., P. O. Box 230, Mainland, PA 19451

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed, inhaled, or absorbed through skin. Causes eye irritation. Avoid contact with skin, eyes, or clothing. Avoid breathing dust or vapor.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Water-proof 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.

Engineering controls statements:

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.

User Safety Recommendations:

User should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing 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.

STATEMENTS OF PRACTICAL TREATMENT

If swallowed: Call a physician or Poison Control Center. Drink one or two glasses of water and induce vomiting by touching back of throat with finger, or, if available, by administering syrup of ipecac. If syrup of ipecac is available, administer 1 tablespoonful (15mL) of syrup of ipecac followed by 1 to 2 glasses of water. If vomiting does not occur within 20 minutes, repeat the dose once. Do not induce vomiting or give anything by mouth to an unconscious person. **If on skin:** Wash thoroughly with soap and water. Get medical attention if irritation occurs. **If in eyes:** Hold eyelids open and flush with plenty of water.

To Physician: No specific antidote is available. Treat the patient symptomatically.

ENVIRONMENTAL HAZARDS

This product is highly toxic to aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues on the foliage of blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

This chemical demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

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 the restricted entry interval (REI) of 12 hours.

Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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 • Waterproof gloves • Shoes plus socks

MARATHON® 60 WP G&N in WSP

IMPORTANT: Read these entire DIRECTIONS FOR USE, GENERAL INFORMATION, AND CONDITIONS OF SALE before using **MARATHON® 60 WP Greenhouse and Nursery Insecticide**.

CONDITIONS OF SALE: THE DIRECTIONS ON THIS LABEL WERE DETERMINED THROUGH RESEARCH TO BE APPROPRIATE FOR THE CORRECT USE OF THIS PRODUCT. THIS PRODUCT HAS BEEN TESTED UNDER DIFFERENT ENVIRONMENTAL CONDITIONS BOTH INDOORS AND OUTDOORS UNDER CONDITIONS SIMILAR TO THOSE THAT ARE ORDINARY AND CUSTOMARY WHERE THE PRODUCT IS TO BE USED. INSUFFICIENT CONTROL OF PESTS OR PLANT INJURY MAY RESULT FROM THE OCCURRENCE OF EXTRAORDINARY OR UNUSUAL CONDITIONS, OR FROM FAILURE TO FOLLOW LABEL DIRECTIONS. IN ADDITION, FAILURE TO FOLLOW LABEL DIRECTIONS MAY CAUSE INJURY TO ANIMALS, MAN AND DAMAGE TO THE ENVIRONMENT. OLYMPIC OFFERS, AND THE BUYER ACCEPTS AND USES, THIS PRODUCT SUBJECT TO THE CONDITIONS THAT EXTRAORDINARY OR UNUSUAL ENVIRONMENTAL CONDITIONS, OR FAILURE TO FOLLOW LABEL DIRECTIONS ARE BEYOND THE CONTROL OF OLYMPIC AND ARE, THEREFORE, THE RESPONSIBILITY OF THE BUYER.

Do not formulate this product into other end-use products.

GENERAL INFORMATION

MARATHON 60 WP Greenhouse and Nursery Insecticide is for insect control on ornamental plants in nurseries and greenhouses. **MARATHON 60 WP Greenhouse and Nursery** Insecticide is a systemic product and will be translocated upward within the plant. **This product is to be applied as a soil treatment only.** To assure optimum effectiveness, the product must be placed where the roots of the plant can absorb the active ingredient. Irrigate moderately but thoroughly after application, allowing no leaching and runout from container for at least 10 days after application.

Incorporation: Incorporation of **MARATHON 60 WP Greenhouse and Nursery Insecticide** can be achieved by cultivation, irrigation, rainfall, mechanical placement, soil injection, drenching, and broadcast sprays.

Woody Perennials: Onset of protection is slower than in herbaceous species. A delay of 2 or more weeks should be expected. Longer delays may be expected with larger plants. Application should therefore be made well in advance of expected insect activity.

Bark Media: Media with 30% or more bark content may confer a shorter period of protection when treated with **MARATHON 60 WP Greenhouse and Nursery Insecticide**.

Tank Mixes: MARATHON 60 WP Greenhouse and Nursery Insecticide has been found to be compatible with commonly used liquid fertilizers, fungicides and insecticides. Check physical compatibility using the correct proportion of products in a small jar test if local experience is unavailable.

PLEASE NOTE: Do not use **MARATHON 60 WP Greenhouse and Nursery Insecticide** 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 which is not soluble in water. However, normal chlorinated water is acceptable for mixing.

MIXING: Within each foil pouch is a clear inner packet containing **MARATHON 60 WP Greenhouse and Nursery Insecticide**. The clear inner packet is water soluble. Do not allow packets to become wet prior to adding to the tank. Do not handle the clear inner packets with wet hands or wet gloves. Rough handling may cause breakage. Reseal outer carton to protect remaining packets. To prepare the mixture, remove the outer foil pouch and drop the required number of unopened clear water soluble packets, as determined under "Recommended Drench and Irrigation Applications", into the spray tank while filling with water to the desired level. Operate the agitator while mixing. Depending on the water temperature and the degree of agitation, the packets should be completely dissolved within a few minutes from the time they are added to the water. Cooler water temperatures increase the time needed for the inner packet to dissolve completely.

APPLICATION EQUIPMENT FOR USE ON ORNAMENTALS AND IN FIELD NURSERIES: Apply **MARATHON 60 WP Greenhouse and Nursery Insecticide** in sufficient water to provide adequate distribution in the treated area. The use of accurately calibrated equipment normally used for soil application of insecticides is required. Use equipment which will produce a uniform, coarse droplet spray, using a low pressure setting to eliminate off-target drift. Check calibration periodically to ensure that equipment is working properly.

APPLICATION THROUGH IRRIGATION SYSTEMS

MARATHON 60 WP Greenhouse and Nursery Insecticide may be applied at rates recommended on this label either alone or in tank mixture with other pesticides and chemicals registered for application through irrigation systems. The normal dilution ratio is 1:10 to 1:200, depending on the system. Always meter the product into the irrigation water during the first part of the irrigation cycle. The product may be mixed separately prior to injection. Agitation may be necessary if the mixture is allowed to stand more than 24 hours.

Remove scale, pesticide residue and other foreign matter from the tank and entire irrigation system.

Apply **MARATHON 60 WP Greenhouse and Nursery Insecticide** only through microirrigation (individual spaghetti tube), drip irrigation, overhead irrigation, or hand-held or motorized calibrated irrigation equipment.

Do not apply this product through any other type of irrigation system. Crop injury or lack of effectiveness can result from nonuniform distribution of treated water.

If you have any questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or a person who is under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

SAFETY DEVICES FOR IRRIGATION SYSTEMS CONNECTED TO PUBLIC WATER SUPPLIES: If the source of water for your irrigation system is a public water supply, follow the instructions below:

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

SAFETY DEVICES FOR IRRIGATION SYSTEMS NOT CONNECTED TO A PUBLIC WATER SUPPLY:

1. The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where the pesticide distribution is adversely affected.

6. Systems must use a metering pump such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of material that is compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

RESTRICTIONS

Do not apply to soils which are water-logged, or saturated . This condition will not allow the penetration of the insecticide into the root zone of the plants.

Do **not** allow leachate runout for the first 10 days after application, in order to retain the product and facilitate full plant uptake of the active ingredient. Do not apply to bedding plants intended to be used as food crops.

For outdoor ornamentals grown in beds or turf, applications of **MARATHON 60 WP Greenhouse and Nursery Insecticide** cannot exceed a total of 10.7 oz (0.4 lb of active ingredient) per acre per year.

On plants with a production cycle of less than one year, application is not to exceed a frequency of more than once each 16 weeks for a particular plant. On stock plants and woody crops with a production cycle of greater than one year, application may not exceed once a year. Do not plant food crops in treated soil within one year of treatment.

MARATHON 60 WP Greenhouse and Nursery Insecticide

RECOMMENDED DRENCH AND IRRIGATION APPLICATIONS

For use only on greenhouse and nursery ornamental plants using soil drenches, micro-irrigation, drip irrigation, overhead irrigation, or hand-held or motorized calibrated irrigation equipment.

PEST	USE PATTERN		DOSAGE - MARATHON 60 WP		REMARKS
Adelgids **Aphids** **Armored Scale (suppression)** **Elm leaf beetles** **Fungus gnat larvae*** **Japanese Beetles** **Lacebugs** **Leafminers** **Mealybugs** **Psyllids** **Root mealy bugs** **Root Weevil Complex (such as Black Vine Weevil, Apopka Weevil, Citrus Root Weevil***)** **Soft Scale** **Thrips (suppression)**** **White Grub larvae (such as Japanese Beetle, Masked Chafers, European Chafer, Oriental Beetle Asiatic Garden Beetle** **Whiteflies**	Plants in containers	Herbaceous Species (one or two plants per pot)	Container size (Inches) 2 3 4 5 6 7 8 9 10 11 12	No. pots treated with one (1) Packet 3000 2000 1500 1200 1000 850 750 675 600 550 500	Use sufficient volume to wet most of the potting medium without loss of liquid from the bottom of the container. Apply according to label directions. Follow application with moderate irrigation. Irrigate carefully during the next 10 days in order to avoid loss of active ingredient due to leaching. * To assure activity on foliar pests as well as fungus gnat larvae, apply to plants with a developed root system. ** Feeding on foliage only; thrips in buds and flowers will not be suppressed. *** For use on non-bearing citrus nursery stock.
		Woody Perennials	2 3 4 5 6 7 8 9 10 11 12	2000 1350 1000 800 650 550 500 450 400 350 300	
		Herbaceous Species (three or more plants per pot)	Use the above woody perennial rates		

MARATHON 60 WP Greenhouse and Nursery Insecticide continued

RECOMMENDED DRENCH AND IRRIGATION APPLICATIONS

For use only on greenhouse and nursery ornamental plants using soil drenches, micro-irrigation, drip irrigation, overhead irrigation, or hand-held or motorized calibrated irrigation equipment.

PEST	USE PATTERN	DOSAGE - MARATHON 60 WP		REMARKS
	Containerized Plants	Container Size 1 gallon 2 gallon 3 gallon 5 gallon	No. Pots treated with One (1) Packet 240 to 120 120 to 60 90 to 40 65 to 30	Apply in sufficient water to wet the potting medium. For optimum control, make applications prior to egg hatch of the target pest. Irrigate moderately after application to move the active ingredient into the root zone.
White grub larvae (such as Japanese Beetle, Masked Chafers, European Chafer, Oriental Beetle, Asiatic Garden Beetle)	Field Nurseries	Apply as a 36-inch band (18 inches either side of the row) prior to egg deposition. Use 1 packet per 1000 feet of row. For grub control in areas of turf, apply a broadcast application using 1 packet per 3000 sq ft.		Vegetation in the area to be treated should be mowed to a height of 3 inches or less prior to application. Mowing to the lowest possible height will insure greater consistency of control. Apply May through July. For optimum control, treatment should be followed by rainfall or irrigation. Do not use less than 2 gallons of spray volume per 1000 square feet.

—STORAGE AND DISPOSAL—

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

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

Container Disposal: After removal of all PVA packets, dispose of empty container in a sanitary landfill, by incineration or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

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 the container is leaking, invert to prevent leakage. If container is leaking or material 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 above. In spill or leak incidents, keep unauthorized people away. You may contact the Bayer Emergency Response Team for decontamination procedures or any other assistance that may be necessary. The Bayer Kansas City Emergency Response telephone number is 800-414-0244, or contact Chemtrec at 800-424-9300.

OLYMPIC
HORTICULTURAL PRODUCTS™

Manufactured for:
Olympic Horticultural Products Company
P. O. Box 230
Mainland, PA 19451
(800) 659-6745

OHP03002

MATERIAL SAFETY DATA SHEET

OLYMPIC HORTICULTURAL PRODUCTS, CO.
P.O. BOX 230, MAINLAND, PA 19451
800-659-6745

Approval Date: 02/13/97
Supersedes: None

TRANSPORTATION EMERGENCY
CALL CHEMTREC 800-424-9300
DISTRICT OF COLUMBIA. 202-483-7616

NON-TRANSPORTATION
OLYMPIC/BAYER EMERGENCY PHONE .800-414-0244
OLYMPIC INFORMATION PHONE 800-659-6745

MARATHON® 60 WP GREENHOUSE and NURSERY INSECTICIDE in WATER SOLUBLE PACKAGING

EPA Registration Number: 3125-492-598 7

1. CHEMICAL PRODUCT IDENTIFICATION:

PRODUCT NAME . . . . . Marathon 60 WP Greenhouse and Nursery Insecticide in Water Soluble Packaging
CHEMICAL FAMILY . . . . . Chloronicotinyl
CHEMICAL NAME . . . . . 1-{(6-chloro-3-pyridinyl)methyl}-*N*-nitro-2-imidazolidinimine
SYNONYMS . . . . . Imidacloprid; BAY NTN 33893
FORMULA . . . . . C9 H10 Cl N5 02
PRODUCT USE . . . . . Commercial Insecticide

2. COMPOSITION/INFORMATION ON INGREDIENTS:

INGREDIENT NAME / CAS NUMBER **EXPOSURE LIMITS** **CONCENTRATION (%)**

*** * * HAZARDOUS INGREDIENTS * * ***

Imidacloprid
138261-41-3 OSHA: Not Established 60%
ACGIH: Not Established

Ingredient 1968
Specific chemical identity is witheld as a trade secret.
OSHA: Not Established . . . . . .3 - 5%
ACGIH: Not Established

Ingredient 1611
Specific chemical identity is withheld as a trade secret.
OSHA: Not Established . . . . . .10 - 20%
ACGIH: Not Established

Total crystalline silica (quartz)
14808-60-7 OSHA: .10 mg / m3 TWA (respirable) . . . . . .< 1%
ACGIH: .10 mg / m3 TWA (respirable)

Ingredient 1606
Specific chemical identity is witheld as a trade secret.
OSHA: 5.00 mg / m3 TWA (respirable) . .10 - 20%
ACGIH: 2.00 mg / m3 TWA (respirable)

3. HAZARDS INDENTIFICATION:

EMERGENCY OVERVIEW

CAUTION! Color: Off-white to light tan; Form: Powder; Odor: Mild, musty; Harmful if inhaled or ingested; Harmful if absorbed through skin; Causes eye irritation.

POTENTIAL HEALTH EFFECTS:

ROUTE (S) OF ENTRY . . . . . : Inhalation; Skin Contact; Skin Absorption

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE EFFECTS OF EXPOSURE . . . . . .: No specific symptoms of acute overexposure are known to occur in humans. Animal studies have shown that this material is mildly toxic by the oral and dermal routes. It is minimally irritating to the conjunctiva of the eye but the irritation is reversible within 24 hours. It is a slight dermal irritant, but is not a dermal sensitizer.

CHRONIC EFFECTS OF EXPOSURE . . . .: Based on animal studies, no adverse effects or symptoms would be expected from chronic exposure to the active ingredient in this product during normal use. This product may contain up to approximately 0.7% total crystalline silica. However, the amount of respirable crystalline silica is expected to be significantly lower based on data provided by the raw material manufacturer. Excessive long-term exposure to respirable crystalline silica may cause silicosis, a form of progressive pulmonary fibrosis. Severe and permanent lung damage may result.

CARINOGENICITY . . . . . .: Marathon 60 WP is not listed as a carcinogen by NTP or IARC, or regulated as a carcinogen by OSHA. However, it may contain crystalline silica (quartz), a substance which is classified by NTP as a Group 2 carcinogen and by IARC as a Group 2A carcinogen. Crystalline silica is a naturally-occurring mineral component of many sands and clays. Considerable controversy exists regarding the carcinogenic potential of crystalline silica in humans, but based on animal data, the potential must be considered relevant if crystalline silica is inhaled under excessive exposure conditions. However, the respirable portion of the silica which may be contained in this product is small, such that excessive inhalation exposure during normal conditions of use is unlikely.

NTP . . . . . .: Crystalline silica is classified as an NTP Anticipated Human Carcinogen - "Substances or group of substances that may reasonably be anticipated to be carcinogens."

IARC . . . . . .: "IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans", Vol. 42 - for Crystalline Silica (Quartz) - determined that "There is sufficient evidence for the carcinogenicity of crystalline silica to experimental animals. There is limited evidence for the carcinogenicity of crystalline silica to humans."

OSHA . . . . . .: Not regulated

MEDICAL CONDITIONS

AGGRAVATED BY EXPOSURE . . . . . .: No specific medical conditions are known which may be aggravated by exposure to the active ingredient in this product. However, pulmonary and respiratory diseases may be aggravated by exposure to respirable crystalline silica.

4. FIRST AID MEASURES:

FIRST AID FOR EYES . . . . . .: Hold eyelids open and flush with copious amounts of water for 15 minutes. Call a physician if irritation persists or develops after flushing.

FIRST AID FOR SKIN . . . . . .: Remove contaminated clothing. Wash skin with soap and water. Get medical attention if irritation persists. If signs of intoxication (poisoning) occur, get medical attention immediately.

FIRST AID FOR INHALATION . . . . . .: First, remove victim to fresh air or uncontaminated area. If not breathing, give artificial respiration, preferably mouth-to mouth. Get medical attention as soon as possible.

FIRST AID FOR INGESTION . . . . . .: If ingestion is suspected, call a physician or poison control center. Drink one or two glasses of water and induce vomiting by touching back of throat with finger, or, if available, by administering syrup of ipecac. If syrup of ipecac is available, administer 1 tablespoonful (15mL) of syrup of ipecac followed by 1 to 2 glasses of water. If vomiting does not occur within 20 minutes, repeat the dose once. Do not induce vomiting or give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN . . . . . .: Treat symptomatically. In case of poisoning, it is also requested that Bayer Corp., Agriculture Division, Kansas City, Missouri, be notified. Telephone: 800-414-0244

ANTIDOTES . . . . . .: None

MATERIAL SAFETY DATA SHEET

MARATHON® 60 WP GREENHOUSE and NURSERY INSECTICIDE in WATER SOLUBLE PACKAGING

EPA Registration Number: 3125-492-598 7

5. FIRE FIGHTING MEASURES:

FLASH POINT . . . . . .: Not Applicable

FLAMMABLE LIMITS:

UPPER EXPLOSIVE LIMIT (UEL) (%) . . . .: Not Established

LOWER EXPLOSIVE LIMIT (LEL) (%) . . .: Not Established

EXTINGUISHING MEDIA . . . . . .: Water; Carbon Dioxide; Dry Chemical; Foam

SPECIAL FIRE FIGHTING PROCEDURES. : Keep out of smoke, cool exposed containers with water spray. Fight fire from upwind position. Use self-contained breathing equipment. Contain run-off by diking to prevent entry into sewers or waterways. Equipment or materials involved in pesticide fires may become contaminated.

6. ACCIDENTAL RELEASE MEASURES:

SPILL OR LEAK PROCEDURES . . . . . .: Isolate area and keep unauthorized people away. Do not walk through spilled material. Avoid breathing dusts and skin contact. Avoid generating dust (a fine water spray mist, plastic film cover, or floor sweeping compound may be used if necessary). Use recommended protective equipment while carefully sweeping up spilled material. Place in covered container for reuse or disposal. Scrub contaminated area with soap and water. Rinse with water. Use dry absorbent material such as clay granules to absorb and collect wash solution for proper disposal. Contaminated soil may have to removed and disposed. Do not allow material to enter streams, sewers, or other waterways.

7. HANDLING AND STORAGE:

STORAGE TEMPERATURE (MIN / MAX) . . . .: None / 30 day average not to exceed 100 F

SHELF LIFE . . . . . .: Not noted

SPECIAL SENSITIVITY . . . . . .: Not noted

HANDLING / STORAGE PRECAUTIONS . . .: Store in a cool dry area designated specifically for pesticides. Do no store near any material intended for use or consumption by humans or animals.

8. PERSONAL PROTECTION:

EYE PROTECTION REQUIREMENTS . . . . . .: Goggles should be used when needed to prevent dust from getting into the eyes.

SKIN PROTECTION REQUIREMENTS . . . . . .: Wear long sleeves and trousers to prevent skin contact.

HAND PROTECTION REQUIREMENTS . . . . .: The use of chemical-resistant gloves to prevent skin contact is recommended as good practice.

VENTILATION REQUIREMENTS . . . . . .: Control exposure levels through the use of general and local exhaust ventilation where needed.

RESPIRATOR REQUIREMENTS . . . . . .: Under normal handling conditions, no respiratory protection is needed; however, when potential exposure to product dust is excessive, wear a NIOSH-approved respirator for dusts and mists or for pesticides.

ADDITIONAL PROTECTIVE MEASURES . . . .: Clean water should be available for washing in case of eye or skin contamination. Educate and train employees in safe use of the product. Follow all label instructions. Launder clothing after use. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERITES:

PHYSICAL FORM . . . . . .: Powder

COLOR . . . . . .: Off-white to light tan

ODOR . . . . . .: Mild, musty

MOLECULAR WEIGHT . . . . . .: 255.7 (for imidacloprid)

BOILING POINT . . . . . .: Not applicable

MELTING / FREEZING POINT . . . . . .: Melting: 120 - 134 C (for imidacloprid)

SOLUBILITY IN WATER . . . . . .: 500 ppm (for imidacloprid)

SPECIFIC GRAVITY . . . . . .: Not applicable

BULK DENSITY . . . . . .: 14 - 17 lbs / cu ft (fluffed)

VAPOR PRESSURE . . . . . .: 1.5 x 10 - 9 mm @ 20 C (for imidacloprid)

10. STABILITY AND REACTIVITY:

STABILITY . . . . . .: This is a stable material.

HAZARDOUS POLYMERIZATION . . . . . .: Will not occur.

INCOMPATIBILITIES . . . . . .: None known.

INSTABILITY CONDITIONS . . . . . .: Strong exothermal reaction above 200 C (for imidacloprid).

DECOMPOSITION PRODUCTS . . . . . .: Proposed: decomposition products under extreme conditions such as fire are: HCl, HCN, CO, NOx (for imidacloprid).

11. TOXICOLOGICAL INFORMATION:

Acute toxicology information provided below has been extrapolated from a similar formulation, containing a higher percentage of the active ingredient, imidacloprid. The non-acute information pertains to the technical-grade active ingredient.

ACUTE TOXICITY:

ORAL LD50 . . . . . .: Male Rat: 2591 mg / kg; Female Rat: 1858 mg / kg .

DERMAL LD50 . . . . . .: Male and Female Rat: > 2000 mg / kg.

INHALATION LC50 . . . . . .: 4 Hr. Exposure to Liquid Aerosol: Male Rat: 2.65 mg / L (analytical); Female Rat: 2.75 mg / L (analytical) — 1 Hr. Exposure to Liquid Aerosol (extrapolated from 4 Hr. LC50): Male Rat: 10.6 mg / L (analytical); Female Rat: 11.0 mg / L (analytical).

EYE EFFECTS . . . . . .: Rabbit: Only minimal irritation to the conjunctiva was observed with all remarkable irritation resolving by 24 hours.

SKIN EFFECTS . . . . . .: Rabbit: Slight dermal irritant.

SENSITIZATION . . . . . .: Guinea Pig: Not a dermal sensitizer.

SUBCHRONIC TOXICITY . . . . . .: In a 3 week dermal toxicity study, rabbits were treated with the active ingredient, imidacloprid, at the limit dose level of 1000 mg / kg for 6 hours / day, 5 days / week. There were no local or systemic effects observed at any of the levels tested. The no-observed-effect-level (NOEL) was 1000 mg / kg. In a 4 week inhalation study, rats were exposed to dust concentrations of imidacloprid at 5.5, 30.5 and 191.2 mg / cubic meter for 6 hours / day, 5 days / week. Effects observed at the high concentration included decreased body weight gains, decreased heart and thymus weights, increased liver weights, and induction of the hepatic mixed-function oxidases. Histopathological examinations did not reveal any organ damage or local injury to the respiratory tract. The NOEL was 5.5 mg / cubic meter based on induction of the hepatic mixed-function oxidases.

CHRONIC TOXICITY . . . . . .: Dogs were administered imidacloprid for 1 year at dietary concentrations of 200, 500 or 1250 ppm. Due to the lack of significant effects, the high dose was increased to 2500 ppm at 17 weeks for the remainder of the study. Effects observed at the high dose included decreased food consumption, increased liver weights and elevated serum chemistries. The NOEL was 500 ppm. In chronic studies using rats, imidacloprid was administered for 2 years to rats at dietary concentrations of 100, 300, 900 or 1800 ppm. Histopathology examinations revealed an increased incidence of mineralization in the colloid of the thyroid follicles at concentrations of 300 ppm and greater. At 1800 ppm, there were changes in the serum chemistries and a slight increase in the incidence of parafollicular hyperplasia seen in the thyroids. Body weight gains were reduced at 900 and 1800 ppm. The overall NOEL was 100 ppm.

CARCINOGENICITY . . . . . .: Imidacloprid was investigated for carcinogenicity in chronic feeding studies using mice and rats at maximum levels of 2000 and 1800 ppm, respectively. There was no evidence of a carcinogenic potential observed in either species.

MUTAGENICITY . . . . . .: The imidacloprid mutagenicity studies, taken collectively, demonstrate that the active ingredient is not genotoxic or mutagenic.

DEVELOPMENTAL TOXICITY . . . . . .: In a teratology study using rats, imidacloprid was administered by oral gavage during gestation at doses of 10, 30 or 100 mg / kg. At the maternally toxic dose of 100 mg / kg, skeletal examinations of the fetuses revealed a slight

MATERIAL SAFETY DATA SHEET

MARATHON® 60 WP GREENHOUSE and NURSERY INSECTICIDE in WATER SOLUBLE PACKAGING

EPA Registration Number: 3125-492-598 7

increase in the incidence of wavy ribs. The NOELs for maternal and developmental toxicity were 10 and 30 mg / kg, respectively. Teratogenic effects were not observed at any of the doses tested. Rabbits were administered imidacloprid during gestation at oral doses of 8, 24 or 72 mg / kg. At the maternally toxic dose of 72 mg / kg, reduced body weights and delayed skeletal ossification were observed in the fetuses. The NOELs for maternal and developmental toxicity were 8 and 24 mg / kg, respectively. Teratogenic effects were not observed at any of the doses tested.

REPRODUCTION . . . . . .: In a reproduction study, imidacloprid was administered to rats for 2 generations at dietary concentrations of 100, 250 or 700 ppm. Offspring at 700 ppm, exhibited reduced mean body weights and body weight gain. No other reproductive effects were observed. The maternal and reproductive NOELs were 100 and 250 ppm, respectively.

NEUROTOXICITY . . . . . .: In an acute neurotoxicity study using rats, imidacloprid was administered as a single oral dose at concentrations of 42, 151 or 307 mg / kg. Clinical observations and neurotoxicity evaluations were performed over a period of 15 days followed by a neurohistopathological examination. Deaths attributed to imidacloprid were observed at the high dose within a day of treatment. The NOEL for motor and locomotor activity was 42 mg / kg for males. Females at the low dose exhibited minimal decrease in activity in the figure-eight maze. In a subsequent study, the NOEL for motor and locomotor activity in females was 20 mg / kg. The NOEL for neurotoxicity was 307 mg / kg based on the absence of treatment-related microscopic lesions in skeletal muscle or neural tissue. In a 13 week neurotoxicity study, imidacloprid was administered to rats at dietary concentrations of 140, 963 or 3027 ppm. At the mid-and high dose, effects observed included reductions in body weight and feed consumption, and clinical chemistry findings. Neurobehavorial changes were observed only in males at the high dose. There were no correlative micropathologic findings in muscle or neural tissues in any animals at any treatment level. The NOEL for neurotoxicity was 3027 ppm. The overall NOEL was 140 ppm.

12. ECOLOGICAL INFORMATION:

ECOLOGICAL POSTNOTE . . . . . .: This compound has been thoroughly evaluated for ecological effects. Olympic will provide a summary of specific data upon written request. As with any pesticide, this product should be used according to label directions and should be kept out of streams, lakes and other aquatic habitats of concern. In case of accidents involving environmental release of this material, please call Bayer's emergency number: 1-800-414-0244.

13. DISPOSAL CONSIDERATIONS:

WASTE DISPOSAL METHOD . . . . . .: Follow container label instructions for disposal of wastes generated during use in compliance with the product label. In other situations, bury in an EPA approved landfill or burn in an incinerator approved for pesticide destruction. Do not reuse container, except as authorized by Olympic Horticultural Products, Co.

14. TRANSPORTATION INFORMATION:

TECHNICAL SHIPPING NAME . . . . . .: Imidacloprid
FREIGHT CLASS BULK . . . . . .: Insecticides, NOI-NMFC 102120
FREIGHT CLASS PACKAGE . . . . . .: Insecticides, NOI-NMFC 102120
PRODUCT LABEL . . . .: Not noted

DOT (DOMESTIC SURFACE):
HAZARD CLASS OR DIVISION . . . . . .: Non-Regulated

IMO / IMDG CODE (OCEAN):
HAZARD CLASS DIVISION NUMBER . . .: Non-Regulated

ICAO / IATA (AIR):
HAZARD CLASS DIVISION NUMBER . . . .: Non-Regulated

15. REGULATORY INFORMATION:

OSHA STATUS . . . . . .: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS . . . . . .: This product is exempt from TSCA Regulation under FIFRA Section 3 (2) (B) (ii) when used as a pesticide.
CERCLA REPORTABLE QUANTITY . . . . . .: No components listed.

SARA TITLE III:
SECTION 302 EXTREMELY
HAZARDOUS SUBSTANCE . . . . . .: None
SECTION 311 / 312
HAZARD CATEGORIES . . . . . .: Immediate Health Hazard
SECTION 313
TOXIC CHEMICALS . . . . . .: None
RCRA STATUS . . . . . .: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20 - 24).

16. OTHER INFORMATION:

NFPA 704M RATINGS:	Health	Flammability	Reactivity	Other
	1	1	1	0

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

Olympic's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. NFPA ratings are provided by Olympic as a customer service.

REASON FOR NEW ISSUE . . . . . .: Create new MSDS
APPROVAL DATE . . . . . .: 02 / 13 / 97
SUPERSEDES DATE . . . . . .: None
MSDS NUMBER . . . . . .: 26730

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Olympic Horticultural Products, Co. The data on this sheet relates only to the specific material designated herein. Olympic Horticultural Products, Co. assumes no legal responsibility for use or reliance upon these data.

OLYMPIC HORTICULTURAL PRODUCTS™

MSDS OHP 985500 397

MARATHON® II

OLYMPIC HORTICULTURAL PRODUCTS™

Greenhouse and Nursery Insecticide — SPECIMEN LABEL

FOR FOLIAR INSECT CONTROL IN ORNAMENTALS, FRUIT AND NUT TREES, AND VEGETABLE PLANTS IN GREENHOUSES, NURSERIES AND INTERIOR PLANTSCAPES

ACTIVE INGREDIENT:

Imidacloprid,1-[(6-Chloro-3pyridinyl)methyl]-*N*-nitro-2-imidazolidinimine	21.4%
OTHER INGREDIENTS	78.6%
	100.0%

Contains 2 pounds of imidacloprid per gallon

SHAKE WELL BEFORE USING

E PA Est. indicated by second and third digits of the batch number on this package.

EPA Reg. No. 3125-549-59807 **(65) = 432-TX-1 (03) = 3125-MO-1**

Net Contents: 250 Milliliters (8.45 fluid ounces)

MARATHON® II

STOP - Read The Label Before Use

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUCION AL USUARIO: Si usted no puede leer o entender inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

(TO THE USER: If you cannot read or understand English, do not use this product until the label has been fully explained to you.)

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling. Keep children or pets off treated area until spray is dry.

Personal Protective Equipment (PPE):

Applicators and other handlers must wear:

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Water-proof 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.

FIRST AID

If swallowed: Call a physician or Poison Control Center. Drink one or two glasses of water and induce vomiting by touching back of throat with finger, or, if available, by administering syrup of ipecac. If syrup of ipecac is available, administer 1 tablespoonful (15 mL) of syrup of ipecac followed by 1 to 2 glasses of water. If vomiting does not occur within 20 minutes, repeat the dose once. Do not induce vomiting or give anything by mouth to an unconscious person. **If on skin:** Wash thoroughly with soap and water. Get medical attention if irritation occurs.

If in eyes: Hold eyelids open and flush with plenty of water.

To Physician: No specific antidote is available. Treat the patient symptomatically

Engineering controls statements: 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.

Important: When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "Applicators and Other Handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment breakdown.

User Safety Recommendations:

User should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing 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

This product is highly toxic to aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area. This chemical demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly when the water table is shallow, may result in groundwater contamination.

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 statement 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 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:

- Coveralls
- Waterproof gloves
- Shoes plus socks

IMPORTANT: Read these entire DIRECTIONS FOR USE GENERAL INFORMATION, AND CONDITIONS OF SALE before using **MARATHON II Greenhouse and Nursery Insecticide**.

CONDITIONS OF SALE: THE DIRECTIONS ON THIS LABEL WERE DETERMINED THROUGH RESEARCH TO BE APPROPRIATE FOR THE CORRECT USE OF THIS PRODUCT. THIS PRODUCT HAS BEEN TESTED UNDER DIFFERENT ENVIRONMENTAL CONDITIONS BOTH INDOORS AND OUTDOORS UNDER CONDITIONS SIMILAR TO THOSE THAT ARE ORDINARY AND CUSTOMARY WHERE THE PRODUCT IS TO BE USED. INSUFFICIENT CONTROL OF PESTS OR PLANT INJURY MAY RESULT FROM THE OCCURRENCE OF EXTRAORDINARY OR UNUSUAL CONDITIONS, OR FROM FAILURE TO FOLLOW LABEL DIRECTIONS. IN ADDITION, FAILURE TO FOLLOW LABEL DIRECTIONS MAY CAUSE INJURY TO ANIMALS, MAN, AND DAMAGE TO THE ENVIRONMENT. OLYMPIC HORTICULTURAL PRODUCTS OFFERS, AND THE BUYER ACCEPTS AND USES, THIS PRODUCT SUBJECT TO THE CONDITIONS THAT EXTRAORDINARY OR UNUSUAL ENVIRONMENTAL CONTITIONS, OR FAILURE TO FOLLOW LABEL DIRECTIONS ARE BEYOND THE CONTROL OF OLYMPIC HORTICULTURAL PRODUCTS AND ARE, THEREFORE, THE RESPONSIBILITY OF THE BUYER.

Do not formulate this product into other end-use products.

APPLICATION TO GRASSY AREAS IN NURSERIES

MARATHON II Greenhouse and Nursery Insecticide can be used for the control of soil inhabiting pests of grassy areas of nurseries, such as Northern & Southern Masked chafers, *Cyclocephala borealis*, *C. immaculata*, and/or *C. lurida*; Asiatic garden beetle, *Maladera castanea*; European chafer, *Rhizotroqus majalis*; Green June beetle, *Cotinis nitida*; May or June beetle, *Phyllophaga* spp.; Japanese beetle, *Popillia japonica*; Oriental beetle, *Anomala orientalis*; Billbugs, *Spherophorus* spp.; Annual bluegrass weevil, *Hyperodes* spp.; Black turfgrass ataenius, *Ataenius spretulus* and *Aphodius* spp. **MARATHON II Greenhouse and Nursery Insecticide** can be used as directed on nursery grass in sites such as under or around field or container grown plants, on roadways or other grassy areas in or around nurseries. **MARATHON II Greenhouse and Nursery Insecticide** can not be used on commercial sod farms.

The active ingredient in **MARATHON II Greenhouse and Nursery Insecticide** has sufficient residual activity so that applications can be made preceding the egg laying activity of the target pests. High levels of control can be achieved when applications are made preceding or during the egg laying period. The need for an application can be based on historical monitoring of the site, previous records or experiences, current season adult trapping or other methods. Optimum control will be achieved when applications are made prior to egg hatch of the target pests, followed by sufficient irrigation or rainfall to move the active ingredient through the thatch.

Applications should not be made when grassy areas are waterlogged or the soil is saturated with water. Adequate distribution of the active ingredient cannot be achieved when these conditions exist. The treated grassy area must be in such a condition that the rainfall or irrigation will penetrate vertically in the soil profile. Application cannot exceed a total of 1.6 pints (0.4 lb of active ingredient) per acre per year.

Application Equipment For Use On Grassy Areas In Nurseries:

Apply **MARATHON II Greenhouse and Nursery Insecticide** in sufficient water to provide adequate distribution in the treated area. The use of accurately calibrated equipment normally used for the application of soil insecticides is required. Use equipment which will produce a uniform, course droplet spray, using a low pressure setting to eliminate off target drift. Check calibration periodically to ensure that equipment is working properly

APPLICATION TO ORNAMENTALS AND VEGETABLE PLANTS

MARATHON II Greenhouse and Nursery Insecticide is for insect control on ornamental and vegetable plants in nurseries and greenhouses and interior plantscapes. Application can be made by foliar application and broadcast sprays.

For outdoor ornamentals, broadcast applications cannot exceed a total of 1.6 pints (0.4 lb of active ingredient) per acre per year.

RESISTANCE: Some insects are known to develop resistance to insecticides after repeated use. As with any insecticide, the use of this product should conform to resistance management strategies established for the use area. Consult your Cooperative Extension Service for resistance management strategies and recommended pest management practices for your area.

Application Equipment For Ornamentals And Vegetable Plants:

MARATHON II Greenhouse and Nursery Insecticide mixes readily with water and may be used in many types of application equipment. Mix product with the required amount of water and apply as desired dependent upon the selected use pattern.

When making foliar applications on hard to wet foliage such as holly, pine, or ivy, the addition of a spreader/sticker is recommended. If concentrate or mist type spray equipment is used, an equivalent amount of product should be used on the area sprayed, as would be used in a dilute application.

MARATHON II Greenhouse and Nursery Insecticide has been found to be compatible with commonly used fungicides, miticides, liquid fertilizers, and compatibility using the correct proportion of products in a small jar test if local experience is unavailable.

RECOMMENDED APPLICATIONS

CROP	PEST	DOSAGE	REMARKS
Grassy areas of Field and Forest Nurseries	**Larvae of:** Annual bluegrass weevil Asiatic garden beetle Billbugs Black turfgrass ataenius Cutworms (suppression) European chafer Green June beetle Japanese beetle Northern masked chafer Oriental beetle *Phyllophaga* spp. Southern masked chafer	19.2 to 25.6 fl. oz. / Acre or 0.45 to 0.6 fl. oz. (13 to 17 mL) per 1000 sq ft.	For optimum control of grubs, billbugs and annual bluegrass weevil, make application prior to egg hatch of the target pest. Be sure to read "APPLICATION EQUIPMENT" Section of this label.

Consult your local turf, state Agricultural Experiment Station, or State Extension Service Specialist for more specific information regarding timing of application. NOTE: For optimum control, irrigation or rainfall should occur within 24 hours after application to move the active ingredient through the thatch. Do not apply more than 1.6 pt (0.4 lb of active ingredient) per acre per year. Avoid mowing grass area until after sufficient irrigation or rainfall has occurred so that uniformity of application will not be affected.

RECOMMENDED APPLICATIONS FOR USE

For foliar insect control in and around field-grown nursery and containers stock, indoor and outdoor ornamentals (including both greenhouse and interior plantscapes), vegetable plants and ornamentals grown in flats, benches or beds.

CROP	PEST	DOSAGE	REMARKS
Trees (including non - bearing fruit and nut) **Shrubs** **Evergreens** **Flowers** **Foliage plants** **Ground covers** **Interior plantscapes** **Vegetable plants***	Adelgids Aphids Japanese beetles (adults) Lacebugs Leaf beetles (including elm and viburnum leaf beetles) Leafhoppers (including glassy-winged sharpshooter) Leafminers Mealybugs Sawfly larvae Thrips (suppression)** Whiteflies	1.7 fl. oz. (50 mL) per 100 gal of water	**Foliar Applications:** Start treatments prior to establishment of high pest populations and reapply on an as needed basis. For resistance management purposes, a **MARATHON II Greenhouse and Nursery Insecticide** foliar application following a soil application in the same crop is not recommended.
	White grub larvae (such as Japanese beetle larvae, Chafers, *Phyllophaga* spp., Asiatic garden beetle, Oriental beetle)	0.45 to 0.6 fl. oz. (13 to 17 mL) per 1000 sq. ft.	**Broadcast Applications:** Mix required amount of product in sufficient water to uniformly and accurately cover the area being treated. Do not use less than 2 gallons of water per 1000 sq. ft. For optimum control, irrigate thoroughly to incorporate **MARATHON II Greenhouse and Nursery Insecticide** into the upper soil profile.

*Only for use on vegetable plants intended for resale including: Broccoli, Chinese Broccoli, Broccoli Raab, Brussels sprouts, Cabbage, Chinese Cabbage, Cauliflower, Collards, Eggplant, Ground Cherry, Kale, Kohlrabi, Lettuce, Mustard Greens, Pepinos, Peppers, Potatoes, Rape Greens, Sugarbeets, Tomatillo, and Tomato.

**Thrips suppression on foliage only. Thrips in buds and flowers will not be suppressed.

RECOMMENDED APPLICATIONS FOR USE For use only on nursery ornamentals.			
CROP	**PEST**	**DOSAGE**	**REMARKS**
Field Nurseries	White grub larvae (such as Japanese Beetle, Masked Chafers, European Chafer, Oriental Beetle, Asiatic Garden Beetle)	Apply as a uniform band on either side of the row using a band width six (6) inches wider than the actual root ball diameter to be dug. Do not allow bands in adjacent rows to overlap. Use 1.7 fl. oz. (50 mL) per 1000 ft of row or 3,000 sq. ft. For grub control in areas of turf, apply as a broadcast application using 1.35 to 1.7 fl. oz. (40 to 50 mL) per 3000 sq. ft.	Vegetation in the area to be treated should be mowed to a height of 3 inches or less prior to application. Mowing to the lowest possible height will insure greater consistency of control. Apply May through July. For optimum control, treatment should be followed by rainfall or irrigation. Do not use less than 2 gallons of spray volume per 1000 square feet.

RESTRICTIONS

Do not graze treated areas or use clippings of treated areas for feed or forage. Avoid runoff or puddling of irrigation water following application. Avoid application of **MARATHON II Greenhouse and Nursery Insecticide** to areas which are water logged or saturated, which will not allow penetration into the root zone of the plant. Do not apply more than 1.6 pt (0.4 lb of active ingredient) per acre per year.

Food Crops: Treated areas may be replanted with any crop specified on an imidacloprid label, or with any crop for which a tolerance exists for the active ingredient

For crops not listed on an imidacloprid label, or for crops for which no tolerances for the active ingredient have been established, a 12 month plant-back interval should be observed.

Do not apply this product through any type of irrigation system.

STORAGE AND DISPOSAL

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

Pesticide Storage: 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 the container is leaking, invert to prevent leakage. If container is leaking or material spilled for any reason or cause, carefully dam up spilled material to prevent runoff. Refer to Precautionary Statement 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. You may contact the Bayer Emergency Response Team for decontamination procedures or any other assistance that may be necessary. The Bayer Kansas City Emergency Response Telephone number is 800-414-0244, or contact Chemtrec at 800-424-9300.

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

Container Disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of the smoke.

OLYMPIC
HORTICULTURAL PRODUCTS™

Manufactured for:
Olympic Horticultural Products Company
P.O. Box 230
Mainland, PA 19451
(800) 659-6745

985250SL OHP0401RT

MATERIAL SAFETY DATA SHEET

OLYMPIC HORTICULTURAL PRODUCTS

OLYMPIC HORTICULTURAL PRODUCTS, CO.
P.O. BOX 230, MAINLAND, PA 19451
800-659-6745

Approval Date: 09/23/94
Supercedes: 07/14/94

TRANSPORTATION EMERGENCY
CALL CHEMTREC: . . . . . (800) 424-9300
District of Columbia: . . . . . (202) 483-7616

NON-TRANSPORTATION
OLYMPIC/BAYER EMERGENCY PHONE: . .(800) 414-0244
OLYMPIC INFORMATION PHONE: . . . . . .(800) 659-6745

MARATHON® II GREENHOUSE and NURSERY INSECTICIDE

EPA Registration Number 3125-549-598 7

I. PRODUCT IDENTIFICATION:

PRODUCT NAME . . . . . .: MARATHON II Greenhouse and Nursery Insecticide

EPA REGISTRATION NO. . .: 3125-549-59807

CHEMICAL FAMILY . . . . . .: Chloronicotinyl

CHEMICAL NAME . . . . . .: 1-{(6-chloro-3-pyridinyl)methyl} -*N*-nitro-2-imidazolidinimine

SYNONYMS . . . . . .: Imidacloprid; BAY NTN 33893

FORMULA . . . . . .: C9 H10 Cl N5 O2

PRODUCT USE . . . . . .: Commercial Insecticide

II. HAZARDOUS INGREDIENTS:

INGREDIENT NAME
/CAS NUMBER EXPOSURE LIMITS CONCENTRATION (%)

Imidacloprid
138261-41-3 OSHA: Not Established . . . . . .21.4 %
ACGIH: Not Established

Ingredient 1979
Specific chemical identity is withheld as a trade secret.
OSHA: Not Established . . . . . .1-3 %
ACGIH: Not Established

Ingredient 2035
Specific chemical identity is withheld as a trade secret.
OSHA: Not Established . . . . . .1-3 %
ACGIH: Not Established

III. PHYSICAL PROPERTIES:

PHYSICAL FORM . . . . . .: Viscous Liquid; Suspension

COLOR . . . . . .: Off-white to tan

ODOR . . . . . .: Mild, non-offensive

ODOR THRESHOLD . . . . . .: Not established

MOLECULAR WEIGHT . . . .: 255.7 (for imidacloprid)

pH . . . . . .: 7.5

BOILING POINT . . . . . .: Not established

MELTING/FREEZING POINT: Freezing: 20 F

VISCOSITY . . . . . .: 350-500 cps @ 25 C

SOLUBILITY IN WATER . . .: 75% of mixture

SPECIFIC GRAVITY . . . . . .: 1.12

BULK DENSITY . . . . . .: Not applicable

% VOLATILE BY VOLUME .: Not established

VAPOR PRESSURE . . . . . .: 1.5 x 10 -9 mm @ 20 C (for imidacloprid)

VAPOR DENSITY . . . . . .: Not established (Air = 1)

IV. FIRE AND EXPLOSION DATA:

FLASH POINT . . . . . .: Greater than 200 F (93 C)

FLAMMABLE LIMITS:

UPPER EXPLOSIVE LIMIT (UEL)(%) : Not Applicable

LOWER EXPLOSIVE LIMIT (LEL)(%) : Not Applicable

EXTINGUISHING MEDIA . . . . . .: Water; Carbon Dioxide; Dry Chemical; Foam

SPECIAL FIRE FIGHTING PROCEDURES . . . . . .: Keep out of smoke, cool exposed containers with water spray. Fight fire from upwind position. Use self-contained breathing equipment. Contain run-off by diking to prevent entry into sewers or waterways. Equipment or materials involved in pesticide fires may become contaminated.

V. HUMAN HEALTH DATA:

ROUTE(S) OF ENTRY . . . . . .: Inhalation; Skin Contact; Skin Absorption

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE EFFECTS OF EXPOSURE . .: No specific symptoms of acute overexposure are known to occur in humans. Animal studies have shown that this material is mildly toxic by the oral and dermal routes. It is minimally irritating to the conjunctiva of the eye but the irritation is reversible within 72 hours. It is not a dermal irritant or a dermal sensitizer.

CHRONIC EFFECTS OF EXPOSURE : No specific symptoms of chronic overexposure are known to occur in humans.

CARCINOGENICITY . . . . . .: This product is not listed by NTP, IARC or regulated as a carcinogen by OSHA.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE . . . . .: No specific medical conditions are known which may be aggravated by exposure to this product.

VI. EMERGENCY AND FIRST AID PROCEDURES:

FIRST AID FOR EYES . . . . . .: Hold eyelids open and flush with copious amounts of water for 15 minutes. Call a physician if irritation persists or develops after flushing.

FIRST AID FOR SKIN . . . . . .: Remove contaminated clothing. Wash skin with soap and water. Get medical atten-

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tion if irritation persists. If signs of intoxication (poisoning) occur, get medical attention immediately.

FIRST AID FOR INHALATION . . . . . .: First, remove victim to fresh air or uncontaminated area. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention as soon as possible.

FIRST AID FOR INGESTION . . . . . .: If ingestion is suspected, call a physician or poison control center. Drink one or two glasses of water and induce vomiting by touching back of throat with finger, or, if available, by administering syrup of ipecac. If syrup of ipecac is available, administer 1 tablespoonful (15 mL) of syrup of ipecac followed by 1 to 2 glasses of water. If vomiting does not occur within 20 minutes, repeat the dose once. Do not induce vomiting or give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN . . . . . .: Treat symptomatically. In case of poisoning, it is also requested that Bayer Corp., Agriculture Division, Kansas City, Missouri, be notified. Telephone: 816/242-2582

ANTIDOTES . . . . . .: None

VII. EMPLOYEE PROTECTION RECOMMENDATIONS:

EYE PROTECTION REQUIREMENTS .: Splash-proof goggles should be used to prevent liquid splashes from getting into the eyes.

SKIN PROTECTION REQUIREMENTS : Wear long sleeves and trousers to prevent skin contact.

HAND PROTECTION REQUIREMENTS: The use of chemical-resistant gloves to prevent skin contact is recommended as good practice.

RESPIRATOR REQUIREMENTS . . . . .: Under normal handling conditions, no respiratory protection is needed; however, when potential exposure to this product is excessive, wear a NIOSH-approved respirator for dusts and mists or for pesticides.

VENTILATION REQUIREMENTS. . . . .: Control exposure levels through the use of general and local exhaust ventilation where needed.

ADDITIONAL PROTECTIVE MEASURES : Clean water should be available for washing in case of eye or skin contamination. Educate and train employees in safe use of the product. Follow all label instructions. Launder clothing after use. Wash thoroughly after handling.

VIII. REACTIVITY DATA:

STABILITY . . . . . .: This is a stable material.

HAZARDOUS POLYMERIZATION . . . .: Will not occur.

INCOMPATIBILITIES . . . . . .: None known

INSTABILITY CONDITIONS . . . . . .: Strong exothermal reaction above 200 C (imidacloprid)

DECOMPOSITION PRODUCTS . . . . . .: Proposed: HCl,HCN, CO, NOx (for imidacloprid)

IX. SPILL AND LEAK PROCEDURES:

SPILL OR LEAK PROCEDURES . . . . .: Isolate area and keep unauthorized people away. Do not walk through spilled material. Avoid breathing vapors and skin contact. Remove sources of ignition if combustible or flammable vapors may be present and ventilate area. Wear proper protective equipment. Dike contaminated area with absorbent granules, soil, sand, etc. If large spill, material should be recovered. Small spills can be absorbed with absorbent granules, spill control pads, or any absorbent material. Carefully sweep up absorbed spilled material. Place in covered container for reuse or disposal. Scrub contaminated area with soap and water. Use dry absorbent material such as clay granules to absorb and collect wash solution for proper disposal. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers, or other waterways or contact vegetation.

WASTE DISPOSAL METHOD . . . . . .: Follow container label instructions for disposal of wastes generated during use in compliance with the product label. In other situations, bury in an EPA approved landfill or burn in an incinerator approved for pesticide destruction. Do not reuse container.

X. SPECIAL PRECAUTIONS & STORAGE DATA:

STORAGE TEMPERATURE (MIN/MAX) . . . . . .: None/30 day average not to exceed 100 F.

SHELF LIFE . . . . . .: Not Noted

SPECIAL SENSITIVITY . . . . . .: Not Noted

HANDLING/STORAGE PRECAUTIONS : .Store in a cool dry area designated specifically for pesticides. Do not store near any material intended for use or consumption by humans or animals.

XI. SHIPPING INFORMATION:

TECHNICAL SHIPPING NAME . . . . . .: Imidacloprid

FREIGHT CLASS BULK . . . . . .: Insecticides, NOI-NMFC 102120

FREIGHT CLASS PACKAGE . . . . . .: Insecticides, NOI-NMFC 102120

PRODUCT LABEL . . . . . .: Not Noted

DOT (DOMESTIC SURFACE)
PROPER SHIPPING NAME . . . . . .: Not hazardous or regulated
HAZARD CLASS OR DIVISION . . . . .: Non-Regulated

IMO / IMDG CODE (OCEAN)
PROPER SHIPPING NAME . . . . . .: Not hazardous or regulated
HAZARD CLASS DIVISION NUMBER : Non-Regulated

ICAO / IATA (AIR)
PROPER SHIPPING NAME . . . . . .: Not hazardous or regulated
HAZARD CLASS DIVISION NUMBER : Non-Regulated

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XII. ANIMAL TOXICITY DATA:

Only acute studies have been performed on this product as formulated. The non-acute information pertains to the technical-grade active ingredient, Imidacloprid.

ACUTE TOXICITY

ORAL LD50:
Male Rat . . . . . .: >4870 mg/kg;
Female Rat . . . . . .: 4143 mg/kg

DERMAL LD50:
Male & Female Rabbit . . . . . .: >2000 mg/kg

INHALATION LC50:
4 Hr. Exposure to Liquid Aerosol . . . . .: Male and Female Rat>5.33 mg/l (analytical) -- 1Hr. Exposure to Liquid Aerosol (extrapolated from 4 Hr. LC50):
Male & Female Rabbit . . . . . .: >20 mg/l (analytical)

EYE EFFECTS:
Rabbit . . . . . .: Only minimal irritation to the conjunctiva was observed with all irritation resolving within 72 hours.

SKIN EFFECTS:
Rabbit . . . . . .: Not a dermal irritant.

SENSITIZATION:
Guinea Pig . . . . . .: Not a dermal sensitizer.

SUBCHRONIC TOXICITY . . . . . .: In a 3 week dermal toxicity study, rabbits were treated with the active ingredient, imidacloprid, at the limit dose level of 1000 mg/kg for 6 hours/day, 5 days/week. There were no local or systemic effects observed at any of the levels tested. The no-observed-effect-level (NOEL) was 1000 mg/kg. In a 4 week inhalation study, rats were exposed to dust concentrations of imidacloprid at 5.5, 30.5 and 191.2 mg/cubic meter for 6 hours/day, 5 days/week. Effects observed at the high concentration included decreased body weight gains, decreased heart and thymus weights, increased liver weights, and induction of the hepatic mixed-function oxidases. Histopathological examinations did not reveal any organ damage or local injury to the respiratory tract. The NOEL was 5.5 mg/cubic meter based on induction of the hepatic mixed-function oxidases.

CHRONIC TOXICITY . . . . . .: Dogs were administered imidacloprid for 1 year at dietary concentrations of 200, 500 or 1250 ppm. Due to the lack of significant effects, the high dose was increased to 2500 ppm at 17 weeks for the remainder of the study. Effects at the high dose included decreased food consumption, increased liver weights and elevated serum chemistries. The NOEL was 500 ppm. In chronic studies using rats, imidacloprid was administered for 2 years to rats at dietary concentrations of 100, 300, 900 or 1800 ppm. Histopathology examinations revealed an increased incidence of mineralization in the colloid of the thyroid follicles at concentrations of 300 ppm and greater. At 1800 ppm, there were changes in the serum chemistries and a slight increase in the incidence of parafollicular hyperplasia seen in the thyroids. Body weight gains were reduced at 900 and 1800 ppm. The overall NOEL was 100 ppm.

CARCINOGENICITY . . . . . .: Imidacloprid was investigated for carcinogenicity in chronic feeding studies using mice and rats at maximum levels of 2000 and 1800 ppm, respectively. There was no evidence of a carcinogenic potential observed in either species.

MUTAGENICITY . . . . . .: The imidacloprid mutagenicity studies, taken collectively, demonstrate that the active ingredient is not genotoxic or mutagenic.

DEVELOPMENTAL TOXICITY . . . . . .: In a teratology study using rats, imidacloprid was administered by oral gavage during gestation at doses of 10, 30 or 100 mg/kg. At the maternally toxic dose of 100 mg/kg, skeletal examinations of the fetuses revealed a slight increase in the incidence of wavy ribs. The NOELs for maternal and developmental toxicity were 10 and 30 mg/kg, respectively. Teratogenic effects were not observed at any of the doses tested. Rabbits were administered imidacloprid during gestation at oral doses of 8, 24 or 72 mg/kg. At the maternally toxic dose of 72 mg/kg, reduced body weights and delayed skeletal ossification were observed in the fetuses. The NOELs for maternal and developmental toxicity were 8 and 24 mg/kg, respectively. Teratogenic effects were not observed at any of the doses tested.

REPRODUCTION . . . . . .: In a reproduction study, imidacloprid was administered to rats for 2 generations at dietary concentrations of 100, 250 or 700 ppm. Offspring at 700 ppm, exhibited reduced mean body weights and body weight gains. No other reproductive effects were observed. The maternal and reproductive NOELs were 100 and 250 ppm, respectively.

NEUROTOXICITY . . . . . .: In an acute oral neurotoxicity study using rats, imidacloprid was administered as a single dose at concentrations of 42, 151 or 307 mg/kg. Clinical observations and neurotoxicity evaluations were performed over a period of 15 days followed by a neurohistopathological examination. Deaths attributed to imidacloprid were observed at the high dose within a day of treatment. The NOEL for motor and locomotor activity was 42 mg/kg for males. Females at the low dose exhibited minimal decrease in activity in the figure-eight maze. In a subsequent study, the NOEL for motor and locomotor activity in females was 20 mg/kg. The NOEL for neurotoxicity was 307 mg/kg based on the absence of treatment-related microscopic lesions in skeletal muscle or neural tissue. In a 13 week neurotoxicity study, imidacloprid was administered to rats at dietary concentrations of 140, 963 or 3027 ppm. At the mid-and high dose, effects observed included reductions in body weight and feed consumption, and clinical chemistry findings. Neurobehavorial changes were observed only in males at the high dose. There were no correlative micropathologic findings in muscle or neural tissues in any animals at any treatment level. The NOEL for neurotoxicity was 3027 ppm. The overall NOEL was 140 ppm.

XIII.FEDERAL REGULATORY INFORMATION:

OSHA STATUS . . . . . .: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS . . . . . .: This product is exempt from-TSCA Regulation under FIFRA Section 3 (2)(B)(ii) when used as a pesticide.

CERCLA REPORTABLE QUANTITY . .: No components listed

SARA TITLE III:
SECTION 302 EXTREMELY
HAZARDOUS SUBSTANCES:
. . . . . .: None

SECTION 311/312
HAZARD CATEGORIES . . . . . .: Immediate Health Hazard

SECTION 313
TOXIC CHEMICALS . . . . . .: None

RCRA STATUS . . . . . .: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

XIV. OTHER REGULATORY INFORMATION:

NFPA 704M RATINGS

Health	Flammability	Reactivity	Other
1	1	1	0

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

Olympic's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. NFPA ratings are provided by Olympic Horticultural Products as a customer service.

XV. APPROVALS:

REASON FOR ISSUE . . . . .: Add neurotoxicity data (Section XII)

APPROVAL DATE . . . . . .: 09/23/94

SUPERSEDES DATE . . . . . .: 07/14/94

MSDS NUMBER . . . . . .: 15960

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Olympic Horticultural Products Co. The data on this sheet relates only to the specific material designated herein. Olympic Horticultural Products Co. assumes no legal responsibility for use or reliance upon these data.

OLYMPIC HORTICULTURAL PRODUCTS™

PYLON® miticide

OLYMPIC HORTICULTURAL PRODUCTS™

SPECIMEN LABEL

FOR USE ON ORNAMENTAL CROPS GROWN IN COMMERCIAL GREENHOUSES

ACTIVE INGREDIENT:	
4-bromo-2-(4-chlorophenyl)-1-(ethoxymethyl)-5-(trifluoromethyl)-1-*H*-pyrrole-3-carbonitrile	21.4%
INERT INGREDIENTS:	78.6%
TOTAL:	100.0%

(1 gallon contains 2.0 pounds of active ingredient)

EPA Reg. No. 241-374-59807 **EPA Est. No. 241-MO-001**

Net Contents: 1 pint

In case of emergency endangering life or property involving this product, call day or night 800-832-HELP.

KEEP OUT OF REACH OF CHILDREN

CAUTION!/¡PRECAUCION!

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

If you do not understand the 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 the poison control center or doctor.

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 INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, the give artificial respiration, perferably by mouth-to-mouth, if possible. Call a person control center or doctor for further treatment advice.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS (and DOMESTIC ANIMALS)

CAUTION

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

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow instructions for Category C on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride (PVC) or Viton (14 mils).
- 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.

When handlers use closed systems or enclosed cabs in a manner that meets the requirements of 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.

IMPORTANT: When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for applicators and other handlers and have such PPE immediately available for use in an emergency, such as a spill or equipment breakdown.

User Safety Recommendations:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing 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

This pesticide is toxic to fish and wildlife.

DO NOT apply directly to water or to areas where surface water is present. Avoid spraying ponds or aquaria containing fish. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas.

This product is toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

DO NOT contaminate water when disposing of equipment washwater.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or regional office of the EPA.

DIRECTIONS FOR USE

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

Do not apply this product through any type of irrigation system. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. 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, 40CFR 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 con-tains specific instructions and exceptions pertaining to the statements on this label about per-sonal protective equipment (PPE), and restricted-entry interval.

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

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

- Coveralls.
- Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride (PVC) or Viton (14 mils).
- Shoes plus socks.

PYLON miticide MODE OF ACTION

PYLON is a member of the class of miticides known as Pyrroles. **PYLON** has good contact and excellent stomach activity. Its mode of action is different from the miticide classes available today. **PYLON** uncouples oxidative phosphorylation, preventing conversion of ADP to ATP, and the mite or insect dies from the inability to generate its own energy.

MIXING INSTRUCTIONS

Shake container prior to use. Use a calibrated measuring device to measure the required amount of **PYLON**. Dilute **PYLON** in sufficient water to give thorough spray coverage of ornamental crop. Add product to clean water in partially filled spray tank while agitating. Fill the tank with remainder of the water and continue agitation. If tank mixes are used, **PYLON** must be fully dispersed in water first, followed by the addition of the tank- mixed materials.

APPLICATION INSTRUCTIONS

- **PYLON** may be used on non-edible ornamental plants. DO NOT APPLY to vegetable transplants grown in the greenhouse.
- Apply specified dosage using sufficient water to obtain uniform and complete coverage of foliage.
- **PYLON** is not ovicidal. **PYLON** should be used in combination with a registered ovicidal miticide when moderate to high populations of eggs are present at time of application.
- When mite populations are high in several areas of the greenhouse or throughout several crops within one greenhouse structure, apply **PYLON** at 5.2 fl oz/ 100 gals (0.08 lb ai/ 100 gals) and make a sequential application at 5 –7days after the first application. **PYLON** is not systemic and does not translocate throughout the plant. However, **PYLON** moves rapidly from the top to the underside of a leaf - to control spider mites, larvae and nymphs emerging from eggs. **PYLON** will be diluted in rapidly expanding, new foliage as compared to the concentration in the leaf surface at the time of application. For this reason, it is important to make two consecutive applications of **PYLON** within 5 –7days when under high mite pressure.
- Low to moderate populations of spider mites can be controlled for 14 – 21 days with one **PYLON** application at 2.6 – 5.2 fl. oz.
- Make only one sequential application at 5 to 7- day interval when necessary. See section on RESISTANCE MANAGEMENT for additional instructions.

SPECIAL PRECAUTIONS

To minimize the risk of injury to ornamentals, make applications prior to blooming or avoid blooms where possible. Apply in the coolest times of the day.

PYLON has been evaluated for phytotoxicity on a wide range of ornamental plants; however, it has not been possible to evaluate all commercially important species, varieties and cultivars within the species listed below. Local conditions can also influence crop safety and may not match those under which **PYLON** was tested. *

All tank mixes should be evaluated for phytotoxicity prior to application due to additive effects of surfactants and wetting agents contained in both formulations. *

No unacceptable injury has occurred to the following greenhouse ornamental plants when treated with **PYLON** according to label instructions.

African daisy	Chrysanthemum	Grape Ivy	Petunia
African violet	Cock's comb	Impatiens	Ranunculus
Ageratum	Croton	Lily, oriental	Snapdragon
Alex Ivy	Fuschia	Lisianthus	Verbena
Aster	Gardenia	Marigold	Vinca
Azalea	Gazania	Miniature rose	
Begonia	Geranium	Needlepoint Ivy	
California Ivy	Gerbera daisy	Pansy	

* Apply **PYLON** to a small area (8-12 plants) and evaluate for 3 – 5 days before attempting a large-scale spray to make certain that no phytotoxicity occurs.

PHYTOTOXICITY IS LIKELY TO OCCUR to some varieties of: carnations, dianthus, kalanchoe, poinsettia, roses, salvia and zinnia and applications to these species will be made at grower risk.

NOT RECOMMENDED: Additions of crop oils, surfactants, and fertilizers or other tank additives have been shown to increase the likelihood of foliage injury and are not recommended with this product.

APPLICATION RATES[1]

Greenhouse Ornamentals (non-food plants)

PEST	RATE (fl. oz./ 100 gal)	RATE (lbs. ai/ 100 gal	REMARKS
Spider mites[2], including: Two-spotted spider mite *(Tetranychus urticae and other Tetranychus sp.)* Broad mite *(Polyphagotarsonemus latus)* Citrus budmite *(Eriophyes sheldoni)* Cyclamen mite *(Phytonemus pallidus)* Rust mite *(Phyllocoptruta sp., Epitrimerus sp. and Aculus sp.)*	2.6 – 5.2	0.04 - 0.08	Use sufficient spray volume to ensure thorough coverage. Apply when pests first appear, before crop damage occurs.

[1]No more than three (3) applications (not more the 41 fl oz. of product or 0.64 lbs. of active ingredient) should be applied during a crop growing cycle (start to finish for one ornamental crop). Refer to the section on RESISTANCE MANAGEMENT for specific application strategies.

[2]May require two (2) applications on a 5 - 7 day spray schedule at the 5.2 fl oz./100 gals (0.08 lbs ai/100 gals) under high mite pressure. Refer to the section on RESISTANCE MANAGEMENT below.

RESISTANCE MANAGEMENT

Treatment may not be effective if tolerant strains develop. To reduce the potential for developing pest resistance to this product, alternate with insecticides and miticides from different classes of chemicals with different modes of action.

Use one of the following resistance management strategies:

1. DO NOT APPLY **PYLON** more than two (2) times consecutively or a total of three (3) times during a growing cycle (Start to finish for one ornamental crop.)

— and —

2. DO NOT APPLY **PYLON** to consecutive crops in a greenhouse structure.

— or —

3. **PYLON** SHOULD BE applied in combination with other effective miticides/insecticides with a different mode of action when used in a subsequent crop in the same greenhouse structure.

DISCLAIMER

The label instructions for the use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with 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 use or application of the product contrary to label instructions, all of which are beyond the control of Olympic Horticultural Products. All such risks shall be assumed by the user.

Olympic Horticultural Products warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above.

Any damages arising from a breach of this warranty shall be limited to direct damages and shall not include consequential commercial damages such as loss of profits or values or any other special or indirect damages.

Olympic Horticultural Products makes no other express or implied warranty, including any other express or implied warranty of FITNESS or MERCHANTABILITY.

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal.

PROHIBITIONS: DO NOT store below 32°F.

DO NOT store in direct sunlight or heat.

PESTICIDE STORAGE: Keep out of reach of children and animals. Store in original container in a cool, dry place. Replace lid and keep tightly closed after opening.

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

CONTAINER DISPOSAL: Triple rinse (or equivalent). Offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, by incineration or, if allowed by State and local authorities by burning. If burned, stay out of smoke.

OLYMPIC HORTICULTURAL PRODUCTS™

Manufactured for:
Olympic Horticultural Products Company
P. O. Box 230
Mainland, PA 19451
(800) 659-6745

OHP 986200 3/01SL

MATERIAL SAFETY DATA SHEET

OLYMPIC HORTICULTURAL PRODUCTS, CO.
P.O. BOX 230, MAINLAND, PA 19451
800-659-6745

Revised Date: 2/13/2001
Date prepared: 8/18/2000

TRANSPORTATION EMERGENCY
CALL CHEMTREC . . . . . .(800)-424-9300
DISTRICT OF COLUMBIA . . . . . .(202)-483-7616

NON-TRANSPORTATION
OLYMPIC EMERGENCY PHONE . . . . . .(800)-356-4647
OLYMPIC INFORMATION PHONE . . . . .(800)-659-6745

PYLON® miticide

EPA Registration Number: 241-374-59807

I. CHEMICAL PRODUCT IDENTIFICATION:

TRADE NAME . . . . . .: PYLON® miticide
CHEMICAL FAMILY . . . . . .: Pyrrole
CHEMICAL NAME . . . . . .: 4-bromo-2-(4-chlorophenyl)-1-(ethoxymethyl)-5-(trifluoromethyl)-*H*-pyrrole-3-carbonitrile
SYNONYMS . . . . . .: Pyrrole; CL 303,630; chlorfenapyr
FORMULA . . . . . .: C(15)H(11) Br Cl F(3) N(2) O
MOL Wt. . . . . . .: 407.6

II. INGREDIENTS:

COMPONENT	CAS NO.	%	PEL/TLV - SOURCE
CL 303,630 (chlorfenapyr)	122453-73-0	21.44	None established
Propylene glycol	57-55-6	7.5	None established
Inerts	N/A	71.06	None established

SARA Title III Section 313 . . . . . .: Not listed

III. PHYSICAL DATA:

BOILING/MELTING POINT @760mm Hg . . . . . .: Similar to water
pH . . . . . .: 6.5 - 7.2 2% dispersion
VAPOR PRESSURE mmHg @ 20ºC : N/D
SPECIFIC GRAVITY OR BULK DENSITY . . . . . .: 1.1 g/mL @ 20° C
SOLUBILITY IN WATER . . . . . .: Forms a suspension
APPEARANCE . . . . . .: Off-white to tan liquid
ODOR . . . . . .: N/A
INTENSITY . . . . . .: N/A

IV. FIRE AND EXPLOSION DATA

FLASH POINT (TEST METHOD) . . .: N/D
AUTOIGNITION TEMP . . . . . .: N/D
FLAMMABILITY LIMITS IN AIR (% BY VOL) . . . . . .: LOWER: N/D UPPER: N/D
NFPA 704 HAZARD CODES
HEALTH: N/R FLAMMABLE: N/R
INSTABILITY: N/A OTHER: N/A
NFPA 30 STORAGE CLASSIFICATION . . . . . .: N/R
EXTINGUISHING MEDIUM . . . . . .: Use water fog, foam, CO(2), or dry chemical extinguishing media.
SPECIAL FIREFIGHTING PROCEDURES:
Firefighters should be equipped with self-contained breathing apparatus and turnout gear. Control run-off water - if water enters drainage system, notify authorities downstream.

UNUSUAL FIRE EXPLOSION HAZARDS:
None known.

SELECT ACRONYM KEY:
N/A: Not available N/D: Not determined N/R: Not rated N/E: Not established

V. HEALTH DATA

TOXICOLOGICAL TEST DATA:
Data for the formulated product:
Rat (male), Oral LD50 (calculated) = 560 mg/kg
Rat (female), Oral LD50 (calculated) = 567 mg/kg
Rabbit (combined), Dermal LD50 > 2000 mg/kg
Rat (male), Inhalation LC50 (4 hr) = 1.3 mg/L
Rat (female) Inhalation LC50 (4 hr) = 2.4 mg/L
Rat (male), Inhalation LC50 (1 hr - calculated)) = 5.2 mg/L
Rat (female), Inhalation LC50 (1 hr - calculated)) = 9.6 mg/L
Rabbit, Eye Irritation - Non-irritating
Rabbit, Skin Irritation - Non-irritating
Guinea pig, Dermal Sensitizer - Not a sensitizer

OSHA, NTP, or IARC Carcinogen . .: Not listed.

EFFECTS OF OVEREXPOSURE:
See Product Label and Directions For Use for additional precautionary statements.
CAUTION! Keep out of reach of children.
Avoid contact with skin and eyes. Do not breathe sprays or mists.
Existing medical conditions aggravated by this product: None known.

FIRST AID PROCEDURES:
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 by a poison control center or doctor. Do not give anything 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 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.
If in eyes: Immediately hold eyelids open and flush with a steady, gentle stream of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Note to physician: Treat symptomatically. No specific antidote.
Note: Have the product container or label with you when calling a poison control center or doctor or going for treatment.

MATERIAL SAFETY DATA SHEET

PYLON® miticide

EPA Registration Number: 241-374-59807

VI. REACTIVITY DATA

STABILITY . . . . . .: Stable. Do not store below 32° F. Avoid heat and sunlight.

CONDITIONS TO AVOID . . . . . .: Store in original container in cool,dry, well ventilated place away from ignition sources, heat or flame.

CHEMICAL INCOMPATIBILITY . . . .: Oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS . . . . . .: Including oxides of carbon and nitrogen; HCl; HF; HBr

HAZARDOUS POLYMERIZATION . .: Does not occur.

CONDITIONS TO AVOID . . . . . .: Does not polymerize.

CORROSIVE TO METAL . . . . . .: No

OXIDIZER . . . . . .: No

VII. PERSONAL PROTECTION

PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions For Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

Respiratory Protection . . . . . .: Supplied air respirators should be worn if large quantities of mist are generated or prolonged exposure possible.

Eye Protection . . . . . .: Chemical goggles when respirator does not provide eye protection.

Protective Clothing . . . . . .: Gloves and protective clothing as necessary to prevent skin contact.

Ventilation . . . . . .: Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

VIII. ENVIRONMENTAL DATA

ENVIRONMENTAL TOXICITY DATA : Based on standard laboratory tests on this formulation and the active ingredient, chlorfenapyr, this product is very toxic to fish, aquatic invertebrates, and honeybees, and toxic to algae.

SARA 311/312 REPORTING

FIRE: N PRESSURE: N REACTIVITY: N ACUTE: Y CHRONIC: N TPQ(lbs): N/R

SPILL AND LEAK PROCEDURES . .: In case of large scale spillage of this product, avoid contact, isolate area and keep out animals and unprotected persons. Call CHEMTREC (800 424-9300) or BASF Corporation (800 832-HELP). For a small spill, wear personal protective equipment as specified on the label.

FOR A LIQUID SPILL . . . . . .: Dike and contain the spill with inert material (sand, earth , etc.) and transfer the liquid and solid diking materials to separate containers for disposal.

FOR A SOLID SPILL . . . . . .: Sweep solid into a drum for re-use or disposal. Remove personal protective equipment and decontaminate it prior to re-use.

HAZARDOUS SUBSTANCE SUPERFUND . . . . . .: No

RQ(lbs) . . . . . .: None

WASTE DISPOSAL METHOD . . . . .: Pesticide wastes are acutely hazardous. Wastes resulting from this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If these wastes cannot be disposed of according to label instructions, contact the state agency responsible for pesticide regulation or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

HAZARDOUS WASTE 40CFR261 . .: No

HAZARDOUS WASTE NUMBER . . .: None

CONTAINER DISPOSAL . . . . . .: Empty containers or liners may retain some product residues. DO NOT REUSE. Rinse the container or liner as needed for disposal. Render it unusable by crushing or puncturing. Dispose of the container and any rinsate in a safe manner. Follow all applicable community, national or regional regulations regarding waste management methods.

IX. SHIPPING DATA - PACKAGE AND BULK

D.O.T. PROPER SHIPPING NAME (49CFR172.101-102):

HAZARDOUS SUBSTANCE (49CFR CERCLA LIST) . . . . . .:

RQ(lbs) . . . . . .: None

D.O.T. HAZARD CLASSIFICATION (CFR 172.101-102) . . . . . .: PRIMARY SECONDARY

D.O.T. LABELS REQUIRED (49CFR172.101-102):

D.O.T. PLACARDS REQUIRED (CFR172.504):

POISON CONSTITUENT (49CFR172.203(K):

BILL OF LADING DESCRIPTION . .: This section has been left blank intentionally.

CC NO. . . . . . .: Not applicable

UN/NA CODE . . . . . .:

X. ADDITIONAL INFORMATION

PYLON® miticide EPA Reg. No. 241-374-59807

CAUTION

KEEP OUT OF REACH OF CHILDREN

Complete Label and Directions For Use are attached to the product.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

DISCLAIMER

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY BASF HEREUNDER ARE GIVEN GRATIS AND BASF ASSUMES NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.

OHP 986200 0301 MSDS

STRIKE® 50WDG

OLYMPIC HORTICULTURAL PRODUCTS™

Greenhouse and Nursery Systemic Fungicide — SPECIMEN LABEL

FOR CONTROL OF CERTAIN DISEASES ON FLOWERS, FOLIAGE PLANTS, SHRUBS, AND SHADE TREES IN COMMERCIAL NURSERIES, GARDEN CENTERS AND GREENHOUSES

ACTIVE INGREDIENT:

Triadimefon, 1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1 *H*-1,2,4-triazol-1-yl)-2-butanone	50.0%
OTHER INGREDIENTS	50.0%
	100.0%

EPA Reg. No. 3125-529-59807

EPA Est. indicated by second and third digits of the batch number on this package.
(03)=3125-MO-1 (98)=33967-NJ-1

Net Weight: 1/2 Pound

STOP - Read The Label Before Use
KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUCION AL USUARIO: Si usted no puede leer o entender inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

(TO THE USER: If you cannot read or understand English, do not use this product until the label has been fully explained to you.)

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed, absorbed through the skin or inhaled. Avoid breathing dust. Avoid contact with eyes, skin, or clothing. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals.

Personal Protective Equipment

Applicators and other handlers must wear:
- Long-sleeved shirt and long pants
- 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.
- Remove clothing immediately if pesticide gets inside.
- Remove contaminated clothing and wash clothing before reuse.

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 by a poison control center or doctor.

If in eyes: Flush with plenty of water. Call a physician if irritation persists.

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

If inhaled: Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a Poison Control Center or doctor immediately for treatment advice.

SYMPTOMS OF POISONING: The compound does not cause any definite symptoms that would be diagnostic. Poisoning is accompanied by hyperactivity followed by sedation.

Note To Physician: No specific antidote. Treat symptomatically.

STRIKE® 50WDG

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 washwaters.

Apply this product only as specified on this label.

This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

Do not make applications when weather conditions favor drift from target area.

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 the 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
- Waterproof gloves
- Shoes plus socks

IMPORTANT: Read these entire Directions and Conditions of Sale before using **STRIKE® 50 WDG Greenhouse and Nursery Systemic Fungicide**.

CONDITIONS OF SALE: THE DIRECTIONS ON THIS LABEL WERE DETERMINED THROUGH RESEARCH TO BE APPROPRIATE FOR THE CORRECT USE OF THIS PRODUCT. THIS PRODUCT HAS BEEN TESTED UNDER DIFFERENT ENVIRONMENTAL CONDITIONS BOTH INDOORS AND OUTDOORS UNDER CONDITIONS SIMILAR TO THOSE THAT ARE ORDINARY AND CUSTOMARY WHERE THE PRODUCT IS TO BE USED. INSUFFICIENT CONTROL OF PESTS OR PLANT INJURY MAY RESULT FROM THE OCCURRENCE OF EXTRAORDINARY OR UNUSUAL CONDITIONS, OR FROM FAILURE TO FOLLOW LABEL DIRECTIONS. IN ADDITION, FAILURE TO FOLLOW LABEL DIRECTIONS MAY CAUSE INJURY TO ANIMALS, MAN, AND DAMAGE TO THE ENVIRONMENT. OLYMPIC OFFERS, AND THE BUYER ACCEPTS AND USES, THIS PRODUCT SUBJECT TO THE CONDITIONS THAT EXTRAORDINARY OR UNUSUAL ENVIRONMENTAL CONDITIONS, OR FAILURE TO FOLLOW LABEL DIRECTIONS ARE BEYOND THE CONTROL OF OLYMPIC AND ARE, THEREFORE, THE RESPONSIBILITY OF THE BUYER.

APPLICATION: STRIKE® 50 WDG Greenhouse and Nursery Systemic Fungicide is absorbed rapidly and works systemically from within the plant. Good coverage and wetting of the foliage are necessary. Rainfall or sprinkler irrigation, within 30 minutes after application does not decrease effectiveness. Control may be less effective on plants suffering from drought stress. Therefore, in order to achieve maximum control, plants should be maintained in a vigorously growing state through good cultural practices.

Apply in all cases when plants are fully established and actively growing. Applications should be applied at recommended intervals to maintain disease control.

Do not use on crops grown for food or forage.

Do not apply this product through any type of irrigation system.

ORNAMENTAL PLANT DISEASE CONTROL

Locate plant(s) (see below) to be treated. Cross reference the number/letter codes, following the plant name, to the specific diseases (see below) controlled. Refer to Application Rates section for instructions detailing use for each disease. In California, only those plants marked with an asterisk may be treated.

DISEASES

Flower Blight	Leaf Blight/Spots	Powdery Mildew	Rusts	Tip Blight
1	2	3	4	5
a) *Ovulinia* spp. [A] b) *Sclerotinia* spp. [A] c) *Collectotrichum* [A]	a) *Cephalosporium* spp. [C] b) *Cerocospora* spp. c) *Didymellina* spp. [B] d) *Didymascella thujina* [G] e) *Entomosporium* spp. [C] f) *Exobasidium* spp. [E]	*Erysiphe* spp. *Microsphaera* spp. *Oidium* spp. *Podosphaera* spp. *Phyllactinia* spp. *Sphaerotheca* spp. *Uncinula* spp.	a) *Coleosporium* spp. b) *Cronartium* spp. [B] (Fusiform) c) *Gymnosporanqium* spp. d) *Melampsora* spp. [F] e) *Melampsora farlowii* [A] f) *Melampsoridium* spp. g) *Peridesmium* spp. [B] h) *Phragmidium andersonii* i) *Puccinia* spp. j) *Uromyces* spp. k) *Uredinopsis mirabalis* spp. [A]	*Sirococcus strobilinus* [B]

PLANTS

Flowering & Foliage Plants (Greenhouse [D])

African Violet* (3)	Chrysanthemum* (3, 4)	Fern, Boston (4)	Hydrangea (3)
Azalea (1a, 2f, 3)	Cineraria (3)	*Desmella spp.*	Kalanchoe (3)
Calendula (3, 4)	Crassula (3)	Geranium* (3, 4)	Poinsettia (3)
Carnation* (3, 4)	Daisy (3, 4)	Gerbera (3)	Rose* (3)
		Grape Leaf Ivy* (3)	Snapdragon (3, 4)

Flowering & Foliage Plants (Outdoor)

Ageratum (2b, 3, 4)	Dendrobium (1c)	Marigold (2b, 4)	Sedum (3)
Aster (4)	(Hawaii Only)	Nephthytis* (2a)	Snapdragon* (3, 4)
Begonia* (3)	Dianthus (4)	Pansy (3, 4)	Sunflowers (3, 4)
Canna (4)	Four O'Clock (4)	Petunia (3, 4)	(ornamental only)
Carnation (3, 4)	Geranium* (3, 4)	Phlox (2b, 3, 4)	Sweet peas* (3)
Chrysanthemum (3, 4)	Hollyhock* (3, 4)	Poinsettia (3)	Zinnia* (2b, 3)
Dahlia (3)	Hydrangea (3)	Rose* (3)	
Delphinium (3)	Iris* (2c)	Salvia (3, 4)	

Ornamental Shrubs & Trees

Amelanchier (3)	Dogwood (3)	Lilac (3)	Privet (2b, 3)
Azalea* (1a, 2f, 3)	Euonymus* (3)	Mock-Orange (3, 4)	Pyracantha (3)
Barberry (3, 4)	Gardenia (3)	Mountain Laurel (1a, 2b, 3)	Rhododendron (1a, 2b, 3)
Buckthorn (4)	Hawthorn (3, 4)	Ninebark (3)	Spirea (3)
Camellia (suppression of 1b)	Hemlock (4e)	Paulownia (3) (Empress Tree)	Viburnum* (3, 4)
Cedar* (2d)	Holly (3)	Pear (Flowering) (3)	Vitex (2b) (Chaste Tree)
Crabapple (flowering) (3, 4)	Juniper (4)	Photinia (2e, 3, 4)	
Crape myrtle* (3)	Leucothoe (2b)	Potentilla (4) (Cinquefoil)	

Shade Trees

Ash (3)	Cottonwood (3, 4)	Maple (3)	Sycamore* (3)
Aspen (3, 4)	Elm (3)	Oak* (3)	Walnut (3)
Birch (3, 4)	Fir (4)	Pine* (4, 5)	Willow* (3, 4
Buckeye (3)	Locust (3)	Poplar (3, 4)	
Chestnut (3)		Russian Olive (2b, 4)	

APPLICATION RATES: Except as noted for specific diseases, mix 1 to 2 ounces of **STRIKE® 50 WDG Greenhouse and Nursery Systemic Fungicide** in 100 gallons of water and apply as a full coverage foliage spray to the point of drip as needed.

[A] Mix 4 to 8 ounces of **STRIKE® 50 WDG Greenhouse and Nursery Systemic Fungicide** in 100 gallons of water and apply as a full-coverage foliar spray to the point of drip. Applications should begin at the expanded bud stage (color showing). Use multiple applications at 7- to 14-day intervals as needed dependent upon bloom periods.

[B] Mix 8 ounces of **STRIKE® 50 WDG Greenhouse and Nursery Systemic Fungicide** plus sufficient spreader sticker for good coverage in 100 gallons of water. Apply in a spray application to the point of run- off on an as needed basis during the early part of the season. Excessive rates or excessive applications may result in a shortening of the flower stalk on iris.

[C] Mix 4 to 8 ounces of **STRIKE® 50 WDG Greenhouse and Nursery Systemic Fungicide** in 100 gallons of water and apply as a full coverage foliar spray to point of run-off. Apply in early spring as growth starts and re-apply on a 14- to 21-day interval until new growth is fully expanded. Protect new growth that develops in late summer or fall as temperatures begin to drop.

[D] Greenhouse Applications

Winter Use - 1 oz of **STRIKE® 50 WDG Greenhouse and Nursery Systemic Fungicide**

Summer Use - 2 oz of **STRIKE® 50 WDG Greenhouse and Nursery Systemic Fungicide Fungicide**

Mix specified amount of **STRIKE® 50 WDG Greenhouse and Nursery Systemic Fungicide** in 100 gallons of water and apply in a spray application to the point of drip. Intervals between applications should be no shorter than 30 days to avoid flower stalk length reduction. Excessive rates or applications may result in a shortening of the flower stalk.

[E] For control of Exobasidium flower and leaf gall, apply 2 oz of **STRIKE® 50 WDG Greenhouse and Nursery Systemic Fungicide** in 100 gallons of water. Begin application at bud break and apply at 10-day intervals through infestation period.

[F] For control of Melampsora pinitorqua (Pine Twisting Rust), apply a single application in spring during periods favorable for infection. Mix 8 oz in 50 gallons of water and apply to shoots in the upper whorl of susceptible pine species. Make a single application per year as a full coverage application sprayed to run-off.

[G] For control of Didymascella thujina, Cedar Leaf Blight, apply 0.5 lb per acre in sufficient water to provide full coverage in nurseries, or 0.25 lb/100 gallons applied as a full coverage spray to ornamentals. Begin applications before disease appears in spring, and repeat at 60-day intervals through early fall.

COMPATIBILITY: STRIKE is compatible with many registered insecticides and fungicides. To determine the compatibility of **STRIKE** with specific products, the following procedure should be conducted. Pour the recommended proportions of the products into a suitable container of water, mix thoroughly and allow to stand at least 5 minutes. If the combination remains mixed or can be re-mixed readily, the mixture is considered physically compatible.

SPRAY ADDITIVES: Use of various spray additives such as spreaders, extenders, trace elements or fertilizers should be evaluated prior to use. The label directions given here are based on data obtained with no additives; use of any product with **STRIKE** may affect the result. Contact local university extension personnel prior to use of spray mix additives.

RESTRICTIONS: Do not use edible portions of treated plants for food or feed purposes.

STORAGE AND DISPOSAL

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

Pesticide Storage: 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 the container is leaking or material spilled for any reason or cause, carefully sweep material into a pile. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Material that cannot be used as directed should be disposed of as directed below. In spill or leak incidents, keep unauthorized people away. You may contact the Bayer Emergency Response Team for decontamination procedures or any other assistance that may be necessary. The Bayer Kansas City Emergency Response Telephone No. is 800-414-0244, or contact Chemtrec at 800-424-9300.

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

Container Disposal: Household: Do not reuse empty container. Securely wrap original container in several layers of newspaper and put in trash collection.

Except Household: Paper and Plastic Bags: Completely empty bags into application equipment. Then dispose of empty bags in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Plastic Containers: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

OLYMPIC HORTICULTURAL PRODUCTS™

Manufactured for:
Olympic Horticultural Products Company
P. O. Box 230
Mainland, PA 19451
(800) 659-6745

OHP 988194 2/00L

MATERIAL SAFETY DATA SHEET

OLYMPIC HORTICULTURAL PRODUCTS, CO.
P.O. BOX 230, MAINLAND, PA 19451
800-659-6745

Approval Date: August 5, 1996

TRANSPORTATION EMERGENCY
CALL CHEMTREC . . . . . .(800)-424-9300
DISTRICT OF COLUMBIA . . . . . .(202)-483-7616

NON-TRANSPORTATION
OLYMPIC EMERGENCY PHONE . . . . . .(800)-356-4647
OLYMPIC INFORMATION PHONE . . . . .(800)-659-6745

STRIKE® 50 WDG

Greenhouse and Nursery Systemic Fungicide

EPA Registration Number: 3125-529-59807

I. CHEMICAL PRODUCT IDENTIFICATION:

PRODUCT NAME . . . . . .: STRIKE® 50 WDG Greenhouse and Nursery Systemic Fungicide
CHEMICAL FAMILY . . . . . .: Triazole Fungicide
CHEMICAL NAME . . . . . .: 1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2-butanone
SYNONYMS . . . . . .: Triadimefon
FORMULA . . . . . .: C14 H16 Cl N3 O2

II. COMPOSITION/INFORMATION ON INGREDIENTS:

INGREDIENT NAME /CAS NUMBER	EXPOSURE LIMITS	CONCENTRATION (%)
***** HAZARDOUS INGREDIENTS *****		
STRIKE (triadimefon) 43121-43-3		
OSHA :	Not Established	50 %
ACGIH:	Not Established	
Ingredient 2444		
Specific chemical identity is withheld as a trade secret.		
OSHA :	Not Established	1-3 %
ACGIH:	Not Established	
Ingredient 1611		
Specific chemical identity is withheld as a trade secret.		
OSHA :	Not Established	3-5 %
ACGIH:	Not Established	
Total crystalline silica (quartz) 14808-60-7		
OSHA :	.10 mg/m3 TWA (respirable)	< 1.5 %
ACGIH:	.10 mg/m3 TWA (respirable)	
Ingredient 1606		
Specific chemical identity is withheld as a trade secret.		
OSHA :	5.00 mg/m3 TWA (respirable)	30-40%
ACGIH :	2.00 mg/m3 TWA (respirable)	

III. HAZARDS IDENTIFICATION:

EMERGENCY OVERVIEW

CAUTION! Color: Brown; Form: Solid; Granular; Odor: Sharp, musty; Harmful if inhaled or ingested; May be harmful if absorbed through skin.

POTENTIAL HEALTH EFFECTS:

ROUTE(S) OF ENTRY . . . . . .: Inhalation; Skin Contact; Skin Absorption; Eye Contact

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE EFFECTS OF EXPOSURE . . .: Moderate eye irritation may occur from contact with the granular material or spray mixture. Based on the EPA Toxicity Category criteria, this product is mildly toxic orally and dermally. Animal studies have shown that it can cause minimal irritation to the conjunctiva with all remarkable irritation resolving within 1 day. It is a slight dermal irritant. Dermal sensitization studies have not been performed on this product as formulated; however, dermal sensitization studies performed on a similar formulation, STRIKE® 50 WDG Greenhouse and Nursery Systemic Fungicide, and the active ingredient, triadimefon, have been positive.

CHRONIC EFFECTS OF EXPOSURE . .: Based on the results of animal studies, no deleterious effects or symptoms would be expected from chronic exposure to STRIKE® 50 WDG Greenhouse and Nursery Systemic Fungicide (triadimefon) during normal use. However, this product may contain up to approximately 1.5% total crystalline silica. Excessive, long-term exposure to respirable crystalline silica may cause silicosis, a form of progressive pulmonary fibrosis. Severe and permanent lung damage may result.

CARCINOGENICITY . . . . . .: STRIKE® 50 WDG Greenhouse and Nursery Systemic Fungicide is not listed as a carcinogen by NTP or IARC, or regulated as a carcinogen by OSHA. However, it may contain crystalline silica (quartz), a substance which is classified by NTP as a Group 2 carcinogen and by IARC as a Group 2A carcinogen. Crystalline silica is a naturally-occurring mineral component of many sands and clays. Considerable controversy exists regarding the carcinogenic potential of crystalline silica in humans, but based on animal data, the potential must be considered relevant if crystalline silica is inhaled under excessive exposure conditions. However, the respirable portion of the silica which may be contained in this product is small, such that excessive inhalation exposure during normal conditions of use is unlikely.

NTP . . . . . .: Crystalline Silica is classified as an NTP Anticipated Human Carcinogen - "Substances or groups of substances that may reasonably be anticipated to be carcinogens."

IARC . . . . . .: IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans" Vol. 42 - for Crystalline Silica (Quartz) - determined that "There is sufficient evidence for the carcinogenicity of crystalline silica to experimental animals. There is limited evidence for the carcinogenicity of crystalline silica to humans."

OSHA.....: Not regulated

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

No specific medical conditions are known which may be

MATERIAL SAFETY DATA SHEET

STRIKE® 50 WDG

Greenhouse and Nursery Systemic Fungicide

EPA Registration Number: 3125-529-59807

aggravated by exposure to the active ingredient in this product; however, pulmonary and respiratory diseases may be aggravated by exposure to respirable crystalline silica.

EXPOSURE LIMITS . . . . . .: 1.0 mg/m3 BAYER EXPOSURE LIMIT (BEL) for STRIKE Technical. The BEL is an internal guideline established by a scientific committee within Bayer. It is based on available literature and Bayer experience with the product. The BEL is used as a guideline for Bayer operations only and is not a recommendation for any other purpose.

IV. FIRST AID MEASURES:

FIRST AID FOR EYES . . . . . .: Hold eyelids open and flush with copious amounts of water for 15 minutes. Call a physician if irritation develops or persists after flushing.

FIRST AID FOR SKIN . . . . . .: Remove contaminated clothing. Wash skin with plenty of soap and warm water. Get medical attention if irritation develops or persists. If signs of intoxication (poisoning) occur, get medical attention immediately.

FIRST AID FOR INHALATION . . . . . .: If a person is overcome by excessive exposures to dusts or aerosols of this material, remove to fresh air or uncontaminated area. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention as soon as possible.

FIRST AID FOR INGESTION . . . . . .: If ingestion is suspected, call a physician or poison control center. Drink one or two glasses of water and induce vomiting by touching back of throat with finger, or, if available, by admininstering syrup of ipecac. If syrup of ipecac is available, administer 1 tablespoonful (15 mL) of syrup of ipecac followed by 1 to 2 glasses of water. If vomiting does not occur within 20 minutes, repeat the dose once. Do not induce vomiting or give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN . . . . . .: No specific antidote is available. Treat poisoning victims symptomatically. In case of poisoning, it is also requested that Bayer Corp., Agriculture Division, Kansas City, Missouri be notified. Telephone: 1-800-414-0244

V. FIRE FIGHTING MEASURES:

FLASH POINT . . . . . .: Not Applicable

FLAMMABLE LIMITS:

UPPER EXPLOSIVE LIMIT (UEL)(%) . . . . . .: Not Established

LOWER EXPLOSIVE LIMIT (LEL)(%) . . . . . .: Not Established

EXTINGUISHING MEDIA . . . . . .: Water

SPECIAL FIRE FIGHTING PROCEDURES: . . . . . .If involved in a fire, stay upwind, wear self-contained breathing equipment and avoid water runoff.

VI. ACCIDENTAL RELEASE MEASURES:

SPILL OR LEAK PROCEDURES . . . . . .: Isolate area and keep unauthorized people away. Do not walk through spilled material. Avoid breathing dusts and skin contact. Avoid generating dust (a fine water spray mist, plastic film cover, or floor sweeping compound may be used if necessary). Use recommended protective equipment while carefully sweeping up spilled material. Place in covered container for reuse or disposal. Scrub contaminated area with soap and water. Rinse with water. Use dry absorbent material such as clay granules to absorb and collect wash solution for proper disposal. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers, or other waterways.

VII. HANDLING AND STORAGE:

STORAGE TEMPERATURE (MIN/MAX) . . . . . .: None/60 day average not to exceed 100 F

SHELF LIFE . . . . . .: At least 2 years at 75 F

SPECIAL SENSITIVITY . . . . . .: Extreme heat, moisture

HANDLING/STORAGE PRECAUTIONS .: Store in a cool dry area designated specifically for pesticides. Do not store near any material intended for use or consumption by humans or animals.

VIII. PERSONAL PROTECTION:

EYE PROTECTION REQUIREMENTS . .: Goggles should be used when needed to prevent dust or spray mixture from getting into the eyes.

SKIN PROTECTION REQUIREMENTS . .: Avoid skin contact. Use chemical-resistant gloves and wear long sleeves and trousers to prevent dermal exposure.

VENTILATION REQUIREMENTS . . . . . .: Maintain exposure levels below the applicable exposure limits through the use of general and local exhaust ventilation.

RESPIRATOR REQUIREMENTS . . . . . .: Under normal handling conditions no respiratory protection is needed. However, if needed to prevent respiratory irritation, wear a NIOSH-approved dust/mist respirator or a NIOSH-approved pesticide respirator.

ADDITIONAL PROTECTIVE MEASURES . . . . . .: Clean water should be available for washing in case of eye or skin contamination. Educate and train employees in safe use of the product. Follow all label instructions. Launder clothing after use. Wash thoroughly after handling.

IX. PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL FORM . . . . . .: Solid

APPEARANCE . . . . . .: Granular

COLOR . . . . . .: Brown

ODOR . . . . . .: Sharp, musty

MOLECULAR WEIGHT . . . . . .: 293.8 (for triadimefon)

pH . . . . . .: 7.5 - 8.5

BOILING POINT . . . . . .: Not applicable

MELTING/FREEZING POINT . . . . . .: 82.3 C (for triadimefon)

SOLUBILITY IN WATER . . . . . .: 64 ppm @ 20 C (for triadimefon)

SPECIFIC GRAVITY . . . . . .: Not established

BULK DENSITY . . . . . .: 33-36 lb/cu ft

% VOLATILE BY VOLUME . . . . . .: Not Applicable

VAPOR PRESSURE . . . . . .: 1.5 x 10 -7 mm Hg @ 20 C (for triadimefon)

VAPOR DENSITY . . . . . .: Not applicable (Air = 1)

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STRIKE® 50 WDG

Greenhouse and Nursery Systemic Fungicide

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X. STABILITY AND REACTIVITY:

STABILITY . . . . . .: This is a stable material.

HAZARDOUS POLYMERIZATION . . . . .: Will not occur.

INCOMPATIBILITIES . . . . . .: Strong oxidizing agents, acids

INSTABILITY CONDITIONS . . . . . .: Not Noted

DECOMPOSITION PRODUCTS . . . . . .: Proposed compounds due to fire or other extreme conditions: HCl, amines, nitrogen oxides, CO

XI. TOXICOLOGICAL INFORMATION:

Acute toxicology information provided below has been extrapolated from a similar formulation, TRIADIMEFON 50% WP. The non-acute information pertains to the active ingredient, triadimefon.

ACUTE TOXICITY

ORAL LD50 . . . . . .: Male Rat: 812 mg/kg -- Female Rat: 1470 mg/kg

DERMAL LD50 . . . . . .: Male and Female Rat: >2000 mg/kg -- Male and Female Rabbit: >2000 mg/kg

INHALATION LC50 . . . . . .: 4 Hr. Exposure to Dust: Male and Female Rat: >3.532 mg/l (analytical) -- 1 Hr. Exposure to Dust (extrapolated from 4 Hr. LC50): Male and Female Rat: >14.128 mg/l (analytical)

EYE EFFECTS . . . . . .: Rabbit: Minimal irritation to the conjunctiva was observed with remarkable irritation resolving within 1 day.

SKIN EFFECTS . . . . . .: Rabbit: Slight dermal irritant.

SENSITIZATION . . . . . .: Guinea Pig: Dermal sensitization studies have not been performed on this product as formulated, however, dermal sensitization studies performed on a similar formulation, TRIADIMEFON 25 T/O, and the active ingredient, triadimefon, have been positive.

SUBCHRONIC TOXICITY . . . . . .: In a 4 week dermal toxicity study, rabbits were exposed to the active ingredient for 7 hours/day, 5 days/week, at levels of 50 and 250 mg/kg. Slight dermal irritation was exhibited by rabbits of both dose groups. In a 3 week dermal toxicity study, rats were treated with triadimefon at levels of 100, 300 or 1000 mg/kg for 6 hours/day, 5 days/week. At 1000 mg/kg, behavioral changes observed included increased reactivity and increased activity. Based on clinical signs, the no-observed-effect-level (NOEL) was 300 mg/kg. In a subchronic inhalation study, rats were exposed to triadimefon for 6 hours/day, for 15 days to liquid aerosol concentrations of 78.7 and 307 mg/cubic meter. The no effect concentration was 78.7 mg/cubic meter. Liver weights were increased at 307 mg/cubic meter.

CHRONIC TOXICITY . . . . . .: In a 2 year study, dogs were administered triadimefon at dietary concentrations of 100, 330 or 1000 ppm. The high dose was administered at 1000 ppm for 54 weeks and then increased to 2000 ppm for the remainder of the study. Liver weights and liver enzyme levels were increased at the high dose, however, histopathological examinations did not reveal any damage to the liver. The NOEL was 330 ppm. When rats were administered triadimefon for 2 years at dietary concentrations ranging from 50 to 1800 ppm, the NOEL was 300 ppm. Effects observed at the high dose included reduced body weights, increased feed consumption, changes in serum chemistries, increased liver weights and thyroid effects.

CARCINOGENICITY . . . . . .: Triadimefon was tested for carcinogenicity in 2 feeding studies using rats. In the first study, rats were administered dietary concentrations of 50 or 500 ppm for 2 years. No evidence of a carcinogenic effect was found. In the second study, triadimefon was administered for 2 years at dietary concentrations of 50, 300 or 1800 ppm. At the high dose only, there was a slight increase in the incidence of benign follicular adenomas of the thyroid. In oncogenicity studies using mice, triadimefon was administered at dietary concentrations of 50, 300 or 1800 ppm. At the high dose only, there was an increase in the incidence of benign liver tumors. No increase in malignant tumors occurred.

MUTAGENICITY . . . . . .: Numerous in vitro and in vivo mutagenicity studies have been conducted on triadimefon, all of which are negative.

DEVELOPMENTAL TOXICITY . . . . . .: In teratology studies using rats, triadimefon was administered during gestation at oral doses ranging from 10 to 100 mg/kg. Teratogenic effects were observed, but only at maternally toxic dose levels. The overall NOELs derived from these studies for maternal and developmental toxicity were 10 and 30 mg/kg, respectively. In an inhalation teratology study, rats were exposed to triadimefon during gestation at liquid aerosol concentrations of 14.0, 33.2 or 113.7 mg/cubic meter for 6 hours/day. The NOEL for maternal toxicity was 14.0 mg/cubic meter. No fetotoxic or teratogenic effects were observed. In teratology studies using rabbits, triadimefon was administered during gestation at oral doses ranging from 5 to 120 mg/kg. The overall NOEL derived from these studies for both maternal and developmental toxicity was 20 mg/kg. Starting at the maternally toxic level of 40 mg/kg, there was an increased incidence of fetal skeletal variations.

REPRODUCTION . . . . . .: In reproduction studies, triadimefon was administered to rats at dietary concentrations of 50, 300 or 1800 ppm. At 1800 ppm, reproductive effects including smaller litter sizes, reduced litter weights, and reduced viability and lactation were observed; at this dose, parental body weight gains were depressed and a reduction in mating occurred. The reproductive NOEL was 300 ppm.

XII. ECOLOGICAL INFORMATION:

This compound has been thoroughly evaluated for ecological effects. Bayer will provide a summary of specific data upon written request. As with any pesticide, this product should be used according to lable directions and should be kept out of streams, lakes and other aquatic habitats of concern.

XIII. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD . . . . . .: Follow container label instructions for disposal of wastes generated during use in compliance with the FIFRA product label. In other situations, bury in an EPA approved landfill or burn in an incinerator approved for pesticide destruction. Do not reuse container.

XIV. TRANSPORTATION INFORMATION:

TECHNICAL SHIPPING NAME . . . . . .: Triadimefon

FREIGHT CLASS BULK . . . . . .: Do not ship in bulk

FREIGHT CLASS PACKAGE . . . . . .: Fungicides, NOI (NMFC 102120)

PRODUCT LABEL . . . . . .: Not Applicable

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Greenhouse and Nursery Systemic Fungicide

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DOT (DOMESTIC SURFACE)

HAZARD CLASS OR DIVISION . . . . . : Non-Regulated

IMO / IMDG CODE (OCEAN)

HAZARD CLASS DIVISION NUMBER . .: Non-Regulated

ICAO / IATA (AIR)

HAZARD CLASS DIVISION NUMBER . .: Non-Regulated

XV. REGULATORY INFORMATION:

OSHA STATUS . . . . . .: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS . . . . . .: This product is exempt from TSCA Regulation under FIFRA Section 3 (2)(B)(ii) when used as a pesticide.

CERCLA REPORTABLE QUANTITY . . .: No components are listed.

SARA TITLE III:

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES:
No components listed

SECTION 311/312 HAZARD CATEGORIES:
Immediate Health Hazard

SECTION 313 TOXIC CHEMICALS:
No components listed

RCRA STATUS . . . . . .: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24) This product is not a hazardous waste under RCRA.

XVI. OTHER INFORMATION:

NFPA 704M RATINGS:	Health	Flammability	Reactivity	Other
	1	1	1	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

Bayer's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. NFPA ratings are provided by Bayer as a customer service.

REASON FOR ISSUE . . . . . .: Create new MSDS

APPROVAL DATE . . . . . .: 08/05/96

SUPERSEDES DATE . . . . . .: None

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Olympic Horticultural Products Company. The data on this sheet relates only to the specific material designated herein. Olympic Horticultural Products Company assumes no legal responsibility for use or reliance upon these data.

SUFFUSION™ GRANULES

OLYMPIC HORTICULTURAL PRODUCTS™

SPECIMEN LABEL

AN EFFECTIVE BLEND OF SURFACTANTS FOR USE ON ALL TYPES OF GROWING MEDIA IN NURSERIES, GREENHOUSES, INTERIOR PLANTSCAPES AND SOIL PRODUCTION

ACTIVE INGREDIENT:
22% Alkoxyether surfactant (A Non-Plant Food Ingredient)

Net Weight: 50 lbs. or 22.7 kg

KEEP OUT OF REACH OF CHILDREN

WARNING / AVISO

PRECAUTIONARY STATEMENTS

Avoid development of dust.

Do not apply this product in a manner as to directly or through drift, expose workers or other persons.

Applicators and other handlers of the product must wear: Goggles or a facial splash shield, chemical resistant gloves, such as nitrile rubber or neoprene rubber, coveralls or long pants, long sleeved shirt, shoes and socks.

FIRST AID

If in Eyes: Immediately wash eyes, hold eyelids open and flush with a steady gentle stream of water for 15 minutes. If irritation persists get medical attention.

If on Skin: Remove contaminated clothing and wash skin with soap and water. If irritation persists, contact a physician.

If Inhaled: Move person to fresh air. Give artificial respiration if necessary. Get medical attention if warranted.

If Swallowed: If person is conscious drink large amounts of water and induce vomiting. Get immediate medical attention.

GENERAL INFORMATION

IMPORTANT: Read the entire DIRECTIONS FOR USE, GENERAL INFORMATION and LIMITATION OF WARRANTY AND CONDITIONS OF SALE before buying or using this product.

Suffusion is an effective blend of surfactants for use on all types of growing media in nurseries, greenhouses interior plantscapes and soil production.

Specifically developed to :

- Improve water penetration and retention of optimum moisture levels.
- Give excellent initial wetting and long term re-wetting.
- Assist uniform wetting and drying of the growing media.
- Improve drainage.

DIRECTIONS FOR USE

Suffusion can be: - Incorporated in the growing media
- Applied as a top dressing to containers and drenched in.

Growing Media Preparation – Incorporation

Production Area	Rate / cubic yard	Longevity Requirements / Growing Media Conditions
Containers, field soil Long-term production cycles	2 lbs.	Maximum longevity (9 - 12 months) Severely water repellent
Pots, hanging baskets Medium term production cycles	1 lb.	Medium longevity (3 - 6 months) Moderately water repellent
Flats, pots, trays, plugs Short term production cycles	½ lb.	Short term activity (2 - 6 weeks) Slightly water repellent

Note: There may be variations in longevity under variable growing conditions.

Further applications can be made as necessary during production (see below).

Growing Media in Production – Top-dress and Drench In

Production Area	Rate
Containers, pots, hanging baskets and interior plantscapes	2 teaspoons per 1 gallon container 4 teaspoons per 2 gallon container 2 tablespoons per 3 gallon container 3 tablespoons per 5 gallon container

Further applications can be made as required.

Addition of water as a drench over the granules will assist the movement of **Suffusion** into the growing media.

STORAGE AND DISPOSAL

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

Storage: Store only in original container. Keep container tightly closed. Keep in a safe and locked storage place. Do not allow water to be introduced into the contents of this container.

Protect from frost

Container Disposal: Completely empty bag into application equipment. Dispose of bag into a sanitary landfill or by incineration or dispose of in accordance with federal, state and local laws.

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

LIMITATION OF WARRANTY AND CONDITIONS OF SALE

Read this LIMITATION OF WARRANTY AND CONDITIONS OF SALE before buying or using this product.

Olympic Horticultural Products Company warrants that this product conforms to the chemical description on the label and if used in accordance with directions for use, is fit for the purpose referred to. It is impossible, however, 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 Olympic Horticultural Products Company. All such risks are expressly assumed by the buyer.

Olympic Horticultural Products Company makes no other warranties of merchantability or fitness for a particular purpose or any other express or implied warranty except as stated above. Under no circumstances shall the manufacturer be held liable for consequential or indirect damages resulting from the use or handling of this product. Damages caused by this product shall be limited to the purchase price.

SUFFUSION is a trademark of AmegA Sciences.

Guaranteed by:
Service Chemicals
Daventry, England

Manufactured for:
Olympic Horticultural Products Company
P. O. Box 230
Mainland, PA 19451
Customer Service: (800) 659-6745
Technical Service: (800) 356-4647

OLYMPIC
HORTICULTURAL PRODUCTS™

988450REV OHP0601SL

MATERIAL SAFETY DATA SHEET

OLYMPIC HORTICULTURAL PRODUCTS, CO.
P.O. BOX 230, MAINLAND, PA 19451
800-659-6745

MSDS Date: May 3, 1999

TRANSPORTATION EMERGENCY
NOT REQUIRED

NON-TRANSPORTATION
OLYMPIC EMERGENCY PHONE . . . . . .(800)-356-4647
OLYMPIC INFORMATION PHONE . . . . .(800)-659-6745

PRODUCT NAME: SUFFUSION™ GRANULES

I. IDENTIFICATION OF SUBSTANCE OR PREPARATION

Suffusion Granules

II. COMPOSITION / INFORMATION ON INGREDIENTS

Proprietary blend of surfactants on an agricultural carrier.

III. HAZARDS IDENTIFICATION

IV. FIRST AID MEASURES

INHALATION . . . . . .: Remove person to fresh air.

SKIN CONTACT . . . . . .: Flush with plenty of water and if irritation persists seek medical attention.

EYE CONTACT . . . . . .: Irrigate the eye with water or eye wash solution and seek medical attention.

INGESTION . . . . . .: Give milk or water as a dilutent, 1/4 fluid ounce per pound of body weight to a maximum of 3.25 - 5.0 fluid ounces and seek immediate medical attention.

NOTES TO PHYSICIAN . . . . . .: Treat symptomatically.

V. FIRE FIGHTING MEASURES

Material is not flammable. Use any suitable fire fighting medium.

VI. ACCIDENTAL RELEASE MEASURES

Dispose of according to local authority guidelines. For spills, sweep and shovel into a suitable container, then flush area of floor with water. Prevent runoff from entering streams, sewers or other waterways.

VII. HANDLING AND STORAGE

HANDLING . . . . . .: Avoid skin and eye contact.

STORAGE . . . . . .: Store at ambient temperatures. Keep from freezing.

VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

RESPIRATORY PROTECTION . . . . . .: Not necessary unless used in a confined space.

HAND PROTECTION . . . . . .: Wear suitable gloves.

EYE PROTECTION . . . . . .: Wear suitable goggles.

SKIN PROTECTION . . . . . .: Wear suitable overalls.

OCCUPATIONAL EXPOSURE LIMIT . . . . . .: None set.

IX. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE . . . . . .: Brown Granules.

ODOR . . . . . .: None.

pH . . . . . .: Not applicable as a granule.

pH of 0.5% . . . . . .: Not applicable.

BOILING POINT . . . . . .: Not determined.

MELTING POINT . . . . . .: Not determined.

FLASH POINT . . . . . .: No measurable flash point.

VAPOR PRESSURE . . . . . .: Not determined.

RELATIVE DENSITY . . . . . .: 4.464 lbs. per cu ft

SOLUBILITY IN WATER . . . . . .: Insoluble.

X. STABILITY AND REACTIVITY

CONDITIONS TO AVOID . . . . . .: Extreme temperatures.

MATERIALS TO AVOID . . . . . .: None known.

HAZARDOUS DECOMPOSITION PRODUCTS . . . . . .: None known.

XI. TOXICOLOGICAL INFORMATION

SKIN CONTACT . . . . . .: Not considered toxic by contact.

EYE CONTACT . . . . . .: Irritation to the eye may occur.

INGESTION . . . . . .: May cause nausea. No toxic effect expected. Irritation to the digestive system can occur.

XII. ECOLOGICAL INFORMATION

Should not present an ecological hazard.

XIII. DISPOSAL CONSIDERATIONS

Dispose of according to local authority guidelines.

XIV. TRANSPORTATION INFORMATION

Not regulated.

UN No . . . . . .: N/A

IMO / IMDG . . . . . .: N/A

ICAO / IATA . . . . . .: N/A

ADR . . . . . .: N/A

PROPER SHIPPING NAME . . . .: N/A

ADDITIONAL INFORMATION . . .: N/A

XV. OTHER INFORMATION

The information given in this safety data sheet is based on knowledge available at the time of compilation, and is intended to describe the product only in terms of health and safety requirements. It does not signify any warranty with regard to specific properties or specifications

SUFFUSION™ LIQUID

OLYMPIC HORTICULTURAL PRODUCTS™

SPECIMEN LABEL

AN EFFECTIVE BLEND OF SURFACTANTS FOR USE ON ALL TYPES OF GROWING MEDIA IN NURSERIES, GREENHOUSES, INTERIOR PLANTSCAPES AND SOIL PRODUCTION

ACTIVE INGREDIENT:
100% Alkoxyether surfactants (A Non-Plant Food Ingredient)

Net Contents: 2.5 gallons or 9.5 Litres

SUFFUSION™ LIQUID

KEEP OUT OF REACH OF CHILDREN

WARNING / AVISO

PRECAUTIONARY STATEMENTS

Causes irritation to eyes and skin.

Harmful if swallowed.

Avoid breathing vapor or mist.

Do not apply this product in a manner as to directly or through drift, expose workers or other persons.

Applicators and other handlers of the product must wear: Goggles or a facial splash shield, chemical resistant gloves, such as nitrile rubber or neoprene rubber, coveralls or long pants, long sleeved shirt, shoes and socks.

FIRST AID

If in Eyes: Immediately wash eyes, hold eyelids open and flush with a steady gentle stream of water for 15 minutes. If irritation persists, get medical attention.

If on Skin: Remove contaminated clothing and wash skin with soap and water. If irritation persists, contact a physician.

If Inhaled: Move person to fresh air. Give artificial respiration if necessary. Get medical attention if warranted.

If Swallowed: If person is conscious drink large amounts of water and induce vomiting. Get immediate medical attention.

GENERAL INFORMATION

IMPORTANT: Read the entire DIRECTIONS FOR USE, GENERAL INFORMATION AND LIMITATION OF WARRANTY AND CONDITIONS OF SALE before buying or using this product.

Suffusion is an effective blend of surfactants for use on all types of growing media in nurseries, greenhouses and soil production.

Specifically developed to :

- Improve water penetration and retention of optimum moisture levels.
- Give excellent initial wetting and long term re-wetting.
- Assist uniform wetting and drying of the growing media.
- Improve drainage.
- Easily mixed under cold conditions.

DIRECTIONS FOR USE

Suffusion can be:
- Incorporated in the growing media
- Applied as a drench
- Used at low rates in the irrigation / fertigation system

Growing Media Preparation – Incorporation

Production Area	Rate / cubic yard	Longevity Requirements / Growing Media Conditions
Containers, field soil Long-term production cycles	6 fl. oz.	Maximum longevity (9 - 12 months) Severely water repellent media.
Pots, hanging baskets Medium term production cycles	4-5 fl. oz.	Medium longevity (3 - 6 months) Moderately water repellent media.
Flats, pots, trays, plugs Short term production cycles	2-3 fl. oz.	Short term activity (2 - 6 weeks) Slightly water repellent media.

Note: There may be variations in longevity under variable growing conditions.

Further applications can be made as necessary during production (see below).

Water Volume

Mix **Suffusion** with water before application.

Apply in 2 gallons of water per cubic yard of growing media.

To achieve an even mix spray as evenly as possible while growing media is blending.

Growing Media In Production – Drench

Production Area	Rate PPM	Longevity Requirements / Growing Media Conditions
Containers, field soil, balled and burlap stock Long-term production cycles	1000 - 1500 13-19 fl. oz. / 100 gals water	Maximum longevity (6 - 12 months) Severely water repellent
Pots, hanging baskets Medium term production cycles	600 - 1000 8 - 13 fl. oz. / 100 gals water	Medium longevity (2 - 6 months) Moderately water repellent
Flats, pots, trays Short term production cycles	300 - 500 4 - 6 fl. oz. / 100 gals water	Short term activity (2 - 6 weeks) Slightly water repellent

Note: There may be variations in longevity under variable growing conditions.

Prepare the appropriate dilution of **Suffusion** by mixing in water and drench onto soil media surface. Further applications can be made as required.

Under dry conditions increasing the water volume assists the movement of **Suffusion** into the growing media.

Growing media in production — Irrigation

Production Schedule	PPM
Daily Feeding	5
Weekly Feeding	50

Use higher rates if media is severely water repellent and water management is of high priority.

Use a test jar to determine physical compatibility.

Additional Usage Areas

Production Schedule	PPM	
Prior to Shipment	500 - 1000	Drench containers, hanging baskets and trays pror to shipment.
Interior Plantscapes	500 - 1000	Drench containers, hanging baskets and planters.
Misting Cuttings	150	Spray freshly stuck cuttings with a very fine mist to the point of run off.
Dying Cut Flowers	150	Incorporate **Suffusion** in the dye solution.
Continuous Overhead Watering **Young Plants** **Established Plants**	 10 - 20 20 - 50	For removal of siting water on foliage.

It is advised to pre-spray a small selection of ornamental plants if local use experience is unavailable and observe for 3 to 5 days for sensitivity.

STORAGE AND DISPOSAL

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

Storage: Store only in original container. Keep container tightly closed. Keep in a safe and locked storage place. Do not allow water to be introduced into the contents of this container.

Protect from frost and avoid extremes of storage temperatures.

Container Disposal: Triple rinse (or equivalent), empty rinsate into spray tank, then offer for recycling or reconditioning, puncture or dispose of in accordance with federal, state and local laws.

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

LIMITATION OF WARRANTY AND CONDITIONS OF SALE

Read this LIMITATION OF WARRANTY AND CONDITIONS OF SALE before buying or using this product.

Olympic Horticultural Products Company warrants that this product conforms to the chemical description on the label and if used in accordance with directions for use, is fit for the purpose referred to. It is impossible, however, 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 Olympic Horticultural Products Company. All such risks are expressly assumed by the buyer.

Olympic Horticultural Products Company makes no other warranties of merchantability or fitness for a particular purpose or any other express or implied warranty except as stated above. Under no circumstances shall the manufacturer be held liable for consequential or indirect damages resulting from the use or handling of this product. Damages caused by this product shall be limited to the purchase price.

Guaranteed by:
Service Chemicals
Daventry, England

Manufactured for:
Olympic Horticultural Products Company
P. O. Box 230
Mainland, PA 19451
Customer Service: (800) 659-6745
Technical Service: (800) 356-4647

OLYMPIC HORTICULTURAL PRODUCTS™

988425REV OHP0401SL

MATERIAL SAFETY DATA SHEET

OLYMPIC HORTICULTURAL PRODUCTS, CO.
P.O. BOX 230, MAINLAND, PA 19451
800-659-6745

MSDS Date: May 3, 1999

TRANSPORTATION EMERGENCY
NOT REQUIRED

NON-TRANSPORTATION
OLYMPIC EMERGENCY PHONE . . . . . .(800)-356-4647
OLYMPIC INFORMATION PHONE . . . . .(800)-659-6745

PRODUCT NAME: SUFFUSION™ LIQUID

I. IDENTIFICATION OF SUBSTANCE OR PREPARATION

Suffusion Liquid

II. COMPOSITION / INFORMATION ON INGREDIENTS

Proprietary blend of surfactants.

III. HAZARDS IDENTIFICATION

None.

IV. FIRST AID MEASURES

INHALATION . . . . . .: Remove person to fresh air.

SKIN CONTACT . . . . . .: Wash affected area with plenty of water.

EYE CONTACT . . . . . .: Irrigate the eye with water or eye wash solution for 10 - 15 minutes and seek medical attention.

INGESTION . . . . . .: Effects can be minimized by drinking water or milk. Do not induce vomiting. Seek medical attention.

NOTES TO PHYSICIAN . . . . . .: Treat symptomatically.

V. FIRE FIGHTING MEASURE

In open fires, any type of fire medium can be used.

VI. ACCIDENTAL RELEASE MEASURES

Absorb spills with sand or any suitable medium. Sweep and shovel into a suitable container, then flush area of floor with water. Prevent runoff from entering streams, sewers or other waterways. Dispose of according to local authority guidelines.

VII. HANDLING AND STORAGE

HANDLING . . . . . .: Avoid skin and eye contact.

STORAGE . . . . . .: Store at ambient temperatures. Keep from freezing.

VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

RESPIRATORY PROTECTION . .: Not necessary.

HAND PROTECTION . . . . . .: Wear suitable gloves.

EYE PROTECTION . . . . . .: Wear goggles.

SKIN PROTECTION . . . . . .: Wear suitable overalls.

OCCUPATIONAL EXPOSURE LIMIT . . . . . .: None set.

IX. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE . . . . . .: Clear colorless liquid.

ODOR . . . . . .: Negligible.

BOILING POINT . . . . . .: Not determined.

VAPOR PRESSURE . . . . . .: Not applicable.

MELTING POINT . . . . . .: Not applicable.

RELATIVE DENSITY . . . . . .: 1.025 ± 0.010

pH . . . . . .: 7 ± 1

pH of 0.5% . . . . . .: 7 ± 1

FLASH POINT . . . . . .: Not determined.

SOLUBILITY IN WATER . . . . . .: Soluble.

X. STABILITY AND REACTIVITY

CONDITIONS TO AVOID . . . . . .: Extreme temperatures.

MATERIALS TO AVOID . . . . . .: None known.

HAZARDOUS DECOMPOSITION PRODUCTS . . . . . .: Oxides of carbon.

XI. TOXICOLOGY INFORMATION

SKIN CONTACT . . . . . .: Not considered toxic by skin contact.

EYE CONTACT . . . . . .: May cause transient redness.

INGESTION . . . . . .: May cause nausea and diarrhea. Single dose oral toxicity is considered to be low. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing larger than that may cause injury.

XII. ECOLOGICAL INFORMATION

Should not present an ecological hazard.

XIII. DISPOSAL CONSIDERATIONS

Dispose of according to local authority guidelines.

XIV. TRANSPORTATION INFORMATION

Not applicable.

UN No . . . . . .: N/A

IMO/IMDG . . . . . .: N/A

ICAO / IATA . . . . . .: N/A

ADR . . . . . .: N/A

PROPER SHIPPING NAME . . . .: N/A

XV. OTHER INFORMATION

The information given in this safety data sheet is based on knowledge available at the time of compilation and is intended to describe the product only in terms of health and safety requirements. It does not signify any warranty with regard to specific properties or specifications.

TRIACT® 70

OLYMPIC HORTICULTURAL PRODUCTS™

Broad Spectrum Fungicide / Insecticide / Miticide — SPECIMEN LABEL

FOR INDOOR/OUTDOOR USE ON ORNAMENTAL FLOWERING PLANTS, TREES, SHRUBS, FOLIAGE, GROWN IN NURSERIES, GREENHOUSES AND COMMERCIAL LANDSCAPES.
CONTROLS FUNGAL DISEASES INCLUDING BLACK SPOT, MILDEWS, RUSTS AND SCAB.
KILLS INSECTS INCLUDING WHITEFLIES, APHIDS, MITES AND SCALES.

ACTIVE INGREDIENT:	
Clarified Hydrophobic Extract of Neem Oil	70%
INERT INGREDIENTS	30%
Total	100%

This product contains 5.46 lbs. of clarified hydrophobic extract of neem oil per US gallon.

EPA Reg. No. 70051-2-59807 **EPA Est. 70051-CA-001**

Net Contents: 2.5 gallons

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if absorbed through the skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

Personal Protective Equipment:

Some materials that are chemical-resistant to this product are listed below. If you want more options follow the instructions for category C on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl-chloride (PVC) or Viton.
- 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 toliet.
- Remove clothing 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.

STATEMENT OF PRACTICAL TREATMENT

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

IF IN EYES: Wash with plenty of water. Call physician if irritation persists.

ENVIRONMENTAL HAZARDS

This product may be hazardous to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark.

Do not contaminate water by cleaning of equipment or disposal of equipment washwaters.

BEE HAZARD

This product is toxic to bees exposed to direct treatment. Do not apply this product while bees are actively visiting the treatment area.

PHYSICAL AND CHEMICAL HAZARDS

Do not use or store near heat or open flame.

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.

Do not apply this product through any type of irrigation system.

STORAGE AND DISPOSAL

STORAGE: Keep in original container. Store in a dry place away from direct sunlight, feed, or foodstuffs. Keep container tightly sealed when not in use. Do not store below 40° F (4°C).

PESTICIDE DISPOSAL: Do not contaminate water, food, or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on-site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Triple rinse. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

AGRICULTURAL USE REQUIREMENTS

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

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

- Coveralls.
- Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl-chloride (PVC) or Viton.
- Shoes plus socks.

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.

Keep unprotected persons out of treated areas until sprays have dried.

General Information:

- Broad spectrum disease control.
- Disease preventative.
- Effective botanical disease control.
- Kills eggs, larvae and adult insects.
- Prevents fungal attack of plant tissues.
- Prevents and controls black spot on roses, anthracnose, rust and powdery mildew.
- All-purpose insecticide / fungicide / miticide.
- Formulated for interiorscape use.
- Shake well before using.
- Not for use in food handling areas.
- For best results, maintain constant agitation in spray equipment.
- For optimal performance, do not mix with cold water (less than 45° F).
- **TRIACT 70** is most effective when applied in early to mid-morning or late afternoon when adult pests, such as whiteflies, are normally sedentary on the undersides of the foliage.
- Spray solutions should be used within several hours of preparation for maximum effectiveness. Do not store diluted solution for later use.
- Do not apply to wilted or otherwise stressed plants, or to newly transplanted materials prior to root establishment.
- Do not apply to known sensitive plant species, such as impatiens flowers, fuchsia flowers, hibiscus flowers, some rose flowers, ornamental olive trees or some carnation varieties, without prior testing.
- When used in conjunction with beneficial insects, it is recommended that a small trial be conducted to assure compatibility before using on a large scale.
- As with other oil-based products, care should be exercised in timing applications to early morning / late evening to minimize the potential for leaf burn.
- Use with care on plants with tender tissue. Check for leaf burn in small-scale trials prior to use.

TANK MIXING:

TRIACT 70 has been found to be compatible with most commonly used fungicides, insecticides and fertilizers. Physical compatibility should first be checked by using the correct proportion of products in a small jar test. Growers should then test tank-mix combinations for phytotoxicity on a sample of plants prior to use. This is also recommended with combinations used before as environmental conditions can alter the interaction between compounds. *Due to the wide variation in climatic conditions, cultural practices, and other factors, the User assumes full responsibility for any crop damage or other liability resulting from the use of **TRIACT 70** in a tank mix combination.*

GREENHOUSE, LANDSCAPE, AND NURSERY USE INSTRUCTIONS:

FUNGICIDE USE

Ornamental Disease Control:

TRIACT 70 is an effective fungicide for the prevention and control of various fungal diseases including black spot on roses, powdery mildew, downy mildew, anthracnose, rust, leaf spot, botrytis, needle rust, scab and flower, twig and tip blight.

Landscape, Greenhouse, and Nursery Ornamentals:

TRIACT 70 will provide broad spectrum control of many fungal diseases affecting ornamental flowering plants, trees, shrubs and foliage when used as a foliar spray.

TRIACT 70 should be used at the rate of 1 gallon per 100-200 gallons of water, depending on the level of disease pressure. The lower rate (1:200) can be used when spraying as a preventative in a greenhouse while the higher rate (1:100) is needed for outdoor applications. Determine the best rate for your particular situation.

Greenhouse:

When **TRIACT 70** is used as a preventative, the lower rate (1:200) will provide adequate control for most greenhouse situations. If disease pressure is evident, the higher rate (1:100) is

recommended. Applications for disease prevention should be made on a 7 - 14 day schedule depending on the anticipated severity of the disease pressure. To control existing disease, **TRIACT 70** should be applied on a 7-day schedule until the disease pressure is eliminated. A 14-day schedule should then be used to prevent disease pressure from returning. **NOTE:** Greenhouse roses should only be sprayed in a rotation program, which includes **TRIACT 70** once every 4 weeks.

Landscape Ornamentals:
In outdoor landscape applications, it is best to apply **TRIACT 70** at the 1:100 rate. This will provide the necessary control under the extreme outdoor conditions. When using **TRIACT 70** as a preventative, application should be made on a 14-day schedule. If disease is present, a 7-day application schedule should be used to control the disease and prevent further damage from occurring.

MIXING INSTRUCTIONS:

Add **TRIACT 70** to one-half (1 / 2) full tank under agitation containing water of 45°F or greater before filling to desired level. If water temperature is below 45°F, pre-mix **TRIACT 70** at a 1:1 ratio with tepid water to ensure good emulsification. Then dilute to final volume. When combining with other products, such as wettable powder insecticides or fungicides, add these items first when the tank is approximately 1 / 3 full. Ensure that there is good agitation while mixing for complete emulsification. Maintain agitation during spray application. Do not use if this oil does not emulsify.

APPLICATION INSTRUCTIONS:

Apply to runoff at 25 - 40 psi with hand sprayer or 100 - 200 psi with power sprayer as a fine spray to both leaf surfaces. Excessive application in unnecessary and should be avoided.

Management of Landscape and Ornamental Diseases

Spray Target	Concentration	Spray Interval	Precautions
Potted Plants (Greenhouse)	1:100 - 1:200 (1.0% - 0.5%)	14 days	Trial first on open blooms
Flowering Bench Crops (Greenhouse)	1:100 - 1:200 (1.0% - 0.5%)	7 - 14 days	Trial first on open blooms - not suggested for cut roses
Outdoor Flowering Plants	1:100 - 1:200 (1.0% - 0.5%)	7 - 14 days	Do not spray impatiens flowers
Outdoor Woody Plants	1:50 - 1:100 (2.0% - 1.0%)	14 days	——

Management of Turf Diseases

Spray Target	Concentration	Spray Interval	Precautions
Snow Mold	1:100 - 1:50 (1.0% - 2.0%)	14 days	In fall before first snow
Dollar Spot	1:100 - 1:200 (1.0% - 0.5%)	14 days	At first sign of disease
Brown Patch	1:100 - 1:200 (1.0% - 0.5%)	14 days	At first sign of disease

INSECTICIDE USE:

For use to control whiteflies, mealybugs, aphids, leafhoppers, mites and scales on ornamentals, trees and shrubs in and around greenhouses, commercial nurseries, and other commercial and residential structures.

TRIACT 70 should be used at the rate of 1 - 2 gallons per 100 gallons of water. The low rate (1%) can be used when pest pressure is low. The high rate (2%) should be used for high pest infestations or to control more troublesome pests, such as mites and scales. Determine the best rate for your particular situation.

Sprays should be made on a 7 - 14 day interval depending on the severity of the pest problem. The 7-day schedule should be used until the pest population is reduced. A 14-day interval should then be used for control. Sprays should be made in early to mid-morning or late afternoon. This is important to ensure that the spray thoroughly wets the pests to be controlled, which are often sedentary on the foliage at these times, and also minimizes plant stress.

MIXING INSTRUCTIONS:

Add **TRIACT 70** to one-half (1 / 2) full tank under agitation containing water of 45°F or greater before filling to desired level. If water temperature is below 45°F, pre-mix **TRIACT 70** at a 1:1 ratio with tepid water to ensure good emulsification. Then dilute to final volume. When combining with other products, such as wettable powder insecticides or fungicides, add these items first when the tank is approximately 1 / 3 full. Ensure that there is good agitation while mixing for complete emulsification. Maintain agitation during spray application. Do not use if this oil does not emulsify.

APPLICATION INSTRUCTIONS:

Apply to runoff at 25 - 40 psi with hand sprayer or 100 - 200 psi with power sprayer as a fine spray to both leaf surfaces. Thorough coverage of plant pests is necessary to ensure efficacy. However, excessive application is unnecessary and should be avoided.

Warranty

Olympic Horticultural Products Company warrants that the material contained herein conforms to the description on the label and is reasonably fit for the purposes referred to in the directions for use. Timing and method of application, weather, watering practices, nature of soil, the insect problem, condition of the crop, incompatibility with other chemicals not specifically recommended, and other influencing factors in the use of this product are beyond the control of the seller. Buyer assumes all risks of use, storage or handling of this material not in strict accordance with directions given herein. NO OTHER EXPRESS OR IMPLIED WARRANTY OF THE FITNESS OR MERCHANTABILITY IS MADE.

Composition covered by US Patents 5,298,251; 5,356,629; 5,372,817; 5,405,612; and 5,409,708.

TRIACT is a registered trademark of Thermo Trilogy Corporation.

OLYMPIC HORTICULTURAL PRODUCTS™

Manufactured for:
Olympic Horticultural Products Company
P.O. Box 230
Mainland, PA 19451
(800) 659-6745

OHP01991

MATERIAL SAFETY DATA SHEET

OLYMPIC HORTICULTURAL PRODUCTS

OLYMPIC HORTICULTURAL PRODUCTS, CO.
P.O. BOX 230, MAINLAND, PA 19451
800-659-6745

CAS NO. (a.i.): 8002-65-1
MSDS Rev. Date: December 2, 1997
Supercedes: July 31,1996

TRANSPORTATION EMERGENCY
CALL CHEM TEL: . . . . . (800) 255-3924
Outside USA call: . . . . . (813) 977-3668

NON-TRANSPORTATION
OLYMPIC EMERGENCY PHONE: . . . . . .(800) 356-4647
OLYMPIC INFORMATION PHONE: . . . . . .(800) 659-6745

PRODUCT NAME: TRIACT® 70

EPA Registration Number 7 51-2-598 7

I. CHEMICAL PRODUCT INFORMATION

PRODUCT NAME . . . . . .: TRIACT® 70
CHEMICAL FAMILY . . . . . .: Lipid
CHEMICAL NAME . . . . . .: Clarified hydrophobic extract of Neem Oil
FORMULA . . . . . .: N/A

II. COMPOSITION / INFORMATION ON INGREDIENTS

			OSHA	TLV's	
COMPONENT	CAS#	WT.%	PEL	TWA	STEL
Clarified hydrophobic extract of Neem Oil	8002-65-1	70	N/A	N/A	N/A
Inert ingredient	5989-27-5	25	N/A	N/A	N/A

III. HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW

This product is intended for use as a pesticide to control insects on agricultural crops. This product should pose no health concerns through normal use in accordance with label directions. Flammable liquid. Keep away from heat, sparks, or open flame.

Potential Health Effects

ROUTE(S) OF ENTRY . . . . . .: Eyes, skin, oral, inhalation

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE . . . . . .: None noted

ACUTE EYE CONTACT . . . . . .: May cause mild, reversible eye irritation

CHRONIC EYE CONTACT . . . .: Chronic exposure not likely from normal use

ACUTE SKIN CONTACT . . . . . .: Repeated exposure may cause mild sensitization

CHRONIC SKIN CONTACT . . . .: Repeated exposure may cause slight sensitization

ACUTE INGESTION . . . . . .: LD_{50}>5g/kg

CHRONIC INGESTION . . . . . .: Chronic exposure not likely from normal use

ACUTE INHALATION . . . . . .: LC_{50}>6.2 mg/l

CHRONIC INHALATION . . . . . .: Chronic exposure not likely from normal use

CARCINOGENICITY
NTP . . . . . .: N/A
IARC . . . . . .: N/A
OSHA . . . . . .: N/A

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE : None noted

IV. FIRST AID MEASURES:

FIRST AID FOR EYES . . . . . .: Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Get medical attention.

FIRST AID FOR SKIN . . . . . .: Wash with soap and water. Remove contaminated clothing. Seek medical attention if irritation persists.

FIRST AID FOR INHALATION . .: Remove to fresh air. Seek medical attention if irritation persists.

FIRST AID FOR INGESTION . . .: Swallowing less than one ounce will not cause significant harm. For larger amounts, do not induce vomiting, but give one or two glasses of water to drink and get medical attention.

V. FIRE FIGHTING MEASURES:

NFPA HAZARD CLASSIFICATION . . . . . .: HEALTH HAZARD 1
FIRE HAZARD 2
REACTIVITY 0

EXTINGUISHING MEDIA . . . . . .: Dry chemical, carbon dioxide, alcohol or polymer foam.

UNUSUAL FIRE AND EXPLOSION HAZARDS . . . . .: None

SPECIAL FIRE FIGHTING PROCEDURES . . .: None

VI. ACCIDENTAL RELEASE MEASURES:

SPILL OR LEAK PROCEDURES . . . . . .: Wear SCBA, rubber boots, and heavy rubber gloves. Shut off sources of ignition. Dike around spill, absorb on sand or similar, and place in closed containers for disposal. Ventilate area and wash spill site after material pick-up. Avoid run-off into storm sewers and ditches which lead to waterways.

VII. HANDLING AND STORAGE:

STORAGE TEMPERATURE (MIN. / MAX.) . . . . . .: 55 / none °F 13 / none °C

SHELF LIFE . . . . . .: Stable for upwards of 2 years at ambient conditions

SPECIAL SENSITIVITY . . . . . .: Keep from freezing

HANDLING AND STORAGE PRECAUTIONS . .: None

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: TRIACT® 70

EPA Registration Number 7 51-2-598 7

VII. EXPOSURE CONTROLS / PERSONAL PROTECTION:

EYE PROTECTION REQUIREMENTS	The use of safety goggles is recommended
SKIN PROTECTION REQUIREMENTS	The use of chemical-resistant gloves is required
RESPIRATORY / VENTILATION REQUIREMENTS	Use with adequate ventilation
EXPOSURE LIMITS	None

IX. PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL FORM	Liquid	
COLOR	Brown	
ODOR	Garlic	
BOILING POINT RANGE	310 °F	154 °C
MELT POINT / FREEZE RANGE	55 °F	13 °C
FLASH POINT	102 °F	39 °C
AUTO IGNITION	N/A °F	°C
UPPER EXPLOSIVE LIMITS (UEL)	Not determined	
LOWER EXPLOSIVE LIMITS (LEL)	Not determined	
pH	6.5-7.5	
SOLUBILITY IN WATER	Dispersible	
SPECIFIC GRAVITY	0.914 g/ml	
BULK DENSITY	N/A	
% VOLATILE BY WEIGHT	25	
VAPOR PRESSURE at 20 °C	2 mm Hg	
VAPOR DENSITY	0.012	

X. STABILITY AND REACTIVITY:

STABILITY	Stable
HAZARDOUS POLYMERIZATION	Will not occur
INCOMPATIBILITIES	None noted
DECOMPOSITION PRODUCTS	None known
CONDITIONS TO AVOID	None

XI. TOXICOLOGICAL INFORMATION:

Avoid breathing spray mist. In case of eye contact, flush eyes with plenty of water. If on skin, wash with soap and water. If irritation persists, get medical attention.

XII. ECOLOGICAL INFORMATION:

Do not apply directly to water, or to areas where surface water is present, or to inter-tidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters. This product is toxic to bees exposed to direct treatment. Do not apply this product while bees are actively visiting the treatment area.

XIII. DISPOSAL CONSIDERATIONS:

WASTE DISPOSAL METHOD	Rinsewater and unused diluted product may be disposed of on-site or in an approved waste disposal facility

XIV. TRANSPORTATION INFORMATION:

D.O.T. PROPER SHIPPING NAME	N/A
TECHNICAL SHIPPING NAME	Clarified hydrophobic extract of Neem Oil
D.O.T. HAZARD CLASS	N/A
U.N. / N.A. NUMBER	N/A
PRODUCT RQ (lbs.)	N/A
D.O.T. LABEL	N/A
D.O.T. PLACARD	N/A

XV. REGULATORY INFORMATION:

OSHA STATUS	N/A
TSCA STATUS	N/A
CERCLA REPORTABLE QUANTITY	N/A
SARA TITLE III:	
SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES	N/A
SECTION 311/312 HAZARD CATEGORIES	N/A
SECTION 313 TOXIC CHEMICALS	N/A
RCRA STATUS	N/A

STATE REGULATORY INFORMATION:
The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For detail on your regulatory requirements you should contact the appropriate agency in your state.

COMPONENT NAME / CAS NUMBER	**CONCENTRATION**	**STATE CODE**

XVI. OTHER INFORMATION:

REASON FOR ISSUE	Revision
APPROVAL DATE	December 2, 1997
SUPERSEDES DATE	July 31, 1996

To the best of our knowledge, the information contained herein is accurate. However, Olympic Horticultural Products Company does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All material may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

OLYMPIC HORTICULTURAL PRODUCTS™

TRIATHLON™

OLYMPIC HORTICULTURAL PRODUCTS™

Greenhouse Disinfectant — SPECIMEN LABEL

ALGAECIDE, FUNGICIDE, BACTERIOCIDE

ACTIVE INGREDIENTS:	
n-alkyl (60% C_{14}, 30% C_{16}, 5% C_{12}, 5% C_{18}) dimethyl benzyl ammonium chlorides	9.0%
n-alkyl (50% C_{12}, 30% C_{14}, 17% C_{16}, 3% C_{18}) dimethyl ethylbenzyl ammonium chlorides	9.0%
n-alkyl (50% C_{12}, 30% C_{14}, 17% C_{16}, 3% C_{18}) dimethyl benzyl ammonium chlorides	2.0%
INERT INGREDIENTS:	80.0%
	100.0%

EPA Reg. No. 58044-3-59807 **EPA Est. 58044-TX-1**

Net Contents: 1 Gallon or 30 Gallons

STOP - READ THE LABEL BEFORE USE

KEEP OUT OF REACH OF CHILDREN

DANGER · PELIGRO

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.)

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

Causes eye damage and skin irritation. Do not get in eyes, on skin or clothing. Avoid breathing spray mists. Do not use on Feeding and Grazing Grasses.

STATEMENT OF PRACTICAL TREATMENT

In case of contact: immediately flush eyes or skin with plenty of water for at least 15 minutes. **For eyes:** call a physician. **If swallowed:** drink promptly a large quantity of milk, egg whites, gelatin solution, or if these are not available, drink large quantities of water. Avoid alcohol. Call a physician immediately. Remove and wash contaminated clothing before reuse.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsion may be needed.

PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category C on an EPA chemcial resistance category selection chart.

APPLICATORS AND OTHER HANDLERS MUST WEAR:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride, or viton.
- Shoes plus socks.
- Protective eyewear.
- Dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C).

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.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. Do not apply directly to fish bearing waters. 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 waters by cleaning of equipment or disposal of wastes. Avoid application to turf areas actively grazed by waterfowl.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or regional Office of EPA.

GENERAL USE CLASSIFICATION
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.

Olympic Triathlon is multi-purpose disinfectant for the control of fungal, bacterial and viral ornamental plant pathogens, slime-forming fungi and algae and the odors these organisms may cause. Used as directed, the pesticidal residues of this product are biodegraded by normal soil micro-organisms.

TRIATHLON™

One Ounce = Two Tablespoons = Six Teaspoons

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, nurseries, or greenhouses.

DO NOT APPLY THIS PRODUCT THROUGH ANY TYPE OF IRRIGATION SYSTEM.

Greenhouse and Plant Propagation Applications

GREENHOUSE HARD SURFACES: To disinfect hard inanimate surfaces (such as glass, work surfaces, benches, flats, pots, tools, cooler pads, walkways, and walls) add 1/4 fluid ounce (= 1 1/2 teaspoons) Olympic Triathlon to one gallon of water. Apply solution with mop, cloth, sponge, or mechanical sprayer so as to wet thoroughly. Allow to remain wet for ten minutes, and then let air dry.

WORK AREA AND BENCHES: To kill plant disease organisms responsible for root rot, crown rot, botrytis, downy mildew, etc., spray or swab all working surfaces before each work period, and again after work on each plant is completed, with a solution of one tablespoon of Olympic Triathlon to one gallon of water.

FLOWER POTS, BUCKETS AND FLATS: To kill plant disease organisms responsible for root rot, crown rot, anthracnose, mildew, rusts and plant blights, brush or wash used pots, buckets or flats and then soak them in a solution of one tablespoon of Olympic Triathlon to one gallon of water for at least 10 minutes.

CUTTING TOOLS: To disinfect, soak the cutting edges of plant care tools in a solution of one teaspoon of Olympic Triathlon to one gallon of water for at least 10 minutes, and use the wet tool on each plant. Repeat the disinfection soak after use on each plant to kill and prevent transmission of plant diease organisms such as stem rot, root rot, Tobacco Mosaic Virus (TMV), and botrytis. Rinse the plant tools in clean water and oil at the end of each work period.

WALKWAYS: To remove and control heavy algal growth on greenhouse or garden walkways, apply solution of 1/4 fluid ounce (= 1 1/2 teaspoons) Olympic Triathlon in one gallon of water with a mop or mechanical sprayer and let stand for at least one hour. Then scrub or wash dead algae. Apply solution again and let walkway air dry for inhibition of new algal growth. Repeat treatment whenever algal growth returns.

GARDEN BIRD BATHS: DO NOT USE FOR FISH CONTAINERS! To remove build-up of algal growth from an empty bird bath, apply a solution of one tablespoon Olympic Triathlon in one gallon of water with a cloth, sponge or mechanical sprayer and allow to air dry. Brush off dead algae before refilling with water.

EVAPORATIVE COOLERS: To control bacteria, algae, slime forming fungi and certain plant pathogens which may be circulated through the cooler, treat every other week with one ounce of Olympic Triathlon for every 30 gallons of cooler water.

— STORAGE AND DISPOSAL —

PROHIBITIONS: Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited. Do not reuse empty container.

PESTICIDE DISPOSAL: Pesticide spray mixture, or rinse water that cannot be used according to label instructions must be disposed of according to federal or approved state procedures under subtitle C or the Resource Conservation and Recovery Act.

CONTAINER DISPOSAL: Plastic containers - triple rinse (or equivalent). Then offer for recycling or reconditioning, or dispose of in sanitary landfill, or by incineration if allowed by state and local authorities.

GENERAL: Consult Federal, state or local authorities for approved alternative procedures, such as limited open burning.

Olympic Horticultural Products, P.O. Box 230, Mainland, PA 19451 8/98

MATERIAL SAFETY DATA SHEET

OLYMPIC HORTICULTURAL PRODUCTS™

OLYMPIC HORTICULTURAL PRODUCTS, CO.
P.O. BOX 230, MAINLAND, PA 19451
800-659-6745

Approval Date: August 11, 1994

CHEMICAL EMERGENCY
PHONE 800-535-5053

NON-TRANSPORTATION
OLYMPIC EMERGENCY PHONE 800-356-4647
OLYMPIC INFORMATION PHONE 800-659-6745

PRODUCT NAME: TRIATHLON™ GREENHOUSE DISINFECTANT

EPA Registration Number: 58 44-3-598 7

I. PRODUCT INFORMATION

Generic Name . . . . . : Algaecide - Fungicide
Proper Shipping Name . . . . : Liquid Fungicide
Item # 102100 Sub 6 Class 70
Hazard Class . . . . . : Not Regulated
Chemical Family . . . . . : Quaternary
Formula . . . . . : N/A

NPCA Hazardous Materials Identification System:
Health . . . . . : 3
Flammability . . . . . : 0
Reactivity . . . . . : 0
Maximum Personal Protection . . . . . : B

II. HAZARDOUS INGREDIENTS

NAME	CAS#	Wt%	PEL	TWA	STE	CARCINOGEN
NONE						

III. PHYSICAL DATA

Boiling Range . . . . . : 212+
Specific Gravity . . . . . : 0.99
Vapor Pressure . . . . . : 20
Vapor Density . . . . . : >1
% Volatile . . . . . : 80
pH . . . . . : 7.0
Solubility . . . . . : 100%
Evaporation Rate . . . . . : <1
Physical Description . . . . :
Liquid with characteristic odor

IV. FIRE AND EXPLOSION DATA

Flash Point . . . . . : N/A
Special Fire Fighting Procedures . . . . : Not Flammable
Upper Exp Limit . . . . . : N/A
Lower Exp Limit . . . . . : N/A
Extinguishing Media . . . . . : NA
Unusual Fire & Explosion Hazards . . . . . : N/A

V. REACTIVITY DATA

Stability . . . . . : Stable
Hazardous Polymerization . . . . . : Will not occur
Incompatibility . . . . . : Anionic materials
Hazard Decomp Products . . . . . : None known

VI. STORAGE AND HANDLING INFORMATION

Precautions to be taken in Handling & Storage:
Keep out of reach of children. For use by trained personnel only. Keep container closed during storage.
For institutional and industrial use only.

VII. HEALTH HAZARDS

EFFECTS OF OVEREXPOSURE
Primary Route of Entry:
Skin . . . . . : Skin irritant. May cause burning redness or swelling. Prolonged or repeated exposure can cause dermatitis.
Eyes . . . . . : Eye irritant. Liquid and mists may damage the eyes causing corneal injury.
Inhalation . . . . . : Not a significant health hazard under normal use.
Ingestion . . . . . : May be irritating to the gastrointestinal system. Large doses can cause vomiting and diarrhea.

FIRST AID PROCEDURES
Skin . . . . . : Flush exposed area with large quantities of water. Seek medical attention if irritation persists.
Eyes . . . . . : Flush eyes with large quantities of water, holding eyelids open. Seek medical attention.
Inhalation . . . . . : Remove to fresh air.
Ingestion . . . . . : Give large quantities of water. Seek medical attention immediately.

VIII. SPECIAL PROTECTION INFORMATION

Respiratory Information . . . : No special requirements
Protective Gloves . . . . . : Waterproof recommended
Other Protective Equipment . . . . . : N/A
Ventilation . . . . . : Provide local exhaust to keep TLV of Section 2 ingredients below acceptable limit.
Eye Protection . . . . . : Safety glasses recommended

IX. SPILL OR LEAK PROCEDURE

Steps to be taken in case Material is Released or Spilled . : Mop up or otherwise absorb and hold for disposal.
Waste Disposal Method . . . : Any method in accordance with local applicable law.

Prepared According to 29 CFR 1910.1200

AZATIN® XL Biological Insecticide

Chemigation Bulletin

OLYMPIC HORTICULTURAL PRODUCTS™

EPA Reg. No. 70051-27-59807

GENERAL INFORMATION:

Apply this product only through drip (trickle); sprinkler (solid set, lateral move, end tow, side-roll, center pivot, or hand move); flood (basin); furrow; or border irrigation systems. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.

If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

DRIP TRICKLE CHEMIGATION:

1. The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

6. Systems must use a metering pump such as a positive displacement injection pump (i.e., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

7. Dilute the product in water following the label mixing directions. It may be premixed in a supply tank with water, fertilizer, or other appropriate tank-mixed agricultural chemicals. Agitation is necessary. Apply to moderately moist soils. Use volumes that thoroughly wet the soil but that do not cause significant runoff or excessive drip from pots. Application should be in sufficient water and of sufficient duration to apply the recommended rate evenly to the entire treated area.

SPRINKLER CHEMIGATION:

1. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

2. The pesticide injection pipeline must also contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

7. Dilute the product in water following the label mixing directions. It may be premixed in a supply tank with water, fertilizer, or other appropriate tank-mixed agricultural chemicals. Agitation is necessary. Apply when soils are moderately moist. Use volumes that thoroughly wet the foliage and/or soil but that do not cause significant runoff or excessive drip from pots. Application should be in sufficient water and of sufficient duration to apply the recommended rate evenly to the entire treated area.

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

FLOOD (BASIN), FURROW AND BORDER CHEMIGATION:

1. Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential of water source contamination from backflow if water flow stops.

2. Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

   a. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

   b. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

   c. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent liquid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

   d. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

   e. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

   f. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

3. Dilute the product in water following the label mixing directions. It may be premixed in a supply tank with water, fertilizer, or other appropriate tank-mixed agricultural chemicals. Agitation is necessary. Apply to moderately moist soils. Use volumes that thoroughly wet the soil but that do not cause significant runoff. Application should be in sufficient water and of sufficient duration to apply the recommended rate evenly to the entire treated area.

OLYMPIC HORTICULTURAL PRODUCTS™

Manufactured for: Olympic Horticultural Products, P.O. Box 230, Mainland, PA 19451
Customer Service: 800-659-6745 Technical Service: 800-356-4647
Web Site: www.hortnet.com/olympic/

OLYMPIC HORTICULTURAL PRODUCTS

OLYMPIC HORTICULTURAL PRODUCTS COMPANY
D O T SHIPPING INFORMATION (per HM - 181)

PRODUCT	CONTAINER TYPE/SIZE	WEIGHT/CASE	PROPER SHIPPING NAME
AZATIN® XL	6 x 1 Quart (6 quarts/case)	16 lbs.	Insecticides (Not Regulated), NOI-NMFC 102120, Class 60
COMPASS™O 50 WDG	12 x 8 oz (6 lbs/case)	8.5 lbs.	Fungicide (Not Regulated), NOI-NMFC 102120, Class 60
CYCOCEL®	4 x 1 Quart (4 quarts/case)	10 lbs.	Inhibitors, Modifiers, or Regulators, Plant Growth, NMFC 101685, Class 65 (Protect from freezing)
CYCOCEL®	4 x 1 Gallon (4 gallons/case)	38 lbs.	Inhibitors, Modifiers or Regulators, Plant Growth, NMFC 101685, Class 65 (Protect from freezing)
CYCOCEL®	30 Gallon Drum (plastic)	270 lbs.	Inhibitors, Modifiers or Regulators, Plant Growth, NMFC 101685, Class 65 (Protect from freezing)
DECATHLON™ 20 WP	12 x .5 lb (6 lbs/case)	8 lbs.	Insecticides (Not Regulated), NOI-NMFC 102120, Class 60
MARATHON® 1%G	4 x 5 lb (20 lbs/case)	23 lbs.	Insecticides (Not Regulated), NOI-NMFC 102120, Class 60
MARATHON® 60 WP in Water Soluble Packaging	4 x 4 x 5 x 20 gram (1600 grams/case)	7.5 lbs.	Insecticides (Not Regulated), NOI-NMFC 102120, Class 60
MARATHON® II	12 x 250 mL (12 bottles/case)	10 lbs.	Insecticides (Not Regulated), NOI-NMFC 102120, Class 60
INSECTICIDAL SOAP 49.52 CF	2 x 2.5 Gallon (5 gals/case)	48 lbs.	Flammable Liquid, N.O.S. (contains Ethanol), 3, UN 1993, PG III NMFC 102100, Class 77.5 Labels: Flammable Placards: Flammable
INSECTICIDAL SOAP 49.52 CF	30 Gallon Drum (plastic)	284 lbs.	Flammable Liquid, N.O.S. (contains Ethanol), 3, UN 1993, PG III NMFC 102100, Class 77.5 Labels: Flammable Placards: Flammable
PYLON® miticide	6 x 1 Pint (6 pints/case)	7 lbs.	Insecticides (Not Regulated), NOI-NMFC 102120, Class 60
SCOUT STICKY TRAP™ Yellow or Blue	20 x 1 ea. (300/case)	3 lbs.	Insecticides, Fungicides, Insect or Animal Repellent or Vermin Exterminators, or Dip, Animal or Poultry, NOI other than poison NMFC 102120, Class 60
STRIKE® 50 WDG	12 x .5 lb (6 lbs/case)	7 lbs.	Fungicides (Not Regulated), NOI-NMFC 102120 Class 60
SUFFUSION™ Granules	50 lb. pail	51 lbs.	Adhesive, Adjuvants, Spreaders or Stickers, NMFC 4610, Class 60
SUFFUSION™ Liquid	2 x 2.5 Gallon (5 gals/case)	22 lbs.	Adhesive, Adjuvants, Spreaders or Stickers, NMFC 4610, Class 60
SUFFUSION™ Liquid	30 Gallon Drum (plastic)	250 lbs.	Adhesive, Adjuvants, Spreaders or Stickers, NMFC 4610, Class 60
TRIACT® 70	2 x 2.5 Gallon (6 gals/case)	41 lbs.	Insecticides (Not Regulated), NMFC 102120, Class 60
TRIATHLON™	6 x 1 Gallon (6 gals/case)	55 lbs.	Liquid Fungicide, NMFC 102100, Class 60
TRIATHLON™	30 Gallon Drum (plastic)	290 lbs.	Liquid Fungicide, NMFC 102100, Class 60

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OLYMPIC HORTICULTURAL PRODUCTS

OLYMPIC HORTICULTURAL PRODUCTS
QUICK REFERENCE FOR WORKER PROTECTION STANDARDS

Product Name (Signal Word)	Active Ingredient(s)	EPA Reg. No.	Restricted-Entry Intervals	Personal Protective Equipment (PPE)	Early-Entry PPE	Worker Notification	
						Oral	Posted
Azatin® XL Insecticide (CAUTION)	azadirachtin	70051-10-59807	4 hrs	Long-sleeved shirt and long pants Chemical-resistant gloves such as barrier laminate or Viton (≥ 14mL) Shoes plus socks Protective eyewear	Long-sleeved shirt Chemical-resistant gloves such as barrier laminate or Viton (≥14mL) Shoes plus socks Protective eyewear		NR
Compass™ O 50 WDG fungicide (CAUTION)	trifloxystrobin	3125-560-59807	12 hrs	Long-sleeved shirt and long pants Water proof gloves Shoes plus socks	Coveralls Chemical-resistant gloves Shoes plus socks		NR
Cycocel® Plant Growth Regulant (CAUTION)	chlormequat	241-74-59807	12 hrs	Long-sleeved shirt & long pants Waterproof gloves Shoes plus socks	Coveralls Waterproof gloves Shoes plus socks		NR
Decathlon™ 20 WP Insecticide (CAUTION)	cyfluthrin	3125-430-59807	12 hrs	Long-sleeved shirt and long pants Waterproof gloves Shoes plus socks	Coveralls Waterproof gloves Shoes plus socks		NR
Insecticidal Soap 49.52 CF Insecticide (WARNING)	potassium salts of fatty acids	36488-45-59807	12 hrs	**Applicators and handlers of diluted product must wear:** Long pants Long-sleeved shirt Shoes plus socks Protective gloves Protective eyewear for overhead exposure **Mixers and loaders of concentrated product must wear:** Coveralls over short-sleeved shirt and short pants Chemical-resistant gloves Chemical-resistant footwear plus socks Protective eyewear Chemical-resistant headgear for overhead exposure Chemical-resistant apron for cleaning equipment, mixing or loading	Long pants Long-sleeved shirt Shoes plus socks Protective gloves		NR
Marathon® 1% Granular Insecticide (CAUTION)	imidacloprid	3125-452-59807	12 hrs	Long-sleeved shirt and long pants Water proof gloves Shoes plus socks	Coveralls Waterproof gloves Shoes plus socks		NR
Marathon® 60 WP in Water Soluble Packaging Insecticide (CAUTION)	imidacloprid	3125-492-59807	12 hrs	Long-sleeved shirt and long pants Water proof gloves Shoes plus socks	Coveralls Waterproof gloves Shoes plus socks		NR
Marathon® II Insecticide (CAUTION)	imidacloprid	3125-549-59807	12 hrs	Long-sleeved shirt and long pants Water proof gloves Shoes plus socks	Coveralls Waterproof gloves Shoes plus socks		NR
Pylon® Miticide (CAUTION)	chlorfenapyr	241-374-59807	12 hrs	Long-sleeved shirt and long pants Chemical-resistant gloves Shoes plus socks	Coveralls Chemical-resistant gloves Shoes plus socks		NR
Strike® 50 WDG Fungicide (CAUTION)	triazole	3125-529-59807	12 hrs	Long-sleeved shirt and long pants Shoes plus socks	Coveralls Waterproof gloves Shoes plus socks		NR
Suffusion™ Granules Wetting, penetrating re-wetting agent (WARNING)	alkoxyether surfactants	N/A	0 hrs	Long-sleeved shirt Coveralls or long pants Chemical resistant gloves Goggles or facial splash shield	Coveralls Chemical resistant gloves Shoes plus socks Protective eyewear		NR
Suffusion™ Liquid Wetting, penetrating re-wetting agent (WARNING)	alkoxyether surfactants	N/A	0 hrs	Long-sleeved shirt Coveralls or long pants Chemical resistant gloves Goggles or facial splash shield	Coveralls Chemical resistant gloves Shoes plus socks Protective eyewear		NR
Triact® 70 Fungicide, Miticide, Insecticide (CAUTION)	clarified hydrophobic extract of neem oil	70051-2-59807	4 hrs	Long-sleeved shirt and long pants Chemical resistant gloves Shoes plus socks	Coveralls Chemical resistant gloves Shoes plus socks		NR
Triathlon™ Disinfectant (DANGER)	quaternary	58044-3-59807	0 hrs	Long-sleeved shirt and long pants Chemical-resistant gloves Shoes plus socks Protective eyewear Dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C)	Coveralls Chemical-resistant gloves Shoes plus socks Protective eyewear		NR

NR = Not Required

FUNGICIDE USAGE CHART

OLYMPIC HORTICULTURAL PRODUCTS

Fungicides	RATES		Algaecide	Bacteriocide	Anthracnose	Black Spot	Botrytis	Downy Mildew	Gray Mold	Powdery Mildew	Leaf Spots	Leaf Blights	Myrothecium	Rhizoctonia Root Rot	Rusts	Tip Blight	Root Rot	Crown Rot	Ovulinia	Scab	Sclerotinia	Collectotrichum	Cerocspora	Didymellina	Didymascella	Entomosporium	PROPERTIES			
	Qty / gal	Qty / 100 gal																									**Disinfectant**	**Curative**	**Systemic**	**Contact**
Compass™ O 50WDG	.3 - 1.1 grams	1 - 4 oz.			X	X	X	X		X	X		X	X	X					X								X		X
Strike® 50 WDG	1/8 - 1/4 tsp.	1/4 - 1/2 lb.							X	X									X		X	X	X	X	X	X		X	X	
Strike® 50 WDG Winter	1 oz. / 100 gals.								X	X	X	X			X	X												X	X	
Strike® 50 WDG Summer	2 oz. / 100 gals.								X	X																		X	X	
Triact® 70 (Greenhouse / Flowering Plants)	19 - 38 mL	1/2 - 1 gal.			X	X	X	X		X	X				X	X				X								X		X
Triact® 70 (Woody Plants)	38 - 76 mL	1 - 2 gals.			X	X	X	X		X	X				X	X				X								X		X
Triathlon™	See Label		X	X	X		X		X	X					X		X	X									X	X		X

Please refer to the actual product label for specific rates, instructions, and cautions.

Compass is a trademark of Bayer Corporation. Strike is registered trademark and Triathlon a trademark of Olympic Horticultural Products. Triact is a registered trademark of Certis USA.

INSECTICIDE USAGE CHART

OLYMPIC HORTICULTURAL PRODUCTS™

	Rate per 1 gal	Rate per 100 gal	Adelgids	Aphid	Apopka Weevil	Armyworm	Ants	Bagworms	Beetles (Adults)	Beetles (Larvae)	Black Vine Weevil	Boxelder Bugs	Cankerworms	Caterpillars	Citrus Root Weevil	Cutworms	Elm Leaf Beetles	Flies	Fungus Gnats	Japanese Beetle	Lacebugs	Leaf Hoppers	Leafminers	Leaf Rollers	Leaf Skeletonizers	Mealybugs	Midges	Mites	Moth Larvae	Orchid Weevil	Pine Shoot Moth	Pine Tip Moth	Plantbugs	Sawfly Larvae	Scale & Scale Crawlers	Sowbugs	Spidermites	Spidermite Eggs	Spittle Bugs	Tent Caterpillars	Thrips	Tussock Moth Larvae	Webworm	Whiteflies	White Grub Larvae
Azatin® XL	1.5 - 3.0 mL	5 to 10 oz.												L		L							L		L																			
Azatin® XL	1.5 - 5.0 mL	5 to 16 oz.				L				L				L																														
Azatin® XL	2.4 mL	8 oz.																	D																										
Azatin® XL	3.0 - 5.0 mL	10 to 16 oz.		S		L		L					L	L		L						L	L	L										L									L	
Azatin® XL	3.0 - 6.0 mL	10 to 21 oz.												L												L																	L			
Azatin® XL	3.0 - 5.0 mL	12 to 16 oz.		S																																					L				
Azatin® XL	6.2 mL	21 oz.									L																																			
Decathlon™ 20 WP	1/5 tsp.	1.3 oz.				X		X					X	X		X		X	X		X						X				X	X		X		X						X	X		
Decathlon™ 20 WP	1/4 tsp.	1.9 oz.	X	X								X								X		X		X	X	X			X			X		X						X			X	
Decathlon™ 20 WP in WSP		50 grams (per 138 gal)				X		X					X	X		X		X	X		X						X				X	X		X		X						X	X		
Decathlon™ 20 WP in WSP		50 grams (per 92 gal)	X	X								X								X		X		X	X	X			X			X		X						X			X	
Insecticidal Soap	2.5 oz.	2 gallon	X	X																	X	X				X							X	X	X		X			X	X			X	
Marathon® 1%G	see label	see label	D	D	D						D				D					D	D					D																D			D	
Marathon® 60 WP in WSP	see Tech Bulletin	see Tech Bulletin	D	D	D						D				D					D	D					D																D			D	
Marathon® II	.5 mL	50 mL	X	X													X			X	X	X	X			X							X	X							X			X	X
Pylon®	.8 - 1.5 mL	2.6 - 5.2 mL																										X							X										
Triact® 70 (Greenhouse or Flowering Plant	19 - 38 mL	see label		X																		X				X									X		X	X					X	
Triact® 70 (Woody Plants)	38 - 76 mL	1 - 2 gallons		X																		X				X									X		X	X					X	

General Spray = X **Drench = D** **Supression = S** **Larvae= L**

Azatin and Triact are registered trademarks of Certis USA Pylon is a registered trademark of BASF
Decathlon is a trademark and Marathon is a registered trademark of Olympic Horticultural Products

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OLYMPIC HORTICULTURAL PRODUCTS™

Marathon® 60 WP in WSP

Irrigation application strategies

Pot Size Treated	Injection Ratio	Number of 20-gram packets/unit of stock	Ounces dilution/pot	Number of Pots Treated
4 1/2"	1:100	3 pkts/1 gallon water	3 oz./4 1/2" pot	4,050
	1:100	1 pkt/40 oz. water	3 oz./4 1/2" pot	1,350
	1:15 (Hozon)	1 pkt/2 gallons water	3 oz./4 1/2" pot	1,350
6"	1:100	5 pkts/2 gallons water	5 oz./6" pot	5,000
	1:100	1 pkt/51 oz. water	5 oz./6" pot	1,000
	1:15 (Hozon)	2 pkts/5 gallons water	5 oz./6" pot	2,000
	1:15 (Hozon)	1 pkt/2.5 gallons water	5 oz./6" pot	1,000
8"HB	1:100	3 pkts/1 gallon water	7 oz./8" HB	2,250
	1:100	1 pkt/41 oz. water	7 oz./8" HB	750
	1:15 (Hozon)	1 pkt/3 gallons water	8 oz./8" HB	750
10"HB	1:100	3 pkts/1 gallon water	9 oz./10"HB	1,800
	1:100	1 pkt/1 gallon water	9 oz./10"HB	600
	1:15 (Hozon)	1 pkt/3 gallon water	9 oz./10"HB	600

Marathon® 60 WP in WSP for "Hose End" Applicator

"Hose End" Applicator: 1:15 Proportioner

Mix one packet of Marathon® 60 WP in 1.56 gallons of water (200 ounces) of stock solution to treat 1,000 six-inch containers at a 1:15 ratio. Apply 3 ounces of drench per six-inch container.

Example:

1,000 six-inch containers x 3 ounces of drench per container = 3,000 ounces of total drench volume ÷ 15 (1:15 ratio) = 200 ounces of stock solution ÷ 128 ounces per gallon = 1.56 gallons of stock solution.

"Hose End" Applicator: 1:16 Proportioner

Mix one packet of Marathon® 60 WP in 1.47 gallons of water (188 ounces) of stock solution to treat 1,000 six-inch containers at a 1:16 ratio. Apply 3 ounces of drench per six-inch container.

Example:

1,000 six-inch containers x 3 ounces of drench per container = 3,000 ounces of total drench volume ÷ 16 (1:16 ratio) = 188 ounces of stock solution ÷ 128 ounces per gallon = 1.47 gallons of stock solution.

Note: Apply one-half ounce of drench solution per one inch of container diameter. **Example:** Apply three ounces of drench solution per six inch container; four ounces of drench solution per eight inch container; five ounces of drench solution per ten inch container, etc.

Always read and follow label directions.

Customer Service: 800-659-6745 **Technical Service:** 800-356-4647

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OLYMPIC HORTICULTURAL PRODUCTS™

PESTICIDE DILUTIONS

The recommended rate for many commercial products is given in either gallons of product or product per 100 gallons of water. The following table can be used to determine the amount of commercial product to use when mixing less than 100 gallons of material.

Product need to mix						
100 gallons	**25 gallons**	**20 gallons**	**15 gallons**	**10 gallons**	**5 gallons**	**1 gallon**
Liquid Formulations						
2 gal.	64 oz.	51 3/16 oz.	38 1/2 oz.	25 1/2 oz.	12 7/8 oz.	2 1/2 oz.
1 gal.	32 oz.	25 6/16 oz.	19 3/16 oz.	12 3/4 oz.	6 1/2 oz.	1 1/4 oz.
2 qts.	16 oz.	12 13/16 oz.	9 9/16 oz.	6 3/8 oz.	3 1/4 oz.	5/8 oz.
1 qt.	8 oz.	6 3/8 oz.	4 13/16 oz.	3 3/16 oz.	1 9/16 oz.	5/16 oz.
1 1/2 pts.	6 oz.	4 13/16 oz.	3 9/16 oz.	2 3/8 oz.	1 1/4 oz.	1/4 oz.
1 pt.	4 oz.	3 3/16 oz.	2 1/8 oz.	1 9/16 oz.	7/8 oz.	3/16 oz.
8 oz.	2 oz.	1 9/16 oz.	1 3/16 oz	13/16 oz.	7/16 oz.	1/2 tsp.
4 oz.	1 oz.	13/16 oz.	9/16 oz.	3/8 oz.	1/4 oz.	1/4 tsp.
Solid Formulations						
5 lbs.	20 oz.	16 oz.	12 oz.	8 oz.	4 oz.	4 4/5 tsp.
4 lbs.	16 oz.	12 13/16 oz.	9 9/16 oz.	6 3/8 oz.	3 1/4 oz.	3 4/5 tsp.
3 lbs.	12 oz.	9 9/16 oz.	7 3/16 oz.	4 13/16 oz.	2 3/8 oz.	2 2/5 tsp.
2 lbs.	8 oz.	6 3/8 oz.	4 3/8 oz.	3 3/16 oz.	1 3/4 oz.	2 tsp.
1 lb.	4 oz.	3 3/16 oz.	2 3/8 oz.	1 9/16 oz.	7/8 oz.	1 tsp.
8 oz.	2 oz.	1 9/16 oz	1 13/16 oz	13/16 oz.	3/8 oz.	1/2 tsp.
4 oz.	1 oz.	13/16 oz.	9/16 oz.	3/8 oz.	3/16 oz.	1/4 tsp.

Pot Volumes and Measurements

Pot diameter	Pot height	Trade designation	Actual dimensions (diameter x height)	Pot volume in cubic inches
6"	5"	1 gal. std.	6 1/2" x 6"	140
6" tub		6" tub	6 1/2" x 5"	
8"	7"	2 gal.	8" x 7"	350
9"	8"			512
10"	9"	3 gal.	10" x 9 1/2"	71
11"	10"			950
12"		4 gal.	11" x 10 1/2"	
13"	11"			1,463
4"		7 gal.	13 1/2" x 12"	
17"	14"	10 gal.	17" x 15"	3,178

Potted Plants required per 100 square ft. (various spacings on center*)

Pot Spacing	Plants per 100 sq. ft.	Pot Spacing	Plants per 100 sq. ft.
4 x 4	900	18 x 18	45
6 x 6	400	24 x 24	25
8 x 8	225	30 x 30	16
9 x 9	178	36 x 36	11.11
10 x 10*	144*	48 x 48	6.25
12 x 12	100	72 x 72	2.78

*Example: If you measure and mark every 10 inches and place and center a plant at this spot, it would take 144 plants to fill 100 square feet.

Cubic inches to cubic feet

Cubic Inches	Cubic Feet
1,728 =	1
1,296 =	3/4
864 =	1/2
519 =	1/3
432 =	1/4

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OLYMPIC HORTICULTURAL PRODUCTS™

WEIGHTS AND MEASURES CHARTS

AMERICAN LIQUID MEASURE

1 teaspoon (tsp) = 80 drops
1 tablespoon (tbs) = 3 teaspoons
1 fluid ounce (fl oz) = 2 tablespoons
1 cup = 8 fluid ounces
1 pint (pt) = 2 cups = 16 fluid ounces
1 quart (qt) = 2 pints = 32 fluid ounces
1 gallon (gal) = 4 quarts = 8 pints = 128 fluid ounces

AMERICAN DRY MEASURE

3 teaspoons = 1 tablespoon
16 tablespoons = 1 cup
1 pound (lb) = 16 ounces

LINEAR MEASURE

1 foot (ft) = 12 inches
1 yard (yd) = 3 feet
1 mile = 5,280 ft = 1,760 yd

SURFACE MEASURE

1 square foot (sq ft) = 144 square inches
1 square yard (sq yd) = 9 square feet
1 acre = 43,560 sq ft = 4,840 sq yds

VOLUME MEASURE

1 cubic foot (cu ft) = 1,728 cubic inches (cu in) = 7.48 gallons
1 cubic yard = 27 cubic feet

— CONVERSION TABLE —

1 kilogram (kg) = 1000 grams (g) = 2.2 lbs
1 gram (g) = 1000 milligrams (mg) = .035 ounce
1 liter = 1000 milliliters (ml) = 1.057 quarts
1 milliliter = .034 fluid ounces

1 pound = 453.6 grams
1 ounce = 28.35 grams

1 gallon = 4 quarts = 3.785 liters
1 quart = 2 pints = .946 liters
1 pint = .473 liters
1 ounce = 29.6 milliliters

1 gallon of water = 8.34 lbs (approximately)

1 part per million (ppm) = 1 milligram/liter
= 1 milligram/kilogram
= .0001 per cent
= .013 ounces in 100 gallons of water

1 per cent = 10,000 ppm
= 10 grams per liter
= 10 grams per kilogram
= 1.33 ounces by weight per gallon of water
= 8.34 pounds/100 gallons of water

DILUTION OF LIQUID PESTICIDES AT VARIOUS CONCENTRATIONS

DILUTION	1 GAL	3 GAL	5 GAL	15 GAL
1 - 100	2 tbs+2 tsp	1/2 cup	3/4 cup+5 tsp	1 cup+3 tbs
1 - 200	4 tsp	1/4 cup	6 1/2 tbs	1/2 cup+2 tbs
1 - 400	2 tsp	2 tbs	3 tbs	4 tbs+2 1/2 tsp
1 - 800	1 tsp	1 tbs	1 tbs+ 2 tsp	3 tbs+2 1/3 tsp
1 - 1,000	3/4 tsp	2 1/4 tsp	1 tbs+1 tsp	1 pt+1/2 cup

Equivalent quantities of dry materials (wettable powders) for various quantities of water based on recommended pounds to 100 gallons.

Water	Quantity of Material					
100 gals	1 lb	2 lb	3 lb	4 lb	5 lb	6 lb
25 gals	4 oz	8 oz	12 oz	1 lb	1 1/4 lb	1 1/2 lb
5 gals	3 tbs	1 1/2 oz	2 1/2 oz	3 1/4 oz	4 oz	5 oz
1 gal	1 tsp	2 tsp	1 tbs	4 tsp	5 tsp	2 tbs

Equivalent quantities of liquid materials (emulsion concentrates, etc.) for various quantities of water based on pints per 100 gallons.

Water	Quantity of Material					
100 gals	1/2 pint	1 pint	2 pints	3 pints	4 pints	5 pints
25 gals	2 fl oz	4 fl oz	8 fl oz	12 fl oz	1 pint	1 1/4 pint
5 gals	1 tbs	1 fl oz	2 fl oz	2 1/2 fl oz	3 fl oz	4 fl oz
1 gal	1/2 tsp	1 tsp	2 tsp	3 tsp	4 tsp	5 tsp

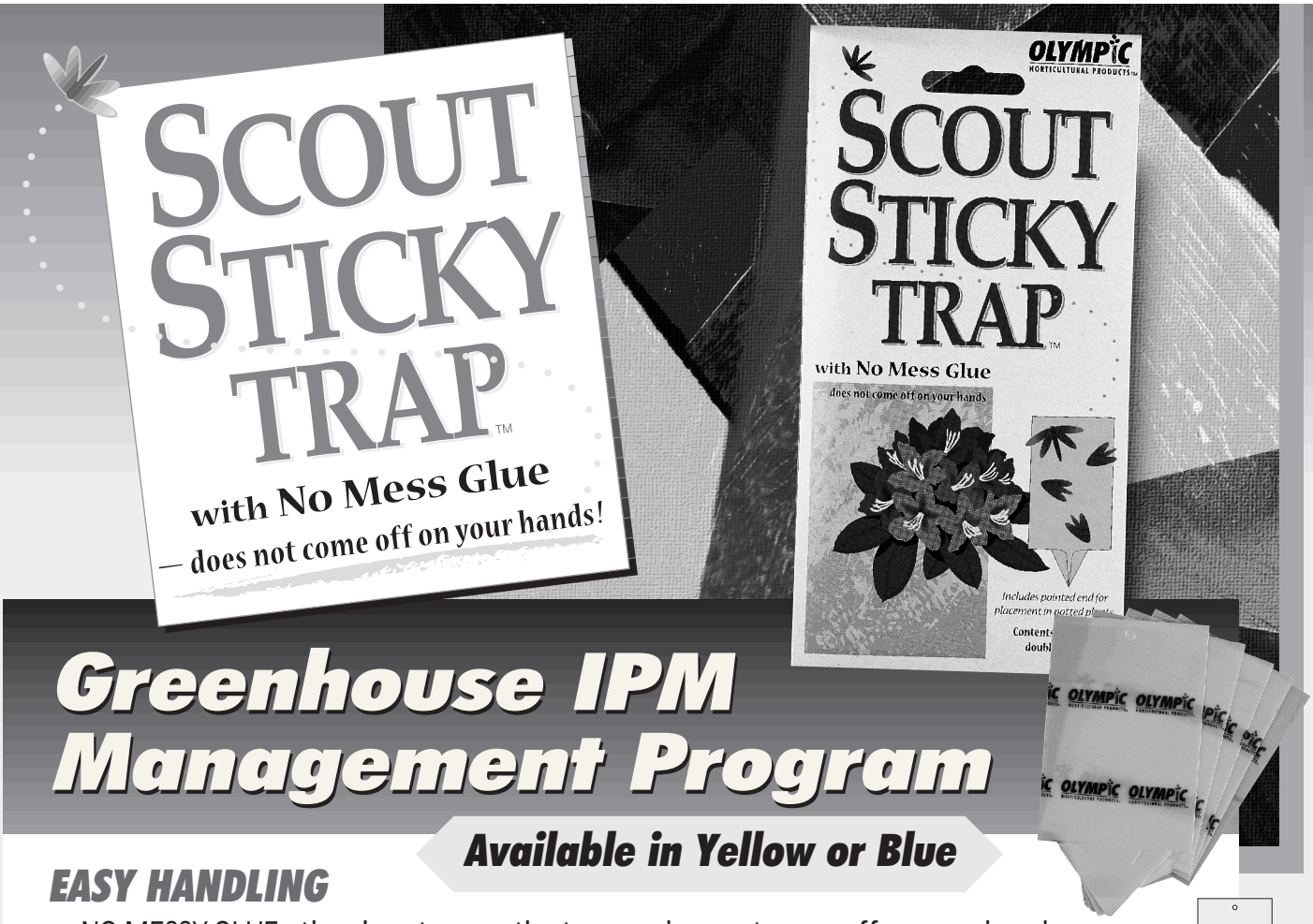
CONVERSION TABLES FOR USE OF MATERIALS ON SMALL AREAS

LIQUID MATERIALS

RATE/ACRE	RATE/1000 SQ FT	RATE/100 SQ FT
1 pint	3/4 tbs	1/4 tsp
1 quart	1 1/2 tbs	1/2 tsp
1 gallon	6 tbs	2 tsp
25 gals	4 1/2 pints	1 cup
50 gals	4 1/2 quarts	1 pint
100 gals	9 quarts	1 quart
200 gals	4 1/2 gals	2 quarts
300 gals	6 3/4 gals	3 quarts
400 gals	9 gals	1 gallon
500 gals	11 1/4 gals	1 1/4 gals

DRY MATERIALS

RATE/ACRE	RATE/1000 SQ FT	RATE/100 SQ FT
1 lb	2 1/2 tsp	1/4 tsp
3 lbs	2 1/4 tbs	3/4 tsp
4 lbs	3 tbs	1 tsp
5 lbs	4 tbs	1 1/4 tsp
10 lbs	1/2 cup	2 tsp
100 lbs	2 1/4 lbs	1/4 lb
200 lbs	4 1/2 lbs	1/2 lb
300 lbs	6 3/4 lbs	3/4 lb
400 lbs	9 lbs	1 lb
500 lbs	11 1/4 lbs	1 1/4 lbs

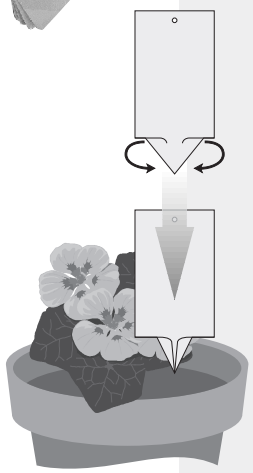


Greenhouse IPM Management Program

Available in Yellow or Blue

EASY HANDLING

- NO MESSY GLUE - the glue stays on the trap — does not come off on your hands.
- Pre-punched hole — easy to hang above the canopy.
- Pointed end — for placement in potted plants.

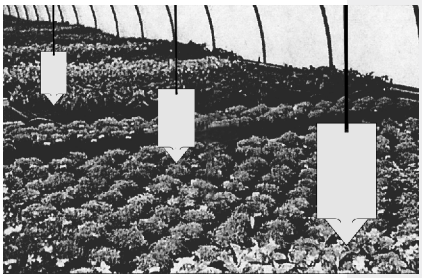


USE SCOUT STICKY TRAPS™ in IPM PROGRAMS

- To aid in insect identification and life stage to target pesticide application.
- Determine areas of the greenhouse where insect populations are entering.
- To track hot spots and population trends to develop a history of monitoring information to improve pest control strategies.
- The special aurolin yellow color will attract flying aphids, fungus gnats, whiteflies, leafminers and other flying insects.
- Also available in blue for thrips.

MONITOR LOCATIONS for PEST PROBLEMS

- near ventilators, doors and passage ways into the greenhouse
- below the benches
- at the gutter levels
- near indicator plants or plants known to show symptoms early



15 traps per sleeve, 20 sleeves per box

P.O. Box 1885 Bradenton, FL 34206-1885
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Fax: 888-647-4329
web site: http://www.hortnet.com/olympic/
e-mail: olympic@hortnet.com

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