



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs
Registration Division (7505P)
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

EPA Reg. Number:

5481-628

Date of Issuance:

12/20/18

NOTICE OF PESTICIDE:

Registration
 Reregistration
(under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

Mandolin

Name and Address of Registrant (include ZIP Code):

Julie Porter
AMVAC Chemical Corporation
4695 MacArthur Court, Suite 1200
Newport Beach, CA 92660

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product when the Agency requires all registrants of similar products to submit such data.
2. Make the following label changes before you release the product for shipment:
 - Revise the EPA Registration Number to read, "EPA Reg. No. 5481-628."
3. Submit one copy of the revised final printed label for the record before you release the product for shipment.

Signature of Approving Official:

Shaja B. Joyner, Product Manager 20
Fungicide-Herbicide Branch
Registration Division 7505P

Date:

12/20/18

EPA Form 8570-6

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 11/19/2018

If you have any questions, please contact Nathan Mellor by phone at 703-347-8562, or via email at mellor.nathan@epa.gov

Enclosure

Mandolin™

A PLANT GROWTH REGULATOR FOR THINNING CITRUS AND OLIVES

ACTIVE INGREDIENT:

1-Naphthaleneacetic Acid, Potassium Salt 24.2%

INERT INGREDIENTS:..... 75.8%

TOTAL: 100.0%

Equivalent to 20.2% 1-Naphthaleneacetic Acid (1-NAA) or 830 grams (1.83 lbs.) 1-NAA per gallon.

KEEP OUT OF REACH OF CHILDREN

CAUTION

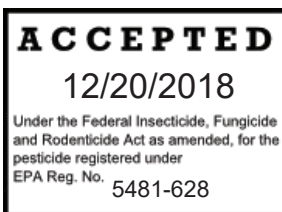
Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

FIRST AID	
If on skin or clothing:	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15-20 minutes.• Call a poison control center or doctor for treatment advice.
If in eyes:	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15-20 minutes.• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.• Call a poison control center or doctor for treatment advice.
If swallowed:	<ul style="list-style-type: none">• Call a poison control center or doctor immediately for treatment advice.• Have person sip a glass of water if able to swallow.• Do not induce vomiting unless told to do so by a poison control center or doctor.• Do not give anything by mouth to an unconscious person.
If inhaled:	<ul style="list-style-type: none">• Move person to fresh air.• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.• Call a poison control center or doctor for further treatment advice.
EMERGENCY INFORMATION	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. FOR THE FOLLOWING EMERGENCIES, PHONE 24 HOURS A DAY: For Medical Emergencies phone:.....1-888-681-4261 For Transportation Emergencies, including spill, leak or fire, phone: CHEMTREC®1-800-424-9300 For Product Use Information phone: AMVAC®.....1-888-462-6822	

SEE SIDE/BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND DIRECTIONS FOR USE.

EPA Reg. No. 5481-628

EPA Est. No. _____



Net Weight:

As Marked on Container



AMVAC Chemical Corporation
4695 MacArthur Court, Suite 1200
Newport Beach, CA 92660 U.S.A.
1-888-462-6822

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if absorbed through skin. Causes moderate eye irritation.

Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Wear long-sleeved shirt and long pants, socks, shoes, and (waterproof or chemical-resistant) gloves. Remove and wash contaminated clothing before reuse. Wear protective eyewear, if appropriate.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

All mixers, loaders, applicators, flaggers and other handlers must wear:

- Long-sleeved shirt and long pants,
- Shoes plus socks
- Chemical-resistant gloves (except for pilots), and
- Protective eyewear

User Safety Requirements

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water by disposal of equipment washwaters or rinsate. Do not contaminate irrigation ditches or water used for irrigation or domestic purposes. Do not apply when conditions favor drift from treated areas.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with this 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 48 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, including plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks
- Protective eyewear

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 persons may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

MANDOLIN thins the fruit of citrus and olives to provide an adequate return bloom the following season.

MANDOLIN is an auxin-type hormone product for use in fruit production. The response of fruit trees to application may be varied in different years. In reviewing the results, the grower needs to consider the wide variation in varieties, climatic factors, dosage, tree vigor, and fruit set before choosing the desired rate and correct timing for application.

Apply in sufficient water for good even coverage with your specific equipment. Application can be made in as little as 50 gallons of water per acre and up to 400 gallons of water per acre and is highly dependent on type of equipment used and density of the foliage. Uniform and even distribution of the spray is imperative. For rates and application timing for your specific variety and location, consult your local Extension Specialist for directions.

A variety of factors including weather conditions (e.g., wind directions, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial, airblast) can influence pesticide drift. The applicator and grower must evaluate all factors and make appropriate adjustments when applying this product.

Spray Drift Management

Wind speed restrictions:

Do not apply when wind speeds are greater than 10 mph at the application site.

Specific language for orchard airblast:

Sprays must be directed into the crop canopy.

Outward pointing nozzles must be turned off at row ends and when spraying outer rows.

For ground based applications and aerial applications, use only medium or coarser spray droplets (or nozzles) according to ASABE (S572) definition for standard nozzles.

Mandolin Compatibility with Other Products

MANDOLIN is compatible with a wide range of pesticides. The mixture must be field tested on a small scale to ensure the product performance and plant safety before large-scale field use. Observe all cautions and limitations on labeling of all products used in mixtures. **DO NOT APPLY TANK MIX COMBINATIONS UNLESS YOUR PREVIOUS EXPERIENCE INDICATES THE MIXTURE IS**

EFFECTIVE AND WILL NOT RESULT IN EXCESSIVE LOSS OF FRUIT OR LEAVES OR PLANT INJURY.

It is the pesticide applicator’s responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions, limitations and directions for use on all product labels involved in tank mixing. Applicators must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

CHEMICAL THINNING

Olives

APPLICATION TIMING. Spray when young fruits are 1/8 to 3/16 inch in diameter or 12 to 18 days after full bloom. For example, apply a solution of 120 ppm 1-NAA by adding 7.0 fl. oz. of MANDOLIN and a wetting agent to 100 gallons of water 12 days after full bloom. The spray concentration is determined by adjusting the 1-NAA rate upward by 10 ppm for each day following full bloom during the thinning period.

Restrictions:

- Do not exceed 24 fl.oz. (0.33 pounds AI equivalent) per acre per treatment or per year.
- Do not apply more than one application per year.
- Do not use in a greenhouse.
- Do not apply this product through any type of irrigation system.

Precautions:

- Severe over-thinning may result from application to trees during hot and dry conditions.
- Thinning is effective on all varieties except Sevillano.
- Applying during bloom will cause loss of harvest.

Mandarins (Tangerines, Tangelos, Tangors and Clementines)

To thin excessive fruit load and increase average fruit size during an “on-crop” year, spray on foliage at 200-300 ppm of 1-naphthaleneacetic acid (NAA) in spray volumes of 150 to 300 gallons per acre (GPA). (See Table 1). The spray must be applied to thoroughly cover the entire fruiting area of the tree. Apply when the fruits are in an early stage of development following bloom (5 to 20 mm in diameter) and near the normal period of “June Drop”.

Table 1. Amount of MANDOLIN required for a desired NAA concentration (ppm) in the spray solution at 150-300 gallons per acre (GPA) spray volumes.

Concentration of NAA in spray solution (ppm)	Spray Volume (GPA)			
	150	200	250	300
	Amount of Mandolin (fl. oz./acre)			
200	17.5	23.3	29.2	35.0
300	26.3	35.1	43.8	52.6

APPLICATION Instructions:

- MANDOLIN must be applied for fruit thinning during a year of heavy crop load. The grower must determine where trees are in the alternate bearing cycle by conducting fruit counts or by other means prior to making application decisions. More specific guidelines may be obtained from the local citrus extension specialist.

Heavy “On” Bearing Year	1000-1500 Fruit Count per Tree
Heavy “Off” Bearing Year	100-500 Fruit Count per Tree

*For a tree count of approximately 302 trees per acre.

- Since the effectiveness of thinning and fruit sizing by MANDOLIN depends on cultivar, application rate, spray coverage, fruit size, tree condition, and air temperature, the grower must determine the optimal rate and timing for the application. Best results are obtained when applications are made around normal “June-drop”.
- Higher thinning activity can be expected when MANDOLIN is applied during hot and dry conditions. Best results are likely to occur at a temperature around 85°F. Higher temperatures may cause increased thinning.
- Prior to wide-scale adoption, test in a small area.

Note: Use of a non-ionic adjuvant in the tank mix may improve spray coverage and overall results.

Restrictions:

- Do not apply within 90 days of harvest (PHI 90 days).
- Do not exceed 52.6 fl.oz. (0.75 pounds AI equivalent) per acre per treatment or per year.
- Do not apply more than one application per year.
- Before mixing with other crop protection chemicals or fertilizers, consult your local citrus extension specialist, PCA or crop consultant. Perform a jar test to confirm physical compatibility. If tank mixing is maintained, it is the pesticide user’s responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.
- Do not use in a greenhouse.
- Do not apply this product through any type of irrigation system.

Oranges

Spray at the rate of 100 to 500 ppm (6 fl. oz. per 100 gallons water equals 100 ppm 1-NAA). The degree of thinning obtained with MANDOLIN is highly variable and temperature related. Severe over-thinning may result from application to trees during hot, dry conditions. The grower must determine a suitable concentration and time of application for his cultivars and location.

Concentrations in the 100 to 150 ppm ranges must be tried and applications made when the fruits are in an early stage of development (5 to 20 mm in diameter) and near the normal period of "June drop" (in Florida the period of natural drop occurs in May). Higher thinning activity must be expected during hot weather. Therefore, lower concentrations must be used during hot weather (85°F to 95°F). The

effectiveness of MANDOLIN diminishes rapidly below 85°F. The entire fruiting area of the tree must receive a thorough coverage of the spray solution.

Restrictions:

- Do not use on varieties where both young fruits and fruits close to maturity are present on trees.
- Do not apply within 90 days of harvest.
- Do not exceed 8 fl.oz. (0.11 pounds AI equivalent) per acre per application or 24 fl.oz. (0.33 pounds AI equivalent) per acre per year.
- Do not apply more than 3 applications per year.
- Minimum Re-Treatment Interval (RTI) is 5 days.
- Do not use in a greenhouse.
- Do not apply this product through any type of irrigation system.

PRESERVING ORNAMENTAL HOLLY BOUGHS

To delay leaf drop of holly boughs, make a "dip solution" containing 2 to 4 fl. oz. in 100 gallons of water (equal to 35 to 69 ppm 1-NAA). Dip holly boughs as soon as possible after cutting. Allow excess solution to drain. Do not soak or leave boughs in dip solution. Replenish dip solution as needed. To maintain concentration, replace with fresh solution every 3 to 4 days. Package while moist to keep boughs fresh until used. Maintain a 34°F to 40°F temperature in bough storage area.

STORAGE AND DISPOSAL

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

STORAGE: Store product in original container in a cool (not in direct sunlight), dry, locked place out of reach of children. Do not allow product to freeze.

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: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning if available, 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.

LIMITED WARRANTY AND DISCLAIMER

The manufacturer warrants (a) that this product conforms to the chemical description on the label; (b) that this product is reasonably fit for the purposes set forth in the directions for use, subject to the inherent risks referred to herein, when it is used in accordance with such directions; and (c) that the directions, warnings, and other statements on this label are based upon responsible experts' evaluations of reasonable tests of effectiveness, of toxicity to laboratory animals and to plants and residues on food crops, and upon reports of field experience. Tests have not been made on all varieties of food crops and plants, or in all states or under all conditions.

THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE SET FORTH HEREIN. THE MANUFACTURER NEITHER MAKES NOR INTENDS, NOR DOES IT AUTHORIZE ANY AGENT OR REPRESENTATIVE, TO MAKE ANY OTHER WARRANTIES, EXPRESS

OR IMPLIED, AND IT EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTY OF QUALITY OR PERFORMANCE. THIS WARRANTY DOES NOT EXTEND TO, AND THE BUYER SHALL BE SOLELY RESPONSIBLE FOR, ANY AND ALL LOSS OR DAMAGE WHICH RESULTS FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL DIRECTIONS, WARNINGS OR CAUTIONS.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S EXCLUSIVE REMEDY AND MANUFACTURER'S OR SELLER'S EXCLUSIVE LIABILITY FOR ANY AND ALL CLAIMS, LOSSES, DAMAGES, OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION, TO REPLACEMENT OF, OR THE REPAYMENT OF THE PURCHASE PRICE FOR, THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO EVENT, SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

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