

Fruitone® L

FOR THINNING, RETURN BLOOM AND PRE-HARVEST DROP IN APPLES, PEARS AND OTHER LISTED CROPS

ACTIVE INGREDIENT:

1-Naphthaleneacetic Acid, Sodium Salt*3.5%

INERT INGREDIENTS:96.5%

TOTAL:100.0%

*Equivalent to 3.1% of 1-Naphthaleneacetic Acid (NAA).

KEEP OUT OF REACH OF CHILDREN CAUTION

FIRST AID	
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 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 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.
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.
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:.....1-800-892-0099 For Transportation Emergencies, including spill, leak or fire, phone: CHEMTREC®.....1-800-424-9300 or 1-202-483-7616 For Product Use Information phone: VALENT.....1-800-682-5368	
NOTE TO PHYSICIAN	
No specific antidote is available. All treatments should be based on observed signs and symptoms of distress in the patient. Overexposure to materials other than this product may have occurred.	

EPA Reg. No. 5481-541

EPA Est. No.

Net Contents:

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 the skin or eyes, swallowed or inhaled. Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material (Selection Category A)
- Shoes plus socks

USER SAFETY REQUIREMENTS

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

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

For terrestrial uses: 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 when disposing of equipment washwaters. Do not contaminate irrigation ditches or water used for irrigation or domestic purposes. Do not apply when weather conditions favor drift from treated areas.

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. Do not use in a greenhouse.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard (WPS), 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 (REI). 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 REI. **The REI is 48 hours.**

The PPE required for early entry into treated areas which is permitted under the WPS and that involves contact with anything that has been treated, such as plants, soil or water, is:

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

SPRAY DRIFT MANAGEMENT

A variety of factors including weather conditions (e.g., wind direction, 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.

Wind speed restriction:

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

For orchard air blast:

- Sprays must be directed into the crop canopy.
- Outward pointing nozzles should 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

GENERAL INFORMATION

Fruitone L contains a synthetic auxin (1-Naphthaleneacetic acid) which mimics the natural plant hormone, 1-indoleacetic acid and has been widely used in commercial fruit production. The major uses include: thinning to increase fruit size and quality, prevention of pre-harvest fruit drop and for promoting return bloom on varieties that have alternate bearing tendencies. The response of fruit trees to a Fruitone L application may vary in different years. Therefore the grower needs to review the previous year's performance in the orchard and take into consideration the existing varieties, prevailing and anticipated climatic conditions, location, tree vigor, fruit set potential, pollination and other factors before choosing the desired rate and timing of application.

Fruitone L may also be used for thinning and stop drop on azarole, crabapple, loquat**, mayhaw, medlar, Asian pear, quince**, Chinese quince**, Japanese quince**, tejocote and cultivars, varieties and/or hybrids of these.

Importance of Spray Volume: It is important to use sufficient water to ensure uniform spray coverage. The appropriate spray volume (e.g. tree row volume) is determined by the type of equipment used, density of the foliage, tree spacing, coverage desired and intended spray pattern. Applications may be made by ground in up to 500 gallons of water per acre and aerial applications may also be made at 5-20 gallons of water per acre. Consider all variables in rate and application timing for each variety and orchard location prior to establishing the spray program.

**Not approved for use in California on loquat or quince.

Product Compatibility: Fruitone L, when diluted with the recommended amount of water, is physically compatible with a wide range of commonly used spray products. However, the full range of compatibility under local conditions should be established by the grower. It is recommended that growers premix a small quantity of the desired tank mix and observe for possible adverse changes (settling out, flocculation, etc.). Avoid mixtures of several materials and very concentrated spray mixtures. Observe all precautions and limitations on labeling of all products used in any tank mix and ensure that there is always proper agitation in the tank. Please consult your local Extension agent or Pomologist for local recommendations or when tank mixing any product you have not previously used with Fruitone L. In addition, to ensure plant safety, always test spray a small area prior to the general use of a tank mix that you have not previously used.

CHEMICAL THINNING OF APPLES

Tree response to Fruitone L applications varies greatly based on the type of variety (see **Table-1**), climatic factors before and after application, tree vigor, pollination, fruit set and fruitlet size at time of application. Therefore, the level of thinning can vary greatly from year to year. Previous orchard history and prior year's performance can help a grower determine the best spray program unique for that orchard. A typical rate for a moderate-to-thin apple variety in an orchard which requires 100 gallons of water per acre to achieve drip is 2 fl. oz. of Fruitone L per acre. For an acre requiring 200 gallons to achieve drip, 4 fl. oz. per acre may be more suitable (alternatively, see **Table-2** for use rates based on ppm and tree row volume). Higher rates may be needed for more difficult-to-thin varieties or for large, vigorous trees with high fruit set potential which would need aggressive thinning, or when applications are made towards the end of the thinning window. Lower rates may be best for weaker trees with

poor pollination and lower fruit set potential. Application timing typically ranges from full bloom to 30 days after full bloom. Thinning applications with Fruitone L are typically most effective when the king fruitlets are 5 to 10 mm in diameter. The preferred application temperature is between 70°F and 75°F under slow drying conditions. Applications are not recommended below 60°F or above 80°F. Over-thinning may occur when daytime temperature exceeds 85°F. Satisfactory thinning can be obtained under such conditions with lower rates. Spray applications should be directed to the top two-thirds of the tree canopy for optimal performance. Under normal conditions, one application for thinning should be adequate. However, if a second application is desired, it should not be made earlier than 7 days after the first application.

Varietal Advisory: Certain varieties can be sensitive to Fruitone L and therefore growers should exercise caution prior to large scale use. In addition, application of Fruitone L to trees younger than five years of age should be made with caution as damage to the trees may occur. Pygmy, or misshapen fruit formation, or even phytotoxicity, may occur on some varieties at higher rates, or when temperatures exceed 85°F, and/or when applications are made when fruit size exceeds 15 mm. The *Delicious* or *Fuji* apple varieties are particularly susceptible and care should be exercised when using Fruitone L on such varieties.

Table – 1

Apple Varieties	Thinning Rates ¹ (fl. oz. per 100 gallons of tree row volume ²)	Typical Application Timing
Easy-to-thin: Granny Smith, Braeburn, Pink Lady, Cortland, Delicious Baldwin, Idared, Jonathan, Northern Spy, MacIntosh, Red Delicious, Rome Beauty, Stayman, Rhode Island Greening, Minneiska, Twenty-ounce, Autumncrisp, Monroe, Redcourt, Zestar and others.	0.5 – 3.0	Petal fall (3-7 mm fruit size) and/or early fruit set (8-10 mm fruit size). Note: Thinning becomes increasingly difficult as fruit size increases. Adjust the rate of Fruitone L to obtain desired results. Application to fruit >15 mm may result in misshapen or pygmy fruit in sensitive varieties.
Moderately difficult-to-thin: Gala, Golden Supreme, Honeycrisp, Cameo, Gingergold, JerseyMac, Rome, Jonagold, Empire, Olenberg (Duchess) Red Astrachan, Spartan, Mutsu, Yellow Transparent, Williams Early, Ambrosia, Pinata [®] , WA2, Winesap and others.	1.0 - 4.0	
Difficult-to-thin: Fuji, Golden Delicious, Jonamac, Lodi, Macoun, York, York Imperial, Yellow Newton, PaulaRed, Early Macintosh, Aceynmac, Taylor Rome, and others.	1.5 - 4.0	

- 1 Note: The rate ranges supplied are intended only as a general guide. Your intended results may require rates above or below those in the table. When Fruitone L is used in combination with a non-ionic surfactant such as Regulaid[®], or in a tank mix with another apple thinning product, the application rate of Fruitone L should be appropriately reduced.
- 2 Volume of water required per acre required to achieve drip at the time of application.

Note on Tank Mix Combinations and Phytotoxicity: Tank mixtures of reduced-rate combinations of Fruitone L and products such as Carbaryl (e.g. Sevin[®] 4F and Sevin[®] XLR Plus), or MaxCel[™] have been used to enhance thinning. However, Fruitone L should not be mixed with any product containing a label restriction against such mixing. Always apply in accordance with the limitations and precautions of the most restrictive label, and always test any tank-mix for efficacy, compatibility and phytotoxicity.

TO PROMOTE RETURN BLOOM ON APPLE TREES THE FOLLOWING SEASON

Fruitone L can effectively promote return bloom during an off year in young trees that are slow to bear or on mature trees that are likely to produce only a limited number of blossoms in the following year. Fruitone L acts as a return bloom enhancer to certain apple varieties such as, but not limited to: *Fuji*, *Jonagold*, *Mutsu*, *Braeburn* and *Golden Delicious*. The recommended application rate range is between 2 to 8 fl. oz. per acre, applied six to eight weeks after petal fall in sufficient water to ensure good coverage based on tree row volume. Repeat applications made at 2 to 8 fl. oz. per acre can improve results and may be made at 7 to 14 day intervals. These applications made during the summer months, may also provide an additional benefit of aiding pre-harvest fruit drop in certain varieties of apples (see above).

Spray Advisory: Even when used at low rates, reduced fruit quality such as early ripening or water core or leaf drop can result on certain varieties which are sensitive to Fruitone L, (such as *Early MacIntosh* or other early summer varieties). Application of Fruitone L at rates higher than 8 fl. oz. per acre can also affect fruit quality and tree vigor on any variety and growers should exercise caution.

CONTROL OF PRE-HARVEST DROP OF APPLES

Fruitone L also controls pre-harvest drop of apples leading to a larger harvest and a reduction of losses from wind and mechanical knockdown. Typical applications should be made within one to four weeks of anticipated harvest. Fruitone L becomes effective 1 to 3 days after application and can prevent fruit drop up to two weeks, depending upon use rates and environmental conditions. For maximum effectiveness, apply only when orchard temperature is 70°F or higher. Fully wet the entire canopy to ensure complete coverage. Varietal type, climatic conditions and other factors may determine the actual rate and timing. Do not delay harvest beyond optimum maturity. Improvement in fruit size and color may be expected in certain varieties. Pre-harvest interval (PHI) is 2 days.

Apply by ground or by air in sufficient water to ensure good coverage. Aerial applications must be made using at least 5 gallons of water per acre. Ground applications should be made in sufficient water to ensure adequate coverage. Apply only when weather conditions favor minimal spray drift. A typical application for controlling pre-harvest drop is 8 to 32 fl. oz. per acre, made one to four weeks prior to harvest. If needed, repeat applications may be made at weekly intervals.

CHEMICAL THINNING OF PEARS

Tree response to Fruitone L applications varies greatly based on the type of variety treated, climatic factors before and after application, tree vigor, pollination, fruit set and fruit size at time of application. Therefore, results can vary greatly from year to year. Previous orchard history, good record keeping, and evaluating use rates prior to large scale use can help a grower determine the best spray program for that orchard. As a guide only, a typical rate for thinning Bosc or Bartlett pears is 4 fl. oz. of Fruitone L per acre when applied in 100 gallons of water per acre to achieve drip or 8 fl. oz. when applied in 200 gallons to achieve drip (alternatively, see **Table-2** for use rates based on ppm and tree row volume). Large, vigorous trees with high fruit-set potential or for applications made towards the end of the thinning window may require higher rates to obtain optimum results. Weaker trees with poor pollination and lower fruit set potential generally require lower rates. Spray application timing can range from full bloom to 30 days after full bloom, but optimum results are obtained when sprayed within 2 to 3 weeks after full bloom. Under normal conditions, one application for thinning should be adequate. However, if a second application is desired, it should not be made earlier than 7 days after the first application. The preferred application temperature range is between 70°F and 75°F. Applications are not recommended below 60°F or above 80°F.

Varietal Advisory: Some varieties of pears (such as *D'Anjou*) are easy to over-thin, and under certain conditions susceptible to the formation of pygmy fruit. Consult your local extension agent or pomologist for specific regional recommendations.

CONTROL OF PRE-HARVEST DROP ON PEARS

Fruitone L can be used effectively to prevent pre-harvest drop of many pear varieties. However, since varietal response to Fruitone L can be different, evaluations for efficacy and post-harvest fruit quality should be done on a

small scale in an orchard setting prior to large-scale use. Treatments become effective within 3 to 4 days after application and pre-harvest fruit drop can be minimized for up to two weeks, depending on rates and environmental conditions. Improvement in fruit size is generally observed. Do not make more than two applications per season for this use and do not delay harvest beyond optimum maturity. Pre-harvest interval (PHI) is 2 days.

Apply by ground or air in sufficient water to ensure good coverage. Aerial applications must be made using at least 5 gallons of water per acre. Apply only when weather conditions favor minimal spray drift. Ground applications should be made in sufficient water (typically based on tree row volume) to ensure adequate coverage. A typical rate range for controlling pre-harvest drop is between 8 to 32 fl. oz. per acre, made one to four weeks prior to harvest. Higher rates may be needed for varieties such as *D'Anjou*. Large, vigorous trees with high fruit-set should be treated at the higher recommended rate and smaller less vigorous trees with low fruit-set potential should be treated at the lower recommended rate. If needed, additional applications may be made at weekly intervals.

CHEMICAL THINNING AND CONTROL OF PRE-HARVEST DROP ON AZAROLE, CRABAPPLE, LOQUAT, MAYHAW, MEDLAR, ASIAN PEAR, QUINCE**, CHINESE QUINCE**, JAPANESE QUINCE**, TEJOCOTE AND CULTIVARS, VARIETIES AND/OR HYBRIDS OF THESE**

Varietal Advisory: Certain varieties can be sensitive to Fruitone L and therefore growers should exercise caution prior to large scale use. Consult your local extension agent or pomologist for specific regional recommendations. Applications are not recommended below 60oF or above 80oF. Over-thinning may occur when daytime temperature exceeds 85oF.

Use Fruitone L at a rate ranging from 5 ppm to 20 ppm depending on crop, variety, flowering and fruit set conditions. See Table 2 for Fruitone L dilution rate.

Maximum use rate PER APPLICATION for apples, pears, azarole, crabapple, loquat, mayhaw, medlar, Asian pear, quince**, Chinese quince**, Japanese quince**, tejocote and cultivars, varieties and/or hybrids of these:**

- Do not exceed 54 fl. oz. Fruitone L per acre per application.

Maximum ANNUAL APPLICATION rates for apples, pears, azarole, crabapple, loquat, mayhaw, medlar, Asian pear, quince**, Chinese quince**, Japanese quince**, tejocote and cultivars, varieties and/or hybrids of these:**

- 150 grams of NAA (161 fl. oz. of Fruitone L or 0.33 lbs. NAA equivalent) per acre per year or per crop cycle. (Maximum seasonal quantity and per application is based on NAA acid equivalent of the active ingredient).

MAXIMUM SEASONAL APPLICATION RATE for apples and pears:

- **In California only:** Do not exceed 50 grams of NAA (54 fl. oz. of Fruitone L) per acre per season

Table – 2

Spray Preparation Chart For High Volume Application (in parts per million)				
Target Rate (ppm NAA acid basis)	Tree row volume expressed as gallons per acre*			
	100	200	300	400
	Fl. oz. of Fruitone L	Fl. oz. of Fruitone L	Fl. oz. of Fruitone L	Fl. oz. of Fruitone L
5	2.0	4.0	6.1	8.1
10	4.0	8.1	12.1	16.2
15	6.1	12.1	18.2	24.3
20	8.1	16.2	24.3	32.4

*Use the appropriate Fruitone L rates from this chart to prepare the desired final Tree Row Volume spray per acre.

**Not approved for use in California on loquat or quince.

TO PROMOTE THE DEVELOPMENT OF MALE FLOWERS TO HELP POLLINATION IN RAMBUTANS:

Fruitone L can be used effectively to increase the number of male flowers in the panicle in order to improve pollination and fruit set in rambutan trees. Spray crop when at least 10% of the flowers on the panicles are fully opened (anthesis stage). The NAA spray concentration should be approximately 90 ppm. Adjust the NAA concentration or quantity of spray solution desired based on orchard temperature, size and health of trees, number of panicles and ensure that the panicles and surrounding foliage are adequately wet at the time of application. The addition of a surfactant is optional. Do not exceed more than one application per year. The Preharvest Interval (PHI) is 2 days.

Examples for preparing 90 ppm dilution of NAA:

FRUITONE L	Add water to make total volume of:
36 fl. oz.	100 gallons
54 fl. oz.	150 gallons
72 fl. oz.	200 gallons

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Do not store in the same area with food or feed. Do not freeze.

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

CONTAINER HANDLING: 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, 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.

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