

100-919

12/3/1999

1/15

(11/30/99)

Label Marketing Booklet

Flint™

FUNGICIDE

For control of certain diseases in pome fruits, grapes, and cucurbit vegetables

Active Ingredient:

Trifloxystrobin (CAS No. 141517-21-7) ..... 50.0%

Other Ingredients: ..... 50.0%

Total: ..... 100.0%

Flint is a water-dispersible granule.

EPA Reg. 100-919

EPA Est. 67545-AZ-1

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

See additional precautionary statements and directions for use inside booklet.

NCP 919A-L6A 1299

20 OUNCES

U.S. Standard Measure

<b>ACCEPTED</b>
DEC 3 1999
<small>Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 100-919</small>

## DIRECTIONS FOR USE AND CONDITIONS OF SALE AND WARRANTY

**IMPORTANT:** Read the entire **Directions for Use** and the **Conditions of Sale and Warranty** before using this product. If terms are not acceptable, return the unopened product container at once.

---

### CONDITIONS OF SALE AND WARRANTY

---

The **Directions for Use** of this product reflect the opinion of experts based on laboratory and field trials. 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 manner of use or application all of which are beyond the control of Novartis Crop Protection, Inc. or the Seller. All such risks shall be assumed by the Buyer.

Novartis warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions for Use** subject to the inherent risks referred to above. **Novartis makes no other express or implied warranty of Fitness or Merchantability or any other express or implied warranty. In no case shall Novartis or the Seller be liable for consequential, special, or indirect damages resulting from the use or handling of this product.** Novartis and the Seller offer this product, and the Buyer and user accept it, subject to the foregoing **Conditions of Sale and Warranty**, which may be varied only by agreement in writing signed by a duly authorized representative of Novartis.

---

**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

**FAILURE TO FOLLOW DIRECTIONS AND PRECAUTIONS ON THIS LABEL MAY RESULT IN CROP INJURY, POOR DISEASE CONTROL, AND/OR ILLEGAL RESIDUES.**

---

**GENERAL INFORMATION**

---

Flint is a broad spectrum fungicide for the control of certain diseases in pome fruits, grapes, and cucurbits. Flint works by interfering with respiration in plant pathogenic fungi. Flint is a potent inhibitor of spore germination and mycelial growth.

**UNDER CERTAIN CONDITIONS CONDUCIVE TO EXTENDED INFECTION PERIODS, ADDITIONAL FUNGICIDE APPLICATIONS BEYOND THE NUMBER ALLOWED BY THIS LABEL MAY BE NEEDED. UNDER THESE CONDITIONS USE ANOTHER FUNGICIDE REGISTERED FOR THE CROP/DISEASE APPEARING ON THIS LABEL.**

**DO NOT APPLY FLINT TO CONCORD GRAPES OR CROP INJURY MAY OCCUR.**

**Resistance Management**

Flint 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. Trifloxystrobin (the active ingredient in Flint) does exhibit cross-resistance to other strobilurin fungicides, such as azoxystrobin and kresoxim-methyl. Fungal pathogens are known to develop resistance to products with the same mode of action when used repeatedly. Because resistance development cannot be predicted, the use of this product should conform to resistance management strategies established for the crop and use area. Such strategies may include rotating and/or tank mixing with products having different modes of action or limiting the total number of applications per season. Novartis encourages responsible resistance management to ensure effective long-term control of the fungal diseases on this label.

**Spray Equipment**

Thorough coverage is necessary to provide good disease control. Applications using sufficient water volume to provide thorough and uniform coverage generally provide the most effective disease control. For ground application equipment, a minimum of 50 gals./A is recommended for tree crops and 10 gals./A for other crops. For aerial application equipment, a minimum of 10 gals./A is recommended for tree crops and 5 gals./A for other crops.

### **Air Blast Sprayers**

Air assisted or air blast sprayers move spray droplets into the crop canopy using a forced air system. The fan should be set up to deliver only enough air volume to penetrate the canopy and provide good coverage. Adjust deflectors or other aiming devices to direct spray only to the target area.

Equip sprayers with nozzles that provide accurate and uniform application. Check whirl plates and nozzle discs for wear and replace as necessary. Calibrate the sprayer before use.

Use a pump with a capacity to maintain the correct rated pressure for the nozzles selected. Maintain sufficient agitation to keep the mixture in suspension. Use jet agitators, a liquid sparge tube, or mechanical paddles for agitation.

It is suggested that screens be used to prevent nozzles from clogging. Screens placed after the tank and before the nozzles should be 50-mesh or coarser. Check nozzle manufacturer's recommendations.

### **Broadcast Ground Sprayers**

Equip sprayers with nozzles that provide accurate and uniform application. Be certain that nozzles are the same size and uniformly spaced across the boom. Calibrate the sprayer before use.

Use a pump with the capacity to: (1) maintain a minimum of 35 psi at nozzles, and (2) provide sufficient agitation in the tank to keep the mixture in suspension – this requires recirculation of 10% of the tank volume per minute. Use jet agitators or a liquid sparge tube for vigorous agitation.

Use screens to protect the pump and to prevent nozzles from clogging. Screens placed on the suction side of the pump should be 16-mesh or coarser. Do not place a screen in the recirculation line. Use 50-mesh screens at the nozzles. Check nozzle manufacturer's recommendations.

For information on spray equipment and calibration, consult sprayer manufacturer's and/or state recommendations. For specific local directions and spray schedules, consult the current state agricultural experiment station recommendations.

### **Mixing Procedures**

Prepare no more spray mixture than is needed for the immediate operation. Thoroughly clean spray equipment before using this product. **Vigorous agitation is necessary for proper dispersal of the product.** Maintain maximum 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.

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

**Flint + Tank Mix Partners:** 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: products packaged in water-soluble packaging, wettable powders, wettable granules (dry flowables) such as Flint, liquid flowables, liquids, and emulsifiable concentrates. Always allow each tank mix partner to become fully and uniformly 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 Flint in tank mixtures, all products in water-soluble packaging should be added to the tank before any other tank mix partner, including Flint. 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 Flint in a tank mixture, observe all directions for use, crop/sites, use rates, dilution ratios, precautions, and limitations which 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 must not be mixed with any product which 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 registered.

Flint is compatible with most insecticide, fungicide, and foliar nutrient products. However, the physical compatibility of Flint with tank mix partners should be tested before use. To determine the physical compatibility of Flint 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.

**THE CROP SAFETY OF ALL POTENTIAL TANK MIXES INCLUDING**

**ADDITIVES AND OTHER PESTICIDES ON ALL CROPS HAS NOT BEEN TESTED. BEFORE APPLYING ANY TANK MIXTURE NOT SPECIFICALLY RECOMMENDED ON THIS LABEL, THE SAFETY TO THE TARGET CROP SHOULD BE CONFIRMED.**

**Aerial Application:** Avoid application under conditions when uniform coverage cannot be obtained or when excessive spray drift may occur. Do not apply directly to humans or animals.

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

**Additives:** Do not apply Flint in combination with organosilicate surfactants to apples or pears or crop injury may occur.

### **Recommendations to Avoid Spray Drift**

Do not make applications when conditions favor drift beyond the target application area. When drift may be a problem, take measures to reduce drift, including:

1. Do not spray if wind speeds are or become excessive. Do not spray if wind speed is 15 mph or greater. If nontarget crops are located downwind, use caution when spraying if wind is present. Do not spray if winds are gusty.
2. Use caution when conditions are favorable for drift (high temperatures, drought, low relative humidity).
3. Do not apply when a temperature inversion exists. If inversion conditions are suspected, consult with local weather services before making an application.

---

### **USE DIRECTIONS FOR SPECIFIC CROPS**

---

Flint provides control or suppression of several important diseases of pome fruits, grapes, and cucurbits. When reference is made to disease suppression, suppression can mean either erratic control from good to fair, or consistent control at a level below that obtained with the best commercial disease control products.

**POME FRUITS: APPLES, PEARS, CRABAPPLES, LOQUAT, MAYHAW, QUINCE**

Disease Control	Rate oz./Acre	Application Timing	Notes
Scab ( <i>Venturia</i> spp.)	2.0-2.5	Begin applications at green tip and continue as needed on a 7 to 10-day interval.	Flint will provide up to 100 hours of post-infection control of apple scab. Scab applications should be made as soon as possible following a scab infection period. A reliable forecasting system must be used.
Sooty Blotch ( <i>Gloeodes pomigena</i> )  Fly Speck ( <i>Schizothyrium pomi</i> )	2.0-2.5	Begin applications preventively. Continue applications as needed on a 10 to 14-day interval.	Use the higher rates and shorter intervals when disease pressure is severe.
Powdery Mildew ( <i>Podosphaera leucotricha</i> )	2.0-2.5	Begin applications preventively. Continue applications as needed on a 10 to 14-day interval.	Use the higher rates and shorter intervals when disease pressure is severe.  <b>Alternate with a sterol inhibitor fungicide.</b>
Disease Suppression	Rate oz./Acre	Application Timing	Notes
Bitter Rot ( <i>Glomerella cingulata</i> )	3.0	Begin applications preventively using Flint solo at the specified rate or use a tank mix of Flint with 1.2 lbs. active ingredient of Captan per acre. Continue applications as needed on a 10 to 14-day interval.	Use the higher rates and shorter intervals when disease pressure is severe.
White Rot ( <i>Botryosphaeria dothidea</i> )	Tank mix with Captan  1.5		

**Restrictions:** Do not apply more than 11 oz. of Flint per acre per season. Do not apply Flint within 14 days of harvest. Do not exceed more than 4 total applications of Flint or other strobilurin fungicides per acre per season. To limit the potential for resistance to develop, do not apply more than 3 sequential applications of Flint or other strobilurin fungicides. If 2 to 3 sequential applications are made, switch to a labeled, non-strobilurin fungicide for at least 2 applications before applying a strobilurin fungicide again. Do not apply Flint where spray drift may reach Concord grapes or crop injury may occur. Spray equipment should be rinsed after applying Flint before application of other products to Concord grapes or crop injury may occur.

9/15

**GRAPES: DO NOT APPLY FLINT TO CONCORD GRAPES OR CROP INJURY MAY OCCUR**

Disease Control	Rate oz/Acre	Application Timing	Notes
Powdery Mildew ( <i>Uncinula necator</i> )	1.5	Begin applications preventively and continue as needed on a 14-day interval.	Use the shorter intervals and higher rates when disease pressure is severe.
	2.0	Begin applications preventively and continue as needed on a 14 to 21-day interval.	
Black Rot ( <i>Guignardia bidwellii</i> )	2.0	Begin applications when shoots are 1-3 inches in length and continue as needed on a 10 to 14-day interval.	Use the shorter intervals when disease pressure is severe.
Disease Suppression	Rate oz/Acre	Application Timing	Notes
Downy Mildew ( <i>Plasmopara viticola</i> )	4.0	Begin applications preventively when conditions are favorable for disease and continue on a 7 to 10-day interval as needed.	Use the shorter intervals when disease pressure is severe.

**Restrictions:** Do not apply more than 8 oz. of Flint per acre per season. Do not apply Flint within 14 days of harvest. Do not apply more than 4 applications of Flint or other strobilurin fungicides to table or wine grapes per season. On grapes for all other uses, do not apply more than 3 applications of Flint or other strobilurin fungicides per season. To limit the potential for resistance to develop, do not apply more than 3 sequential applications of Flint or other strobilurin fungicides before alternating to a non-strobilurin fungicide.

**CUCURBIT VEGETABLES: CHAYOTE, CHINESE WAXGOURD, CITRON MELON, CUCUMBER, GHERKIN, EDIBLE GOURDS, MOMORDICA SPP., MUSKMELON, PUMPKIN, SUMMER SQUASH, WINTER SQUASH, WATERMELON**

Disease Control	Rate oz/Acre	Application Timing	Notes
Powdery Mildew ( <i>Spaerotheca fuliginea</i> ) ( <i>Erysiphe cichoracearum</i> )	1.5-2.0	Begin applications preventively when conditions are favorable for disease and continue as needed on a 7 to 14-day interval.	Use the higher rates and shorter intervals when disease pressure is severe.
Disease Suppression	Rate oz/Acre	Application Timing	Notes
Downy Mildew ( <i>Pseudoperonospora cubensis</i> )	4.0	Begin applications preventively when conditions are favorable for disease. Alternate applications of Flint with Ridomil Gold® Bravo® at the labeled rate and continue as needed on a 7 to 14-day interval.	Use the shorter intervals when disease pressure is severe.

**Restrictions:** Do not apply more than 8 oz. of Flint per acre per crop. Flint may be applied up to the day of harvest (0-day preharvest interval). Do not exceed more than four total applications of Flint or other strobilurin fungicides per acre per crop. To limit the potential for resistance to develop, do not apply more than one application of Flint or other strobilurin fungicides before alternating with a non-strobilurin fungicide.

**Rotational Restrictions**

Treated areas may be replanted immediately following harvest with any crop listed on this label. For crops not listed on this label, do not plant back within 30 days of last application.

---

**STORAGE AND DISPOSAL**

---

**Storage**

Store in a cool, dry place.

**Pesticide Disposal**

Do not contaminate water, food, or feed by storage or 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 container. Then offer for recycling or reconditioning, or puncture and dispose of using one of the following methods: (1) depositing in a sanitary landfill, (2) incineration, or (3) burning, if allowed by state and local ordinances. Stay out of smoke from burning containers.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire, or other emergency, call 1-800-888-8372, day or night.

---

**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.

**First Aid**

**If in eyes:** Flush eyes with plenty of water. Get medical attention if irritation persists.

**If on skin:** Wash with plenty of soap and water. Get medical attention if irritation persists.

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

**Personal Protective Equipment**

**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 exist 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.

<p><b>User Safety Recommendations</b></p> <p><b>Users should:</b></p> <ul style="list-style-type: none"><li>• Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.</li><li>• Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.</li></ul>
--

**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.

Flint™ and Ridomil Gold® trademarks of Novartis

Bravo® trademark of ISK Biotech

©1999 Novartis

Novartis Crop Protection, Inc.  
Greensboro, North Carolina 27419  
[www.cp.us.novartis.com](http://www.cp.us.novartis.com)

NCP 919A-L6A 1299

Product of Switzerland

14/15

BACK PAGE OF BOOKLET

Flint™

FUNGICIDE

For control of certain diseases in pome fruits, grapes, and cucurbit vegetables

Active Ingredient:

Trifloxystrobin (CAS No. 141517-21-7) .....50.0%

Other Ingredients: .....50.0%

Total: .....100.0%

Flint is a water-dispersible granule.

See directions for use in attached booklet.

**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.

EPA Reg. No. 100-919

EPA Est. 67545-AZ-1

Flint™ trademark of Novartis

20 OUNCES

U.S. Standard Measure

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

**Precautionary Statements**

**Hazards to Humans and Domestic Animals**

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.

**First Aid**

**If in eyes:** Flush eyes with plenty of water. Get medical attention if irritation persists.

**If on skin:** Wash with plenty of soap and water. Get medical attention if irritation persists.

**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.

**Physical or Chemical Hazards**

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

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire, or other emergency, call 1-800-888-8372, day or night.

©1999 Novartis

Novartis Crop Protection, Inc.  
Greensboro, North Carolina 27419  
www.cp.us.novartis.com

Product of Switzerland

NCP 919A-L6A 1299

Product ID.

[QUARK/FLINT/FLINT-MKTG-BKLT] - ccg - 12/30/99

Creating marketing label  
with NASTAR language