

62719-603

9/9/2010

10/18



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

SEP -9 2010

Mr. Rafael Herrera
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46248

Subject: Notification of an Alternate Brand Name (Tangent™) Under PR Notice 98-10
Pindar™ Herbicide
EPA Reg. No. 62719-603
Application, Dated August 5, 2010

Dear Mr. Herrera:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the subject product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested (notification of the alternate brand name "Tangent™") falls within the scope of PRN 98-10. The label submitted with the application has been date-stamped "Notification" and will be placed in our records.

If you have any questions, please call me directly at (703) 305-1243 or Susan Stanton of my staff at (703) 305-5218.

Sincerely,

Susan L. Stanton, for

Kathryn Montague, Product Manager 23
Herbicide Branch
Registration Division (7505P)
Office of Pesticide Programs

Please read instructions on reverse before completing form.

Form Approved, OMB No. 2070-0060, Approval expires 2-28-95



United States
Environmental Protection Agency
Washington, DC 20460

<input type="checkbox"/>	Registration
<input type="checkbox"/>	Amendment
<input checked="" type="checkbox"/>	Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number Dow AgroSciences LLC/62719-603	2. EPA Product Manager Kathryn Montague	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Dow AgroSciences LLC/Pindar	PM# 23	
5. Name and Address of Applicant (Include ZIP Code) Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: NOTIFICATION EPA Reg. No. _____ SEP 08 2010 Product Name _____	

Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Metal	<input type="checkbox"/> Plastic
				<input type="checkbox"/> Glass	<input type="checkbox"/> Paper
* Certification must be submitted		If "Yes" Unit Packaging wgt.	No. per container	Other (Specify) _____	
		If "Yes" Package wgt	No. per container		
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions <input type="checkbox"/>	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled			<input type="checkbox"/> Other _____		

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name Rafael Herrera	Title Regulatory Manager	Telephone No. (Include Area Code) (317) 337-4672 (fax: 317-337-4649)
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		6. Date Application Received (Stamped)
2. Signature <i>Cindy Soyja</i>	3. Title Regulatory Manager	
4. Typed Name Rafael Herrera (rlherrera@dow.com)	5. Date August 5, 2010	

30918

Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268-1054

308/2E
August 5, 2010



Document Processing Desk (NOTIF)
Office of Pesticide Programs (7504P)
U. S. Environmental Protection Agency
One Potomac Yard
2777 S. Crystal Drive
Arlington, VA 22202

TANGENT (A.I. PENOXSULAM)
EPA REGISTRATION NUMBER: 62719-603
NOTIFICATION OF ALTERNATE BRAND NAME PER PR NOTICE 98-10

Enclosed please find labeling for the notification action of Pindar™ herbicide. The following change has been made by notification:

1. Add alternate brand name of Tangent.

This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Contents of Submission

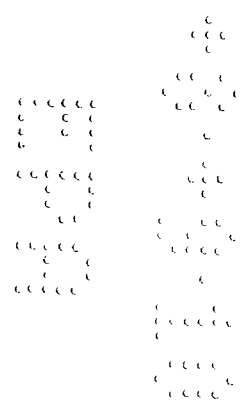
- Transmittal document (this letter)
- Application for Pesticide, EPA Form 8570-1
- Label entitled Tangent (E9A/Tangent/MSTR Notif/08-05-10) (15 Pages plus Registration Notes) (1 Copy)

If you require further information, please contact Cindy Loy, Regulatory Specialist at (317) 337-4655.

Sincerely,

Rafael Herrera
Regulatory Leader
(317) 337-4672
(317) 337-4649 (FAX)

Enclosures



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(Base label):

NOTIFICATION

SEP 08 2010

Tangent™

Herbicide

For preemergence and postemergence control of annual broadleaf weeds in bearing and non-bearing tree nuts [almond, beech nut, black walnut, Brazil nut, butternut, cashew, chestnut, chinquapin, English walnut, filbert (hazelnut), hickory nut, macadamia nut (bush nut), pecan, pistachio] and grapevines

Active Ingredient:

penoxsulam: 2-(2,2-difluoroethoxy)-N-(5,8-dimethoxy[1,2,4] triazolo[1,5c]pyrimidin-2-yl)-6-(trifluoromethyl)benzenesulfonamide 21.7%

Other Ingredients 78.3%

Total 100.0%

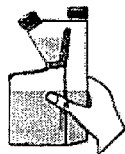
Contains 2 lb of active ingredient per gallon

[Editor's Note: The following should be included on the label if product is packaged in a Tip 'n Measure bottle.]

1 - Tip



2 - Level



3 - Dispense



Refer to inside of label booklet for detailed container use directions.

Keep Out of Reach of Children

CAUTION

Precautionary Statements

Hazards to Humans and Domestic Animals

Harmful If Inhaled

Avoid breathing spray mist.

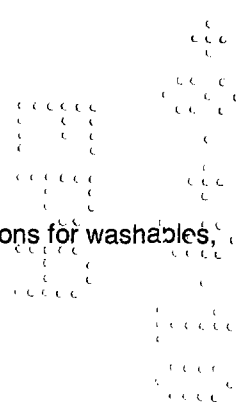
Personal Protective Equipment (PPE)

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.

Engineering Controls



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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 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.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may contact 1-800-992-5994 for emergency medical treatment information.

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 washwater or rinsate.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

(Storage and Disposal for rigid containers 5 gal or less)

Storage and Disposal

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

Pesticide Storage: Store in cool dry place in original container.

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

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 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. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

(Storage and Disposal for refillable rigid containers larger than 5 gal)

Storage and Disposal

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

Pesticide Storage: Store in cool dry place in original container.

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

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

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Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

(Storage and Disposal for nonrefillable rigid containers larger than 5 gal)

Storage and Disposal

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

Pesticide Storage: Store in cool dry place in original container.

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

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure 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 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Refer to label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

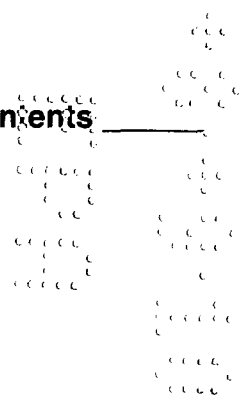
EPA Reg. No. 62719-603

EPA Est. _____

™Trademark of Dow AgroSciences LLC

Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

Net Contents _____



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(Label booklet cover):

Tangent™

Herbicide

For preemergence and postemergence control of annual broadleaf weeds in bearing and non-bearing tree nuts [almond, beech nut, black walnut, Brazil nut, butternut, cashew, chestnut, chinquapin, English walnut, filbert (hazelnut), hickory nut, macadamia nut (bush nut), pecan, pistachio] and grapevines

Active Ingredient:

penoxsulam: 2-(2,2-difluoroethoxy)-N-(5,8-dimethoxy[1,2,4] triazolo[1,5c]pyrimidin-2-yl)-6-(trifluoromethyl)benzenesulfonamide	21.7%
Other Ingredients	78.3%
Total	100.0%

Contains 2 lb of active ingredient per gallon

Keep Out of Reach of Children

CAUTION

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to inside of label booklet for additional precautionary information including Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

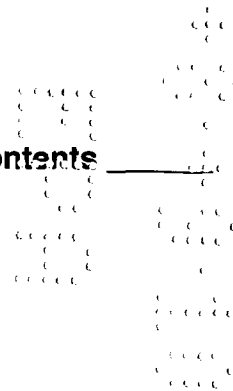
EPA Reg. No. 62719-603

EPA Est. _____

™Trademark of Dow AgroSciences LLC

**Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268**


Net Contents _____



[Editor's Note: The following Container Use Directions should be included on the label if product is packaged in a Tip 'n Measure bottle.]


Container Use Directions

1 - Tip




Tilt container to angle as shown and fill head to desired amount – use vertical scale for measuring. Container should be closed.

2 - Level

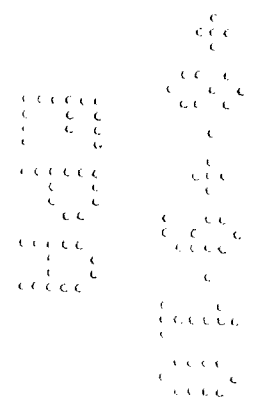


Hold container up-right and check the amount for accuracy. Add or subtract as needed, using pour-back scale as guide.

3 - Dispense



Remove cap or head and pour into sprayer or other devices. No fluid will pour from the main container. Replace cap for storage in sealed condition.



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(Page 1 through end):

Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION

Harmful If Inhaled

Avoid breathing spray mist.

Personal Protective Equipment (PPE)

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.

Engineering Controls

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 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.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may contact 1-800-992-5994 for emergency medical treatment information.

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 washwater or rinsate.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

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

Non-Agricultural Use Requirements

The requirements of 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.

Entry Restrictions for Non-WPS Uses: Keep unprotected persons out of treated areas until dusts have settled.

Storage and Disposal

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

Pesticide Storage: Store in cool dry place in original container.

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

Nonrefillable containers 5 gallons or less:

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 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. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Refillable containers 5 gallons or larger:

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Nonrefillable containers 5 gallons or larger:

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Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure 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 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

General Information

Tangent™ herbicide may be applied for preemergence and postemergence weed control of certain broadleaf and grass weeds in non-bearing and bearing tree nuts [almond, beech nut, black walnut, Brazil nut, butternut, cashew, chestnut, chinquapin, English walnut, filbert (hazelnut), hickory nut, macadamia nut (bush nut), pecan, pistachio] and grapevine crops as indicated by this label. Apply Tangent in early to late winter, in early spring, or anytime prior to germination of targeted weeds as per labeled use directions. The best weed control is obtained by application to weeds either preemergence or early postemergence when weeds are small and actively growing. Any cultural practices, cultivation, or disturbance of the soil surface after application will decrease the weed control provided by Tangent. Observe all use directions as provided in the General Use Precautions and Restrictions section of the label. When tank mixing Tangent with other registered products, read and carefully follow all applicable use directions, precautions and limitations on the respective product labels.

General Use Precautions and Restrictions

Tangent controls susceptible weeds germinating from seed. For postemergence weed control, Tangent should be tank mixed with an approved labeled adjuvant or postemergence herbicide (such as glyphosate, glufosinate, or paraquat) for the best control of emerged weeds. Tangent should be tank mixed with approved preemergence herbicides, such as oxyfluorfen (GoalTender® herbicide or Goal® herbicides), isoxaben (Gallery® specialty herbicide) (non-bearing tree nuts and grapevines), pendimethalin (Prowl H2O), oryzalin (Surflan), or flumioxazin (Chateau) for the best preemergence control of susceptible weeds and to broaden the spectrum of overall weed control. Tangent is stable on the soil surface for up to 14 days, but must be incorporated by moisture to provide effective preemergence control of susceptible weeds. A single rainfall or sprinkler irrigation of 0.5 inches or more, or flood irrigation within 14 days after application, is necessary to activate Tangent.

Read and observe all label directions before using. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product labels. In interpreting all labels for the tank mixture, the most restrictive labels must apply.

- For the best weed control, apply Tangent at 1 to 2 fl oz per acre during the winter dormant period following final harvest up to March 15 in tree nut and grapevine crops. A sequential application of 1 fl oz per acre can be applied up to 60 days prior to harvest. There must be a minimum of 30 days between sequential applications.
- Tangent can be applied as an early postemergence application to weeds. Tangent must be applied with an approved adjuvant. For best control of emerged grass and broadleaf weeds, apply Tangent tank mixed with an approved postemergence herbicide.
- Use Tangent only for listed purposes and at specified rates.
- Do not apply more than 2 fl oz of Tangent per acre during a single application.

- Do not apply more than 3 fl oz of Tangent per acre during a single growing season (from harvest to harvest).
- Do not apply Tangent to tree nut crops established less than 9 months after transplanting. Apply only to tree nut crops in good health and vigor. Use trunk guards to protect plants until adequate bark has developed. Do not apply after flowering unless using a hooded/shielded sprayer.
- Do not apply Tangent to grapevines established less than 9 months after transplanting. Do not apply to grapevines established less than 3 years unless vines are on a trellis wire a minimum of 3 feet above the soil surface. Use trunk guards to protect plants until adequate bark has developed. Apply Tangent only to grapevine crops in good health and vigor. Do not apply after bloom unless using a hooded/shielded sprayer.
- Do not apply Tangent to grapevines that are not staked or trellised unless grapevines are free-standing.
- Direct spray of Tangent toward the base of trees or grapevines. Do not apply Tangent as an over-the-top application. Avoid direct foliage contact.
- Tangent is phytotoxic to plant foliage. Do not allow direct or indirect applications of Tangent to contact any green foliage or green bark or injury will occur.
- **Tangent can be applied during the period following completion of final harvest up to 60 days before harvest. There must be a minimum of 30 days between sequential applications.**
- Do not apply until soil has been settled by packing and irrigation or rainfall and no cracks are present.
- Where rate ranges are given, the lower rates are recommended for coarse textured soils, lighter weed infestations and reduced lengths of residual weed control. It is recommended to use a higher rate in the rate range for medium to fine textured soils, heavy weed infestations, or extended residual weed control.
- Apply Tangent only with ground application equipment.
- Do not apply when weather conditions favor drift. Avoid drift to all non-target crops and areas.
- **Chemigation:** Do not apply Tangent through any type of irrigation system.
- Thoroughly flush spray equipment (tank, pump, hoses and boom) with clean water before and after each use.
- Do not contaminate irrigation water or water used for domestic purposes.
- Do not use any plants treated with Tangent for feed or forage.
- Do not apply to frozen soil or snow covered soil.
- Use untreated soil as fill when transplanting new trees and grapevines into an area previously treated with Tangent.

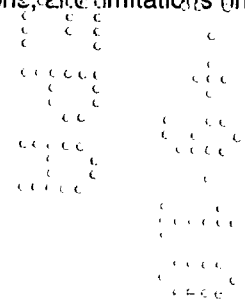
Grapevines – Winter Dormant Applications

Tangent will provide postemergence burndown and residual weed control of the weeds listed below. For short-term (2 to 3 months) residual weed control, apply Tangent at 1 fl oz per acre in combination with glyphosate, glufosinate or paraquat. Broader spectrum weed control can be achieved by using appropriate tank mix partners such as oxyfluorfen (GoalTender or Goal 2XL), isoxaben (Gallery) (non-bearing grapevines), pendimethalin (Prowl H20), oryzalin (Surflan), or flumioxazin (Chateau) for the best preemergence control of susceptible weeds. For longer term (4 to 6 months) residual weed control, apply Tangent at 2 fl oz per acre in combination with glyphosate, glufosinate or paraquat. Broader spectrum weed control can be achieved by using appropriate tank mix partners such as oxyfluorfen (GoalTender or Goal 2XL), isoxaben (Gallery) (non-bearing grapevines), pendimethalin (Prowl H20), oryzalin (Surflan), or flumioxazin (Chateau) for the best preemergence control of susceptible weeds. For best weed control, apply Tangent during the winter dormant period following final harvest up to March 15. If needed, a sequential application of Tangent at 1 fl oz per acre, applied with an appropriate postemergence tank mix partner, can be applied in the spring up to 60 days prior to harvest. When tank mixing Tangent with other registered products, read and carefully follow all applicable use directions, precautions, and limitations on the respective product labels.

Weeds Controlled

Common Name
 burclover, California
 chickweed, common
 clover, white

Scientific Name
Medicago polymorpha
Stellaria media
Trifolium repens



cudweed, purple	<i>Gnaphalium purpureum</i>
dandelion	<i>Taraxacum officinale</i>
evening-primrose, cutleaf	<i>Oenothera laciniata</i>
fiddleneck, coast	<i>Amsinckia menziesii var. intermedia</i>
fleabane, hairy	<i>Conyza bonariensis</i>
fleabane, dwarf	<i>Conyza ramosissima</i>
groundsel, common	<i>Senecio vulgaris</i>
henbit	<i>Lamium amplexicaule</i>
lambsquarters, common	<i>Chenopodium album</i>
lettuce, prickly	<i>Lactuca serriola</i>
maretail/horseweed	<i>Conyza canadensis</i>
mustard, black	<i>Brassica nigra</i>
mustard, Indian	<i>Brassica juncea</i>
mustard, wild	<i>Sinapis arvensis</i>
nightshade, black	<i>Solanum nigrum</i>
pigweed species	<i>Amaranthus spp.</i>
pineappleweed	<i>Matricaria discoidea</i>
purslane, common	<i>Portulaca oleracea</i>
radish, wild	<i>Raphanus raphanistrum</i>
redmaids	<i>Calandrinia ciliata</i>
rocket, London	<i>Sisymbrium irio</i>
rockpurslane, redmaids	<i>Calandrinia ciliata var. menziesii</i>
shepherdspurse	<i>Capsella bursa-pastoris</i>
sowthistle, annual	<i>Sonchus oleraceus</i>

Weeds Suppressed

Common Name

barnyardgrass
 filaree, redstem
 knotweed
 mallow, common
 mallow, little
 spurge, prostrate
 spurge, spotted

Scientific Name

Echinochloa crus-galli
Erodium cicutarium
Polygonum aviculare
Malva neglecta
Malva parviflora
Chamaesyce prostrata
Chamaesyce maculata

Tree Nuts [almond, beech nut, black walnut, Brazil nut, butternut, cashew, chestnut, chinquapin, English walnut, filbert (hazelnut), hickory nut, macadamia nut (bush nut), pecan, pistachio] – Winter Dormant Applications

Tangent will provide postemergence burndown and residual weed control of the weeds listed below. For short-term (2 to 3 months) residual weed control, apply Tangent at 1 fl oz per acre in combination with glyphosate, glufosinate or paraquat. Broader spectrum weed control can be achieved by using appropriate tank mix partners such as oxyfluorfen (GoalTender or Goal 2XL), isoxaben (Gallery) (non-bearing tree nuts), pendimethalin (Prowl H20), oryzalin (Surflan), or flumioxazin (Chateau) for the best preemergence control of susceptible weeds. For longer term (4 to 6 months) residual weed control, apply Tangent at 2 fl oz per acre in combination with glyphosate, glufosinate or paraquat. Broader spectrum weed control can be achieved by using appropriate tank mix partners such as oxyfluorfen (GoalTender or Goal 2XL), isoxaben (Gallery) (non-bearing tree nuts), pendimethalin (Prowl H20), oryzalin (Surflan), or flumioxazin (Chateau) for the best preemergence control of susceptible weeds. For best weed control, apply Tangent during the winter dormant period following final harvest up to March 15. If needed, a sequential application of Tangent at 1 fl oz per acre, applied with an appropriate postemergence tank mix partner, can be applied in the spring up to 60 days prior to harvest. When tank mixing Tangent with other registered products, read and carefully follow all applicable use directions, precautions, and limitations on the respective product labels.

Weeds Controlled

Common Name

burclover, California
 celery, wild
 chickweed, common
 clover, white
 cudweed, purple
 dandelion
 evening-primrose, cutleaf
 fiddleneck, coast
 fleabane, hairy
 fleabane, dwarf
 groundsel, common
 henbit
 lambsquarters, common
 lettuce, prickly
 loosestrife, loosed-leaf
 maretail/horseweed
 mustard, black
 mustard, Indian
 mustard, wild
 nightshade, black
 pigweed species
 pineappleweed
 purslane, common
 radish, wild
 redmaids
 rocket, London
 shepherdspurse
 smartweed, Pennsylvania
 sowthistle, annual
 storksbill, long
 willowherb

Scientific Name

Medicago polymorpha
Apium leptophylla
Stellaria media
Trifolium repens
Gnaphalium purpureum
Taraxacum officinale
Oenothera laciniata.
Amsinckia menziesii var. intermedia
Conyza bonariensis
Conyza ramosissima
Senecio vulgaris
Lamium amplexicaule
Chenopodium album
Lactuca serriola
Lythrum hyssopifolia
Conyza canadensis
Brassica nigra
Brassica juncea
Sinapis arvensis
Solanum nigrum
Amaranthus spp.
Matricaria discoidea
Portulaca oleracea
Raphanus raphanistrum
Calandrinia ciliata
Sisymbrium irio
Capsella bursa-pastoris
Polygonum pennsylvanica
Sonchus oleraceus
Erodium botrys
Epilobium spp.

Weeds Suppressed

Common Name

barnyardgrass
 filaree, redstem
 knotweed
 mallow, common
 mallow, little
 pepperweed, perennial
 sowthistle, perennial
 speedwell
 spurge, prostrate
 spurge, spotted

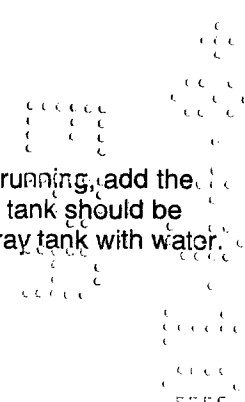
Scientific Name

Echinochloa crus-galli
Erodium cicutarium
Polygonum aviculare
Malva neglecta
Malva parviflora
Lepidium latifolium
Sonchus arvensis
Veronica spp.
Chamaesyce prostrata
Chamaesyce maculata

Mixing Directions

Tangent - Alone

Fill the spray tank at least one-third full of clean water. With the pump and agitator running, add the specified amount of herbicides to the spray tank. The order of addition to the spray tank should be wettable powders first, flowables second and liquids last. Complete filling of the spray tank with water. Maintain agitation until spraying is completed.



Spray equipment should be calibrated carefully before each use. Dosages listed on this label are for broadcast application. Tangent should be applied as a uniform broadcast application to the crop floor or as a uniform band at the base of the trunk. For banded application, the amount of Tangent used per acre should be reduced according to the following formula:

$$\frac{\text{Band Width (in inches)}}{\text{Row Width (in inches)}} \times \text{Rate per Broadcast Acre} = \text{Amount Needed per Acre for Banded Application}$$

Tank Mix Precautions:

- Read and carefully follow all applicable use directions, precautions, and limitations on the respective product labels. In interpreting the labels of tank mixed products, the most restrictive label limitations must apply.
- Do not exceed specified application rates. Do not tank mix with another pesticide product that contains the same active ingredient as this product unless the label of either tank mix partner specifies the maximum dosages that may be used.

Tank Mix Compatibility Testing: A jar test is recommended prior to tank mixing to ensure compatibility of this product and other pesticides. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Tangent – Tank Mixes

For broader spectrum postemergence control of grass and broadleaf weeds, a tank mixture of Tangent with either glyphosate, glufosinate or paraquat should be used. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product labels. In interpreting all labels for the tank mixture, the most restrictive labels must apply.

For preemergence control of susceptible grass and broadleaf weeds in tree nut or vine plantings, a tank mixture of Tangent with oxyfluorfen (GoalTender, Goal 2XL), isoxaben (Gallery) (non-bearing tree nuts and grapevines), diuron (Karmex), pronamide (Kerb[®] herbicide), simazine, norflurazon (Solicam), flumioxazin (Chateau), oryzalin (Surflan) or pendimethalin (Prowl) can be applied. Contact postemergence herbicides such as glyphosate, glufosinate or paraquat should also be added to the tank mixture. Check product labels of the above tank mix partners to determine suitability, restrictions and use rates. When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product labels. In interpreting all labels for the tank mixture, the most restrictive labels must apply.

Tank Mix Compatibility Testing: When tank mixing Tangent with other materials, a compatibility test (jar test) using relative proportions of the tank mix ingredients should be conducted prior to mixing ingredients in the spray tank. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Mixing Order: Fill the tank with water to 1/4 to 1/3 of the required spray volume. Start the agitation. Different formulation types should be added in the following order: dry flowables (DF), wettable powders (WP), aqueous suspensions (AS), flowables (F), or liquids (L). Allow each product type to completely disperse before adding another. Continue agitation and fill tank to 3/4 full, add the correct quantity of Tangent and mix thoroughly. Finally, add any solution (S) formulations, agitate and finish filling. Maintain agitation during filling and during application. If spraying and agitation must be stopped before the tank is empty, suspended materials may settle to the bottom. It is important to resuspend all of the settled material before continuing application. A sparger agitator is particularly useful for this purpose. Do not allow tank mixes to set overnight.

Preemergence Weed Control

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Apply the specified rate of Tangent in a broadcast spray volume of water per acre using calibrated spray equipment capable of uniform application to the soil surface. Seedling weeds are controlled as they come in contact with the soil applied herbicide during emergence. Preemergence weed control is most effective when Tangent is applied to soil surfaces that are clean (free of crop or weed residues or clippings) and weed free. Prior to application, weed or crop residues should be removed by thorough incorporation into the soil using tillage equipment or by removing them from the area to be treated. At least 0.5 inch of irrigation or rainfall is required to activate Tangent and should occur within two weeks after application. For optimum results, Tangent should be applied to prepared beds or soil surfaces that will be left undisturbed during the time period for which weed control is desired. Cultural practices that disturb or redistribute surface soil following treatment with Tangent such as cutting water furrows will reduce weed control effectiveness. Broader spectrum weed control can be achieved by using appropriate tank mix partners such as oxyfluorfen (GoalTender or Goal 2XL), isoxaben (Gallery) (non-bearing tree nuts and grapevines), pendimethalin (Prowl H2O), oryzalin (Surflan), or flumioxazin (Chateau) for the best preemergence control of susceptible weeds.

Preemergence Application Rates and Rate Ranges: Where a rate range is given, use a lower rate in the rate range on coarse texture soils with light weed infestations and for reduced lengths of residual weed control. Use a higher rate in the rate range on medium to fine texture soils, heavy weed infestations, or for extended residual preemergence weed control.

Postemergence Weed Control

Apply the specified rate of Tangent in a broadcast spray volume of 20 gallons or more of water per acre (a minimum of 10 gallons if applying Tangent in tank mix with glyphosate). Complete and uniform coverage of weed foliage is essential for optimum postemergence control. Increase the spray volume to ensure complete and uniform coverage as weed height and density increases or in the presence of heavy trash (weed or crop residue). Postemergence applications of Tangent are most effective when made to weeds at the seedling stage. Applications made later than the 4-inch or 4 leaf stage may result in partial control or suppression.

The addition of 1 quart per acre crop oil concentrate or methylated seed oil, or 0.25% v/v (2 pints per 100 gallons of spray) of an 80% active nonionic surfactant labeled for application to growing crops, is required for effective postemergence herbicidal control of susceptible emerged weeds.

For control of emerged grass and broadleaf weeds, or susceptible weeds greater than 4-inch or 4 leaf stage, postemergence applications of Tangent should be mixed with a broad spectrum, postemergence foliar herbicide. Such products include glyphosate, glufosinate and paraquat type products.

Postemergence Application Rates: Where a rate range is given, use a higher rate in the rate range for heavy weed infestations, weeds in advanced stages of growth, or for extended residual preemergence weed control following control of existing emerged weeds.

Application Instructions

Standard Volume Broadcast Application

Apply in a spray volume of 20 gpa or more (a minimum of 10 gallons if applying Tangent in tank mix with glyphosate). Use a higher application volume when complete and uniform application must be ensured. Use low pressure and ground application equipment capable of delivering a uniform spray droplet. To improve foliar spray coverage, the addition of a crop oil concentrate or methylated seed oil (MSO) at the rate of 1 quart per acre or 0.25% v/v (2 pints per 100 gallons of spray) of an 80% active nonionic surfactant labeled for application to growing crops is required.

Calibrate application equipment prior to use according to manufacturer's directions. Avoid skips or overlaps as poor weed control or plant injury may occur.

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When tank mixing, read and carefully follow all applicable use directions, precautions, and limitations on the respective product labels. In interpreting all labels for the tank mixture, the most restrictive labels must apply.

Rates and Timing of Application

For best weed control, apply Tangent at 1 to 2 fl oz per acre during the winter dormant period following final harvest up to March 15 in tree nut [almond, beech nut, black walnut, Brazil nut, butternut, cashew, chestnut, chinquapin, English walnut, filbert (hazelnut), hickory nut, macadamia nut (bush nut), pecan, pistachio] and grapevine crops. A sequential application of 1 fl oz per acre can be applied up to 60 days prior to harvest. See specific crop use directions.

If Tangent is not applied during the winter dormant period, Tangent can be applied at 1 to 2 fl oz per acre as a non-dormant application applied up to 60 days prior to harvest. Apply no more than 3 fl oz per acre of Tangent per growing season. Allow a minimum of 30 days between sequential applications of Tangent. Tangent can be applied up to 60 days prior to harvest.

The best weed control results are obtained when Tangent is applied preemergence to susceptible weeds or postemergence to small, actively growing weeds. Extreme growing conditions such as drought or near freezing temperatures prior to, at, or following time of application may reduce weed control. Broadleaf weed species germinate at different times.

Spray Drift Management

Avoiding spray drift is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. Make applications only when there is little or no hazard from spray drift. The applicator, crop consultant, and grower are responsible for considering all of these factors when making the decision to apply this product.

Avoid all direct or indirect contact with non-target plants. Do not apply near desirable vegetation. Allow adequate distance between target area and desirable plants to minimize exposure.

Weed Resistance and Integrated Pest Management

The mode of action of Tangent is the inhibition of the acetolactate synthase (ALS) enzyme. Weed populations may develop biotypes that are resistant to different herbicides with the same mode of action. If herbicides with the same mode of action are used repeatedly in the same field, resistant biotypes may eventually dominate the weed population and may not be controlled by these products. Other resistance mechanisms, such as enhanced metabolism, may also exist and may cause reduced weed control.

This product should be used as part of an Integrated Pest Management (IPM) program that may include biological, cultural, and chemical practices aimed at preventing economic pest damage. Application of this product should be based upon appropriate IPM and resistance management strategies and practices that delay or reduce the development of resistant weed biotypes. Such practices include field scouting, mechanical weed control, tank mixes of multiple herbicide products with multiple modes of action, correct weed pest identification, following rotational practices outlined on pesticide labels, and treating when target weed populations are at the correct stage and economic thresholds for control. Tangent can be applied in two applications per season (from harvest to harvest).

To delay development of herbicide resistance, the following practices are recommended:

- Always use at least the minimum rate specified by the label and observe all use rate instructions.
- Herbicides with the same mode of action should not be used in sequential applications unless tank mixed with an alternative mode of action product that is effective on the target weeds.
- ALS herbicides should not be used in consecutive years unless alternated or tank mixed with non-ALS herbicides.
- Herbicides should be used based upon an IPM program.
- Monitor treated areas and control escaped weeds.

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- Contact local extension or crop advisor for IPM and resistance management information.

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- (1) Refund of purchase price paid by buyer or user for product bought, or
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