

7969-281

09/11/2009

4/16



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

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Mr. Rodney C. Akers
Product Registration
BASF Corporation, Agricultural Products
PO Box 13528
Research Triangle Park, NC 27709-3528

SEP 11 2009

SUBJECT: Application for Pesticide Notification (PRN 98-10)
Request Alternate Brand Name "Frequency Herbicide" and General Label
Change (Comply w/ Agency letter dated March 16, 2009)
EPA Reg. No. 7969-281
Application Dated July 16, 2009

Dear Registrant:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated 07/16/09 for the above product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action(s) requested fall within the scope of PRN 98-10. The label submitted with the application has been stamped "Notification" and will be placed in our records.

If you have any questions, please call me directly at 703-305-6249 or Owen F. Beeder of my staff at 703-308-8899.

Sincerely,

A handwritten signature in black ink, appearing to read "Linda Arrington".

Linda Arrington
Notifications & Minor Formulations Team Leader
Registration Division (7505P)
Office of Pesticide Programs



United States
Environmental Protection Agency
Washington, DC 20460

Registration
Amendment
 Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number BASF Corporation/7969-281	2. EPA Product Manager Ms. Joanne I Miller	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) BASF Corporation/Topramezone 2.8 SC	PM# 23	
5. Name and Address of Applicant (Include ZIP Code) BASF Corporation P.O. Box 13528 Research Triangle Park, NC 27709-3528 <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: <input checked="" type="checkbox"/> EPA Reg. No. _____ 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.

NOTIFICATION
SEP 11 2009

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

Change to an alternate product name from Topramezone 2.8 SC specialty products herbicide to Frequency herbicide. Corrections made to the master label for Topramezone 2.8 SC specialty products herbicide (EPA Reg No, 7969-281) as required in Agency letter dated 16 March 2009.

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2. Type of Container <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
* Certification must be submitted		If "Yes" Unit Packaging wgt. No. per container	If "Yes" Package wgt. No. per container

3. Location of Net Contents Information
 Label Container

4. Size(s) Retail Container
Multiple sizes

5. Location of Label Directions
 On Label
 On Labeling accompanying product

6. Manner in Which Label is Affixed to Product
 Lithograph
 Paper glued
 Stenciled Other _____

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)

Name Rodney C. Akers	Title Product Reg. Manager	Telephone No. (Include Area Code) (919) 547-2830
-------------------------	-------------------------------	-----------------------------------------------------

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.

2. Signature <i>Rodney C. Akers</i>	3. Title Product Registration Manager	6. Date Application Received (Stamped)
4. Typed Name Rodney C. Akers	5. Date July 16, 2009	

Certification with Respect to Label Integrity

version: 9/11/02

I certify that the information (including, but not limited to, text, tables, and graphics) contained in the electronic file identified below by file name and submitted with this certification is the same information as that on the paper copies of these documents included with this submission.

PROPOSED LABEL		
EPA Registration #	Date Submitted to EPA	Electronic file name
7969-281	July 16, 2009	0079-00281.20080415b

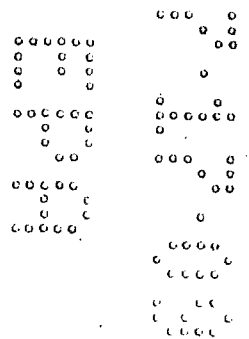
I certify that the statements that I have made on this form are true, accurate, and complete. I acknowledge that any knowingly false or misleading statements may be punishable by fine or imprisonment or both under applicable law.

Rodney C. Akers
Signature

07/16/2009
Date

Rodney C. Akers
Name (typed)

Global Regulatory Manager
Title





The Chemical Company

July 16, 2009

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Ms. JoAnne I. Miller
Product Management (23)
Registration Division (H-7505C)
Office of Pesticide Programs
U.S. Environmental Protection Agency
2777 S. Crystal Drive
Arlington, VA 22202

RE: Topramezone 2.8 SC specialty product herbicide (EPA Reg. No. 7969-281)
Alternate Name from Topramezone 2.8 SC specialty product herbicide to Frequency herbicide
BASF Response to EPA Letter of March 16, 2009
Label Changes as Instructed

Dear Ms. Miller:

This letter is in response to a decision made by the EPA Front-In-Screen to a BASF notification for Topramezone label submitted May 29, 2009. As we discussed through emails, I think I confused the issue when I also asked for a time extension for a storage stability study in the same notification letter. Probably due to the 4th of July holiday, I received the EPA response last week. As previously stated, I made the following changes to the Topramezone 2.8 SC specialty products herbicide label **as instructed in your letter of March 16, 2009:**

- Added the phrase "EPA Reg. No. 7969-281."
- Deleted from the front panel "and for the establishment and maintenance of wildlife openings".
- Deleted the front panel "including areas within these sites that may be grazed or cut for hay".
- Under General Restrictions and Limitations, deleted the phrase, "Do not graze or feed treated grass forage, silage or fodder for at least 45 days after and application." and replaced with "Do not apply to areas that can be grazed or cut for hay."
- In the Hazards to Humans section, deleted the phrase "Wash thoroughly with soap and water after handling."
- In the PPE section, added "Goggles, face shield or safety glasses."
- In the Environmental Hazards section, deleted the paragraph "Do not discharge effluent ... or the Regional Office of the EPA." and added "This product is toxic to aquatic and terrestrial plants. Minimize exposure to nontarget plants and do not apply when weather conditions favor drift from target areas."



The Chemical Company

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- A Non-Agricultural Use Requirements box was added below the Agricultural Use Requirements box:

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPA applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

- In addition, all the entry restrictions, notifications requirements, or other statements and instructions (except personal protective equipment requirements) that apply to the non-WPS uses on the label were added into the Non-Agricultural Use Requirements box:

Do not enter or allow people (or pets) to enter the treated area until sprays have dried. 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.

- Under Field-Grown Ornamentals and Table 3, Tolerant Ornamental Species, the text has been revised to remove the word "safe" as instructed.

In addition, BASF will use Frequency herbicide as an alternate name for Topramezone 2.8 SC specialty.

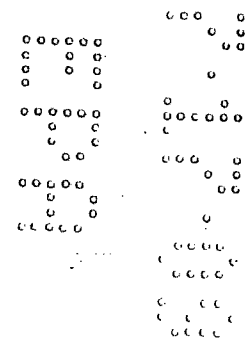
Please find enclosed:

- EPA Application form 8570-1
- Electronic copy of the proposed labeling
- Certification with Respect to Label Integrity
- Proposed label (5 copies)

Thank you. If you should have any questions, please feel free to call me at (919) 547-2830.

Best regards,

Rodney C. Akers, Ph.D.
Global Regulatory Manager
Phone 919-547-2830
Fax: 919-547-2850
Email: rodney.akers@basf.com



enclosures

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Frequency™ herbicide

NOTIFICATION

SEP 11 2009

For preemergence and postemergence weed control in Christmas tree, conifer, and hardwood plantations; field-grown ornamental production; and noncropland areas such as railroad, utility, highway, and pipeline rights-of-way; highway guardrails, delineators, and sign posts; utility substations, petroleum tank farms, pumping installations, farmyards and around farm buildings; fence rows, storage areas, airports, and nonirrigation ditchbanks

Active Ingredient:

topramezone: [3-(4,5-dihydro-isoxazolyl)-2-methyl-4-(methylsulfonyl)phenyl](5-hydroxy-1-methyl-1H-pyrazol-4-yl)methanone 29.7%

Other Ingredients: 70.3%

Total: 100.0%

(1 gallon contains 2.8 pounds of topramezone free acid)

EPA Reg No. 7969-281

EPA Est. No.

KEEP OUT OF REACH OF CHILDREN CAUTION/PRECAUCIÓN

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

In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).

See inside for **First Aid, Precautionary Statements, Directions For Use, and Conditions of Sale and Warranty.**

Net Contents:

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709



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FIRST AID	
If in eyes	<ul style="list-style-type: none"> • Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after first 5 minutes; then continue rinsing eyes. • Call a poison control center or doctor for treatment advice.
If swallowed	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have a 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 to 20 minutes. • Call a poison control center or doctor for treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).	

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

CAUTION

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

PERSONAL PROTECTIVE EQUIPMENT (PPE)

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

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves **Category A**
- Shoes plus socks
- Goggles, face shield, or safety glasses

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. **DO NOT** reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

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

ENVIRONMENTAL CONTROLS STATEMENT

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.

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

This product is toxic to aquatic and terrestrial plants. Minimize exposure to nontarget plants and **DO NOT** apply when weather conditions favor drift from target areas.

Product must be used in a manner that will prevent back-siphoning in wells, spills or improper disposal of excess pesticide, spray mixtures or rinsate.

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
- Chemical-resistant gloves **Category A**
- Shoes plus socks

NONAGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

DO NOT enter or allow people or pets to enter the treated area until sprays have dried.

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.

All applicable directions, restrictions, precautions and **Conditions of Sale and Warranty** are to be followed. This labeling must be in the user's possession during application.

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal.

Pesticide Storage. Store product in original container only. Store product in a cool, dry place. **DO NOT** store this product under wet conditions. If this product has been stored where freezing temperatures have occurred, agitate or mix contents of container well before use. Avoid cross-contamination with other pesticides.

Pesticide Disposal. Wastes resulting from the use of this product may be disposed of on-site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of federal law. If these wastes cannot be disposed of according to label instructions, contact the state agency responsible for pesticide regulation or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal

Nonrefillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake (capacity ≤ 5 gallons) 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.

Triple rinse containers too large to shake (capacity > 5 gallons) 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. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

(continued)

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STORAGE AND DISPOSAL *(continued)*

Pressure rinse as follows: Empty the remaining contents into application equipment or 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.

Refillable Container. Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

Triple rinse as follows: To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. **DO NOT** reuse the container for any other purpose. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location; triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

In Case of Emergency

In case of large-scale spillage regarding this product, call:

CHEMTREC 1-800-424-9300
BASF Corporation 1-800-832-HELP (4357)

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- BASF Corporation 1-800-832-HELP (4357)

GENERAL INFORMATION

Frequency™ herbicide is a broad-spectrum preemergence and systemic postemergence herbicide for control or growth suppression of broadleaf and grass weeds in noncropland areas. When applied as directed, **Frequency** will control or suppress the broadleaf weeds listed in **Table 1. BROADLEAF WEEDS CONTROLLED** and the grass weeds listed in **Table 2. GRASSES CONTROLLED**. **Frequency** may be used for the control of these weeds in bareground programs; Christmas tree, conifer, and hardwood plantations; field ornamental production and selective weeding in areas such as utility, highway, and pipeline rights-of-way, etc. Postemergence applications of **Frequency** must include spray additives (see **ADDITIVES** section and **MIXING ORDER** section of this label for details).

Mode of Action

Frequency is absorbed by leaves, roots, and shoots and translocated to the growing points of sensitive weeds to provide control of emerged weeds. **Frequency** controls weeds by inhibiting carotenoid biosynthesis (HPPD inhibitor). Temperatures and moisture conditions for active plant growth are important for optimum **Frequency** activity. **Frequency** applications to weeds during periods of stress conditions, such as cold temperatures and/or drought, may result in reduced performance.

Herbicide Resistance

Repeated applications of a single mode of action in a weed management plan increase the probability of selecting for naturally occurring biotypes* with less susceptibility to herbicides using that mode of action. Therefore, **Frequency** should be tank mixed with a herbicide having a different mode of action and/or be used in a rotation with herbicides having a different mode of action.

*A weed biotype is a naturally occurring individual within a given species that has a slightly different but distinct genetic makeup from other plants.

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Table 1. BROADLEAF WEEDS CONTROLLED
(apply at 1 to 4 fl ozs/A)

Broadleaf Weeds	Maximum Size (inches) ^a
Amaranth, Palmer	6
Amaranth, Powell	6
Burcucumber	6
Carpetweed	6
Chickweed, common	4
Cocklebur, common	8
Dandelion	6
Galinsoga, hairy	6
Horseweed, (Marestail)	6
Jimsonweed	6
Kochia	6
Lambsquarters, common	6
Mallow, common	3
Mallow, Venice	3 ^b
Morningglory sp.	6 ^b
Mustard sp.	6
Nightshade, black	6
Nightshade, Eastern black	6
Nightshade, hairy	6
Pigweed, prostrate	6
Pigweed, redroot	6
Pigweed, smooth	6
Pigweed, tumble	4
Prickly lettuce	4
Ragweed, common	6
Ragweed, giant	8
Shepherdspurse	4
Sida, prickly	3
Smartweed, ladythumb	3
Smartweed, Pennsylvania	3
Sunflower, volunteer	8
Sunflower, wild (common)	8
Thistle, Canada	6 ^b
Thistle, Russian	4
Velvetleaf	8
Waterhemp, common	6
Waterhemp, tall	6
White clover	3

^a For best control, apply before weeds reach maximum size listed.

^b Growth suppression only.

Table 2. GRASSES CONTROLLED
(apply at 1 to 4 fl ozs/A)

Grass Weeds	Maximum Leaf Stage ¹	Maximum Size (inches) ¹
Barnyardgrass	4	4
Crabgrass, large	4	3
Crabgrass, smooth	4	3
Cupgrass, woolly	3	3
Dallisgrass ²	3	3
Foxtail, giant	4	4
Foxtail, green	3	3
Foxtail, yellow	3	3
Goosegrass	4	3
Johnsongrass, seedling	3	4
Millet, wild proso	3	3
Panicum, fall	3	3
Shattercane	3	4
Signalgrass, broadleaf	3	3

¹ For best control, apply before weeds reach maximum size listed.

² Growth suppression only.

APPLICATION METHODS AND EQUIPMENT

Frequency™ herbicide may be applied by either ground or air. Use adequate spray volume to provide accurate and uniform distribution of spray droplets over the treated area and to avoid spray drift to nontarget areas. Equipment should be adjusted to maintain continuous agitation during spraying with good mechanical or bypass agitation. Avoid overlaps that will increase rates above the maximum use rates specified in this label.

DO NOT exceed a total of 4 fluid ounces per treated acre per season.

The applicator is responsible for any loss or damage that results from spraying **Frequency** in a manner other than that specified in this label. In addition, applicator must follow all applicable state and local regulations and ordinances in regard to spraying.

Coverage

For postemergence applications, weeds must be thoroughly covered with spray. Dense leaf canopies shelter small weeds and can prevent adequate spray coverage.

For optimal weed control, apply **Frequency** before weeds exceed labeled height.

Postemergence applications of **Frequency** should be applied a minimum of 1 hour before rainfall and require the use of spray additives (see **ADDITIVES** section).

Spray Drift

DO NOT apply when weather conditions may cause drift to adjacent crops and vegetation; injury may result if this occurs. To avoid spray drift from treated areas, **DO NOT** make applications when wind speed exceeds 10 mph or during periods of temperature inversions. Use of larger droplet sizes will reduce spray drift. Agriculturally approved drift-reducing additives may also be used.

Ground Application (Broadcast)

Uniformly apply with properly calibrated ground equipment in 10 or more gallons of water per acre. Use higher water volumes treating larger weeds and/or high-density weed infestations.

Ground Application (Banding)

Uniformly apply with properly calibrated ground equipment in 10 or more gallons of water per acre. Use higher water volumes treating larger weeds and/or high-density weed infestations.

For banded applications, use the following formulas to calculate the banded herbicide rate and water volume per acre:

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \text{Broadcast rate per acre} = \text{Banded herbicide rate per acre}$$

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \text{Broadcast volume per acre} = \text{Banded water volume per acre}$$

Spot Treatment

To prepare the spray solutions, thoroughly mix in water 0.25 to 0.5% (0.32 to 0.64 oz/gallon water) **Frequency™ herbicide** plus an adjuvant (see **ADDITIVES** section). A methylated seed oil at 1% by spray volume is the suggested spray adjuvant. When making spot applications, spray coverage should be sufficient to moisten the leaves of the target vegetation, but not to the point of runoff. See section on desired species.

Aerial Application

Uniformly apply with properly calibrated aerial equipment in 2 or more gallons of water per acre. Adequate spray volume must be used to provide accurate and uniform distribution of spray particles over the treated area and to avoid drift of spray particles to nontarget areas. To avoid injury to sensitive crops from drift, aerial applicators must adhere to the following:

Special Aerial Use Directions and Precautions

Applicators are required to use a coarse or coarser droplet size (ASABE S572) or, if specifically using a spinning atomizer nozzle, applicators are required to use a volume mean diameter (VMD) of 385 microns or greater for release heights below 10 feet. Applicators are required to use a very coarse or coarser droplet size or, if specifically using a spinning atomizer nozzle, applicators are required to use a VMD of 475 microns or greater for release heights above 10 feet. Applicators must consider the effects of nozzle orientation and flight speed when determining droplet size.

Nozzles must be pointed toward the rear of the aircraft. The downward angle of the nozzle should not be greater than 20 degrees.

The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter to reduce spray drift.

DO NOT apply when wind speed is greater than 10 mph.

Cleaning Spray Equipment

To avoid injury to sensitive crops, drain and clean application equipment thoroughly using a strong detergent or commercial sprayer cleaner according to the manufacturer's directions; then triple rinse the equipment before and after applying this product.

MANAGING OFF-TARGET MOVEMENT

The following information is provided as general guidance for managing off-target movement. Specific use recommendations for **Frequency** may differ depending on the application technique used and the vegetation management objective.

Spray Drift

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

Spray drift from applying this product may result in damage to sensitive plants adjacent to the treatment area. Only apply this product when the potential for drift to these and other adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or nontarget crops) is minimal. **DO NOT** apply when the following conditions exist that increase the likelihood of spray drift from intended targets: high or gusty winds, high temperatures, low humidity, temperature inversions.

To minimize spray drift, the applicator should be familiar with and take into account the following drift reduction advisory information. Additional information may be available from state enforcement agencies or the Cooperative Extension on the application of this product.

The best drift management strategy and most effective way to reduce drift potential is to apply large droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly or under unfavorable environmental conditions (see **Wind; Temperature and Humidity; and Temperature Inversions**).

Controlling Droplet Size

Volume. Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

Pressure. DO NOT exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

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Number of Nozzles. Use the minimum number of nozzles that provide uniform coverage.

Nozzle Orientation. Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is recommended practice. Significant deflection from the horizontal will reduce droplet size and increase drift potential.

Nozzle Type. Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid-stream nozzles oriented straight back produce the largest droplets and the lowest drift. **DO NOT** use nozzles producing a mist droplet spray.

Application Height

Making applications at the lowest possible height (aircraft, ground-driven spray boom) that is safe and practical reduces exposure of droplets to evaporation and wind.

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the upwind and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the application equipment (e.g. aircraft, ground) upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller droplets, etc.).

Wind

Drift potential is lowest between wind speeds of 3 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 3 mph due to variable wind direction and high inversion potential.

NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud that can move in unpredictable directions due to the light, variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light-to-no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Wind Erosion

Avoid treating powdery, dry, or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.

ADDITIVES

Postemergence applications of **Frequency™ herbicide** require the addition of an adjuvant to achieve optimum weed control.

Always use a methylated seed oil (MSO) or a petroleum-based or vegetable seed-based oil concentrate (COC) with **Frequency**. For best performance across a wide range of environmental conditions, including when weeds are under moisture and/or temperature stress, use of an MSO adjuvant is suggested. Apply these oil-based adjuvant concentrates at the rate of 1.0 to 1.5 gallons per 100 gallons of water (1.0% to 1.5% volume-to-volume [v/v]). Use the higher rate when making an application during periods of hot, dry weather. A nitrogen-based surfactant blend may be used as an alternative or additive to COC or MSO.

Agriculturally approved drift-reducing additives may be used in applications with **Frequency**.

MIXING ORDER

Use only water as a carrier.

WATER

1. Fill the spray tank 1/2 to 3/4 full with clean water.
2. Add the required amount of **Frequency** to the spray tank while agitating.
3. After **Frequency** has visibly dispersed, add spray additives and fill the remainder of the tank with water.

TANK MIX PREPARATION

When tank mixing **Frequency** with registered herbicides, add the other herbicides and other components in the following order while agitating:

1. Fill spray tank 1/2 to 3/4 full with clean water.
2. Add soluble-packet products and thoroughly mix.
3. Add **Frequency** and thoroughly mix.
4. Add WP (wetable powder), DG (dispersible granule), DF (dry flowable), or LF (liquid flowable) formulations.
5. Add EC (emulsifiable concentrate) products.
6. Add spray adjuvants to the spray tank.
7. While agitating, fill the remainder of the tank with water.

GENERAL TANK MIX INFORMATION

Frequency may be used sequentially or tank mixed with other herbicides as part of a complete weed control program. **Frequency** may be tank mixed only in states where the sequential or tank mix product and application site are registered. Refer to **NONCROP USE DIRECTIONS** for more details and for specific tank mix restrictions. Read and follow the applicable restrictions and limitations and

DIRECTIONS FOR USE on all products included in any tank mix. **The most restrictive labeling applies to tank mixes.**

GENERAL RESTRICTIONS AND LIMITATIONS

- No more than 4 fl ozs per acre (0.089 lb ai/acre) of **Frequency™ herbicide** may be applied during the growing season.
- **DO NOT** apply to areas that can be grazed or cut for hay.

NONCROP USE DIRECTIONS

BAREGROUND

Frequency can be used as part of a program for non-selective vegetation control to maintain bareground in noncrop areas that must be kept weed free such as railroad, utility, highway, and pipeline rights-of-way; highway guardrails, delineators, and sign posts; utility substations, petroleum tank farms, pumping installations, fence rows, storage areas, farmyards and around farm buildings and nonirrigation ditchbanks.

Frequency offers residual and postemergence control of susceptible annual broadleaf and grass weeds. Adequate moisture is necessary to activate **Frequency**. Dry weather following application may reduce effectiveness. The actual length of residual control is dependent on factors such as soil type, organic matter, weed pressure and rainfall amounts after application.

Preemergence Applications

Apply **Frequency** at 4 fl ozs per acre prior to weed emergence to control susceptible weeds listed in **Table 1. BROADLEAF WEEDS CONTROLLED** and **Table 2. GRASSES CONTROLLED**. For best performance, tank mix **Frequency** with other residual herbicides such as **Arsenal® PowerLine™ herbicide**, **Pendulum® AquaCap™ herbicide**, **Plateau® herbicide**, **Journey® herbicide**, or diuron.

Early Postemergence Applications

For areas where weed emergence has already occurred, apply **Frequency** at 4 fl ozs per acre prior to weeds reaching the maximum size listed in **Table 1. BROADLEAF WEEDS CONTROLLED** and **Table 2. GRASSES CONTROLLED**. Postemergence applications of **Frequency** require the use of an adjuvant to achieve optimum weed control (see **ADDITIVES** section). To increase postemergence spectrum, **Frequency** can be tank mixed with **Roundup®** (glyphosate). For best residual effects, tank mix with **Arsenal PowerLine**, **Pendulum AquaCap**, **Plateau**, **Journey**, or diuron (refer to respective labels for appropriate use rates).

CHRISTMAS TREE, CONIFER AND HARDWOOD TREE PLANTINGS AND PLANTATIONS

Frequency may be used for selective weed control in Christmas tree plantations and conifer and hardwood plantations. See the following sections for more information on specific uses.

Christmas Tree Plantations

Frequency may be used as a preemergence or directed postemergence application in Christmas tree plantations to control broadleaf and grass weeds listed in **Table 1.**

BROADLEAF WEEDS CONTROLLED and Table 2.

GRASSES CONTROLLED. Apply **Frequency** as a directed spray application either as a uniform broadcast application or as a uniform banded application directed at the base of the trees. If targeting emerged weeds, include spray additives (see **ADDITIVES** section). Spray contact of the needles or buds either directly via improper nozzle orientation or indirectly via physical drift may result in crop injury. **Frequency** may be applied in a single application at a maximum rate of 4 fl ozs/A or in sequential applications up to a maximum seasonal total of 4 fl ozs/A.

DO NOT make over-the-top applications to Christmas trees or injury may occur.

Conifer and Hardwood Plantations

Apply **Frequency** plus the recommended adjuvant (see **ADDITIVES** section for details) for the control of undesirable plants during site preparation operations conducted prior to the planting and establishment of conifer and hardwood plantations and in the year following transplanting.

Site Preparation Application

Frequency may be applied as either a broadcast application or spot treatment during preplant site preparation for the control of undesirable herbaceous broadleaf weed species in plantations at a rate of 4 fl ozs/A in combination with **Chopper® Gen2™ herbicide** at the specified site preparation rate (see **Chopper Gen2** label). Refer to **Table 1. BROADLEAF WEEDS CONTROLLED** and **Table 2. GRASSES CONTROLLED** for specific weed species controlled.

Herbaceous Weed Control

Frequency may be used for selective weeding in conifer and hardwood plantations at a rate of 4 fl ozs/A. Apply 4 fl ozs/A of **Frequency** as a broadcast treatment, banded over tree rows, or as a directed spray for release of young trees from herbaceous weeds (see species controlled in **Table 1. BROADLEAF WEEDS CONTROLLED** and **Table 2. GRASSES CONTROLLED**) in the year following transplanting. For conifers, tank mix with the herbaceous weed control rate of **Arsenal® herbicide Applicators Concentrate** (see **Arsenal herbicide Applicators Concentrate** label). To prevent the possibility of crop tree injury, **DO NOT** apply **Frequency** when trees are under stress from drought, diseases, animal or winter injury, planting shock, or other stresses reducing vigor.

FIELD-GROWN ORNAMENTALS

Frequency™ herbicide may be used to provide control of labeled species in field-grown ornamental production. Established plants listed in **Table 3. TOLERANT ORNAMENTAL SPECIES** are tolerant to **Frequency** when sprayed as directed. However, not all varieties or strains of the plant species listed have been tested. Refer to **INSTRUCTIONS AND RESTRICTIONS IN PRODUCTION ORNAMENTALS** section in this label prior to any application of **Frequency**. Unintentional consequences such as crop injury may result because of certain environmental or growing conditions, manner of use, or application. Therefore, before treating a large number of plants, spray a few plants and observe for plant damage prior to full-scale application. **Frequency** may be applied as a preemergence or directed postemergence application to control weeds listed in **Table 1. BROADLEAF WEEDS CONTROLLED** and **Table 2. GRASSES CONTROLLED**. For improved preemergence spectrum, **Frequency** may be tank mixed with **Pendulum® AquaCap™ herbicide** (see respective label for specific rate information). Post-emergence applications of **Frequency** must include spray additives (see **ADDITIVES** section). **Frequency** may be used in conjunction with herbicides registered for directed postemergence use in ornamentals. Consult the labels of those herbicides for suggested treatments, rates to be used, and precautions or restrictions for use in these areas.

The preemergence efficacy of **Frequency** will improve if the application is followed by 1/2 inch of rainfall or its equivalent in sprinkler irrigation. If **Frequency** is not activated by rainfall or irrigation within 30 days, erratic weed control may result.

Applied according to label directions and under normal growing conditions, **Frequency** solo or tank mix combinations will not cause crop injury. Overapplication can result in crop stand loss, crop injury, or soil residues. Uneven application can decrease weed control or cause crop injury.

Diseases, cold weather, excessive moisture, high soil pH, high soil salt concentration, or drought can weaken plants and increase the possibility of plant damage from **Frequency**.

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INSTRUCTIONS AND RESTRICTIONS¹ IN PRODUCTION ORNAMENTALS (Directed applications only)

Site	Application Instructions and Restrictions
Newly transplanted field-grown nursery stock ^{2,3}	<ol style="list-style-type: none"> 1. Use shielded sprayer until plantings have been established for 1 year or more in the field. 2. DO NOT apply until transplants have been watered and soil has been thoroughly settled around transplants. Care must be taken to ensure there are no cracks in the soil where Frequency could come into contact with the roots. 3. DO NOT apply during bud swell, bud break or at time of first flush of new growth. 4. Direct sprays away from graphed or bud-ded tissue on transplants at all times.
Established container or field-grown nursery stock ^{2,3}	<ol style="list-style-type: none"> 1. DO NOT apply during bud swell, bud break or at time of first flush of new growth. 2. Apply as a directed spray. 3. If newly budded or graphed rootstock, make an application using a shielded sprayer. 4. Care must be taken to ensure there are no cracks in the soil where Frequency could come into contact with the roots.
Greenhouses, shadehouses or other enclosed structures	DO NOT APPLY in greenhouses, shadehouses or other enclosed structures.

¹ Plant only those desirable plant species listed on this label into soil treated the previous season with **Frequency** or injury may occur.

² Before treating a large number of plants, spray a few plants and observe for 1 to 2 months for plant damage prior to full-scale application.

³ **DO NOT** treat plants grown for food or feed. **DO NOT** use treated plants for food or feed.

Table 3. TOLERANT ORNAMENTAL SPECIES

The following established ornamentals are tolerant to **Frequency** sprays when applied as directed. Refer to **INSTRUCTIONS AND RESTRICTIONS IN PRODUCTION ORNAMENTALS** prior to application.

TREES

Common Name	Scientific Name
Eucalyptus (Silver-dollar) tree	<i>Eucalyptus cinerea</i>
Fir, Balsam	<i>Abies balsamiae</i>
Fir, Douglas	<i>Pseudotsuga menziesii</i>
Fir, Fraser	<i>Abies fraseri</i>
Fir, white	<i>Abies concolor</i>
Pine, Austrian	<i>Pinus nigra</i>
Pine, Italian stone	<i>Pinus pinea</i>
Pine, loblolly	<i>Pinus taeda</i>

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Table 3. TOLERANT ORNAMENTAL SPECIES (continued)

TREES	
Common Name	Scientific Name
Pine, Monterey	<i>Pinus radiata</i>
Pine, red	<i>Pinus resinosa</i>
Pine, Scotch	<i>Pinus sylvestris</i>
Pine, Virginia	<i>Pinus virginiana</i>
Pine, white	<i>Pinus strobus</i>
Spruce, Colorado blue	<i>Picea pungens</i>
Spruce, dwarf Alberta	<i>Picea glauca</i> 'albertiana'
Spruce, Norway	<i>Picea abies</i>
Spruce, white	<i>Picea glauca</i>

SELECTIVE WEEDING

Frequency™ herbicide may be used for selective weed control in unimproved and native cool season grass (such as bluegrass and fescue) and select native warm season grass (such as little and big bluestem) in highway road-sides, utility rights-of-way, railroad crossings, airports, nonirrigation drainage ditches, and other industrial non-cropland sites. Refer to **Table 4. TOLERANT PERENNIAL GRASS SPECIES** for a complete list of tolerant perennial grass species. For best control, apply as an early post-emergence application before weeds reach the maximum sizes listed in **Table 1. BROADLEAF WEEDS CONTROLLED** and **Table 2. GRASSES CONTROLLED**.

Postemergence applications of **Frequency** must include spray additives (see **ADDITIVES** section). For increased residual weed control, use the 4 fl ozs/A rate. Sequential applications may be made up to a maximum seasonal total of 4 fl ozs/A. For improved spectrum, **Frequency** may be tank mixed with other registered products such as **Overdrive® herbicide** to broaden the weed control spectrum.

Perennial Grass Tolerance

Frequency should be applied during favorable growing conditions for optimum grass tolerance and weed control. Grass under environmental stress is more likely to show injury from any herbicide application. Rarely, plants under these conditions treated with **Frequency** may show some transient bleaching of the portion of the leaves intercepting the spray application. These symptoms are temporary and occur infrequently; growth is not affected.

Applications of **Frequency** on Bermudagrass will result in bleaching and severe injury. If treating grasses not listed in **Table 4. TOLERANT PERENNIAL GRASS SPECIES**, it is suggested that applications be made on a small area to test grass response and tolerance.

Table 4. TOLERANT PERENNIAL GRASS SPECIES

Common Name	Scientific Name
Big bluestem	<i>Andropogon gerardii</i>
Centipedegrass	<i>Eremochloa ophiuroides</i>
Chewings fescue	<i>Festuca rubra</i>
Creeping red fescue	<i>Festuca rubra</i>
Hard fescue	<i>Festuca longifolia</i>
Indiangrass	<i>Sorghastrum nutans</i>
Kentucky bluegrass	<i>Poa pratensis</i>
Little bluestem	<i>Schizachyrium scoparium</i>
Perennial ryegrass	<i>Lolium perenne</i>
Tall fescue	<i>Festuca arundinacea</i>
Eastern gamagrass	<i>Tripsacum dactyloides</i>

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The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

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007969-00281.20080415b.NVA 2008-04-325-0019

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