

62719-547

8/6/2009

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

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

6 AUG 2009

Mr. Rafael Herrera  
Regulatory Leader  
Dow AgroSciences LLC  
9330 Zionsville Road  
Indianapolis, IN 46268-1054

Mr. Herrera:

RE: SAPHIRE (A.I. PENOX SULAM); EPA REG. NO. 62719-547; ADMINISTRATIVE  
LETTER DATED MAY 6, 2009; SAPHIRE LABEL DATED MAY 5, 2009

Your amended label request for Sapphire, with EPA Reg. No. 62719-547, dated May 5, 2009 is approved. A stamped copy of the label without comments is enclosed.

For additional assistance in this matter, please contact Phil Errico at 703-305-6663/  
[Errico.Philip@epa.gov](mailto:Errico.Philip@epa.gov).

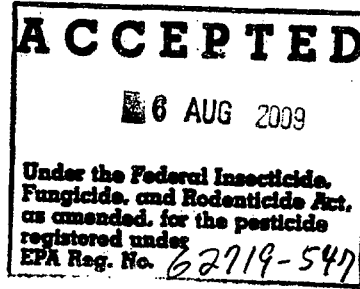
Regards,

A handwritten signature in black ink that reads "Joanne I. Miller".

Joanne I. Miller, PM-23  
Herbicide Branch/Registration Division 7505P

Enclosure: Stamped Accepted Label For Sapphire, EPA Reg. No. 62719-547, With No  
Comments.

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(Base label):

**Sapphire<sup>®</sup>**  
**Specialty Herbicide**

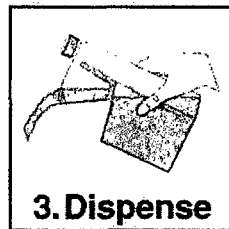
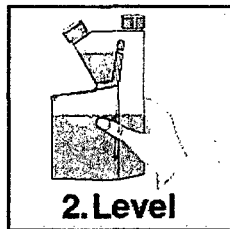
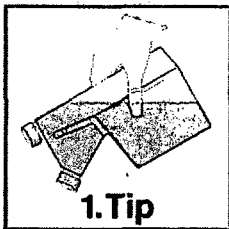
**For postemergence control of annual and perennial broadleaf weeds in established turfgrass, such as residential lawns, golf courses, sports fields, sod farms and around commercial buildings and other commercial turfgrass areas**

Active Ingredient:

penoxsulam: 2-(2,2-difluoroethoxy)-N-(5,8-dimethoxy[1,2,4] triazolo[1,5c]pyrimidin-2-yl)-6-(trifluoromethyl)benzenesulfonamide .....	3.68%
Other Ingredients .....	96.32%
Total .....	100.00%

Contains 0.31 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.]



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

Keep Out of Reach of Children

**CAUTION**

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**Precautionary Statements**

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**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

Remove and wash contaminated clothing before reuse. 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.

### 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.

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**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.

**(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. 62719-547

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):

# Sapphire®

## Specialty Herbicide

**For postemergence control of annual and perennial broadleaf weeds in established turfgrass, such as residential lawns, golf courses, sports fields, sod farms and around commercial buildings and other commercial turfgrass areas**

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Other Ingredients .....	96.32%
Total .....	100.00%

Contains 0.31 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.**

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


**Net Contents** \_\_\_\_\_

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[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 on head and pour into sprayer or other device. 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

Remove and wash contaminated clothing before reuse. 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**

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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 sprays have dried.

### 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



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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:**

**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

Sapphire<sup>®</sup> specialty herbicide provides postemergence control of annual and perennial broadleaf weeds in established turfgrass, such as residential lawns, golf courses, sports fields, sod farms and around commercial buildings and other commercial turfgrass areas. Susceptible weeds emerged at the time of application will be controlled. A spray volume of 20 gallons per acre (gpa) or more and uniform coverage are required for optimum performance. Sapphire is rainfast within one hour after application and has soil residual herbicidal activity dependent upon weed species, soil type, soil moisture (rainfall or irrigation after application) and the rate of application.

## General Use Precautions and Restrictions

- Do not apply Sapphire to golf course putting greens or tees.
- Do not allow tank mixes of Sapphire to sit overnight.
- Do not apply Sapphire directly to, or otherwise permit Sapphire to come into contact with, flowers, ornamental shrubs or trees, or other desirable broadleaf plants, as serious injury may occur. Do not permit spray mists containing Sapphire to drift onto desirable broadleaf plants.
- Do not collect grass clippings for use as mulch around plants.
- Do not apply more than 0.5 pint of Sapphire (0.02 lb ai penoxsulam) per acre per application to perennial ryegrass and tall fescue and only if some injury can be tolerated.
- Do not allow sprays of Sapphire to contact exposed suckers or exposed roots of shallow rooted trees and shrubs or injury may occur.
- To minimize the potential for grass injury, additional applications should not be made within four weeks of a previous application.
- Do not apply more than 2.3 pints of Sapphire (0.09 lb ai penoxsulam) per acre per annual growing season.
- Tank mix a quality nonionic surfactant with all applications of Sapphire.
- Use this product strictly in accordance with the drift and runoff precautions on this label in order to minimize off-site exposure.
- **Chemigation:** Do not apply this product through any type of irrigation system.

## Treatment on Turfgrass Species Not Listed on the Label for Sapphire

Users who wish to use Sapphire on turfgrass species not listed on this label may determine the suitability for use by treating a small area at a specified rate. Prior to treatment of larger areas, the treated area should be observed for any sign of herbicidal injury during 30 days of normal growing conditions to determine if the target turfgrass species is tolerant. The user assumes responsibility for any plant damage or other liability resulting from use of Sapphire on turfgrass species not listed on this label.

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Use **Sapphire** on the following established turfgrass species (numbers in parentheses (-) refer to footnotes below):

#### Established Cool Season Turfgrass (1)

Common Name	Scientific Name
bentgrass	<i>Agrostis</i> species
bluegrass, Kentucky	<i>Poa pratensis</i>
fescue, chewing	<i>Festuca rubra</i> var. <i>commutata</i>
fescue, creeping red	<i>Festuca rubra</i>
fescue, sheeps	<i>Festuca ovina</i>
fescue, tall (2)	<i>Festuca arundinaceae</i>
ryegrass, perennial (2)	<i>Lolium perenne</i>

#### Established Warm Season Turfgrass (3)

Common Name	Scientific Name
bahiagrass	<i>Paspalum notatum</i> var. <i>saurae</i> <i>parodi</i>
bermudagrass (common or hybrid)	<i>Cynodon dactylon</i>
centipedegrass	<i>Eremochloa ophiuroides</i>
fescue, tall (growing in warm season areas) (2)	<i>Festuca arundinaceae</i>
kikuyugrass	<i>Pennisetum clandestinum</i>
seashore paspalum	<i>Paspalum vaginatum</i>
St. Augustinegrass	<i>Stenotaphrum secundatum</i>
zoysiagrass	<i>Zoysia japonica</i>
zoysiagrass	<i>Zoysia tenuifolia</i>

1. Use no more than 1 pint of Sapphire (0.04 lb ai penoxsulam) per acre per application.
2. Use Sapphire on these species at a maximum rate of 0.5 pint (0.02 lb ai penoxsulam) per acre per application and only if some injury can be tolerated. A yellowing of turfgrass may occur within two weeks of application. The discoloration is generally gone within four weeks of treatment under adequate growing conditions. Stress to the turfgrass such as heat and drought may increase the potential for turfgrass injury. Under these conditions, more injury may be possible to perennial ryegrass and tall fescue. Use of the 0.25 pint (0.01 lb ai penoxsulam) per acre may reduce potential for turfgrass injury.
3. Use no more than 1.5 pints of Sapphire (0.06 lb ai penoxsulam) per acre per application.

#### 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. Low humidity and high temperatures increase the evaporation rate of spray droplets and, therefore, the likelihood of increased 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.

**Sensitive Areas:** The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., bodies of water, known habitat for threatened or endangered species, non-target plants) is minimal (e.g., when wind is blowing away from the sensitive areas).

#### Weeds Controlled or Suppressed

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Generally, application rates at the lower end of the rate range will be satisfactory for young, succulent growth of sensitive weed species. For less sensitive species, perennials, and under conditions where control is more difficult (plant stress conditions such as drought or extreme temperatures, dense weed stands and/or larger weeds), the higher rate within the rate range or repeat applications will be needed. Weeds growing in the absence of competition from other vegetation generally require higher rates or repeat applications to obtain satisfactory control or suppression.

Weeds Controlled or Suppressed		Rate	
		pt/acre	fl oz/1000 sq ft
English lawn daisy <sup>1</sup>		0.25 – 1.5	0.09 – 0.55
burdock	lambsquarters	0.5 – 1.5	0.18 – 0.55
chickweed (common)	lespedeza, common		
chickweed (mouseear)	matchweed		
clover, hop	medic, black		
clover, red	plantain, broadleaf		
clover, white	plantain, buckhorn		
cocklebur, common	purslane, common		
coffeeweed	ragweed, common		
common vetch	round leaf mallow		
creeping beggarweed	sheep sorrel		
curly dock	shepherd's purse		
dandelion, common	smartweed		
dollarweed	spotted catsear		
dwarf beggarweed	spurweed		
false dandelion	Virginia buttonweed		
Florida betony	Virginia pepperweed		
goldenrod	wild violet		
hawkweed	woodsorrel, creeping		
henbit	woodsorrel, yellow		
ivy, ground			
kyllinga, annual and green (suppression only) <sup>2</sup>	nutsedge, yellow <sup>2</sup>	1 – 1.5	0.37 – 0.55
nutsedge, purple <sup>2</sup>			

<sup>1</sup>**Special use instructions for controlling English lawn daisy:**

- Late summer/fall applications of Sapphire have shown to provide better control of English lawn daisy than spring applications.
- Irrigate the day before applications are planned to assure turfgrass and English lawn daisy are not stressed.
- Make two to three applications on a 28-day interval at 0.25 to 0.5 pints of product per acre. Use the higher rate when heavy English lawn daisy populations are observed.
- Tank mix a quality nonionic surfactant with all applications of Sapphire.
- Perennial ryegrass and tall fescue have demonstrated sensitivity to Sapphire. Where these varieties are dominant, multiple applications of 0.25 pint of Sapphire (0.01 lb ai penoxsulam) per acre provide control of English lawn daisy while minimizing turfgrass injury potential. If unsure of the varietal composition of the golf course or turfgrass area, initial testing with Sapphire on a small turfgrass area prior to treatment of large turfgrass areas may be warranted.

<sup>2</sup>Re-treatment may be necessary.

## Mixing Instructions

### Sapphire - Alone

Fill spray tank with water equal to 1/2 to 3/4 of the required spray volume. Start agitation. Add the required amount of Sapphire, then finish filling the tank. Continue agitation while filling spray tank to required volume and during application.

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**Sapphire - Tank Mix**

Sapphire may be applied in tank mix combination with other herbicides labeled for use on turfgrass to control additional weeds. Tank mixing or using Sapphire with any other product not specifically and expressly authorized by the label shall be the exclusive risk of the user, applicator and/or application advisor. When tank mixing, follow label directions, including application rates, use precautions and limitations on each respective label. Continuous agitation is required for tank mixes.

**Tank Mix Precautions:**

- 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.
- For other products packaged in water soluble packaging, do not tank mix with products containing boron or mix in equipment previously used to apply a product mixture containing boron unless the tank and spray equipment has been adequately cleaned.
- Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

**Tank Mix Compatibility Testing:** When tank mixing Sapphire 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 Sapphire 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.

**Application Directions****Standard Volume Broadcast Application**

Apply in a spray volume of 20 gpa or more (0.5 gallons or more per 1000 sq ft). Use a higher application volume when complete and uniform application must be ensured, i.e., when Sapphire is tank mixed with foliar fertilizers. If required, spray volume up to 200 gpa may be used.

**Low Volume Application**

Apply in a spray volume of 5 to 20 gpa (0.08 to 0.5 gallons per 1000 sq ft). Use low pressure and application equipment capable of delivering a uniform spray droplet. To improve spray coverage, the addition of a nonionic surfactant at a rate of 1/4 to 1/2 pint per acre is suggested. Use the higher rate of surfactant for lower rates of Sapphire and lower spray volumes.

**Spot Treatments and/or Hand-Held Sprayers**

Spot treatments should be applied at rates equivalent to broadcast applications.

**Hand-Held Sprayers:** When treating a small area, apply Sapphire with a calibrated sprayer that assures accurate, uniform spray distribution. In general, Sapphire should be mixed thoroughly with clean water and applied at 20 to 40 psi in a minimum of 1 gallon of water per 1000 sq ft.

**Rates and Timing of Application**

Apply Sapphire to turfgrass at the rate of 0.25 to 1.5 pint per acre as a ground broadcast treatment or spot treatment. Calibrate application equipment prior to use according to manufacturer's directions. Avoid skips or overlaps as poor weed control or plant injury may occur.

#### Broadcast Rates of Sapphire

Rate pint/acre	Amount (1000 sq ft)	
	fl oz <sup>1</sup>	mL
1.5	0.55	16.5
1	0.37	11.1
0.5	0.18	5.4
0.25	0.09	2.7

<sup>1</sup> 1 fl oz = 29.6 (30) mL

Best weed control results are obtained when Sapphire is applied 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.

Apply Sapphire to newly seeded cool season turfgrass only after the third mowing or after the turfgrass seedlings have tillered and developed an adequate secondary root system. Reseeding is not recommended for at least four weeks after application.

This product may also be applied to newly established warm season turfgrass. Delay treatments until two to four weeks after sodding, sprigging or plugging.

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#### Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. Otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

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#### Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. To the extent permitted by law, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

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#### Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. To the extent permitted by law, all such risks shall be assumed by buyer.

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#### Limitation of Remedies

To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

- (1) Refund of purchase price paid by buyer or user for product bought, or
- (2) Replacement of amount of product used.

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