



**DuPont™ Matrix® SG**  
herbicide



# DuPont<sup>TM</sup> Matrix<sup>®</sup> SG

## herbicide

### WATER SOLUBLE GRANULE

*For Weed Control in Citrus Fruit, Stone Fruit, Tree Nuts, Pome Fruit, Grapes, Potatoes, Potatoes grown for seed, and field grown Tomatoes*

*For Use in Rangeland Restoration West of the Mississippi River*

*For Selective Weed Control and Invasive Species Management in Non-Crop Sites*

<i>Active Ingredients</i>	<i>By Weight</i>
Rimsulfuron	
N-((4,6-dimethoxypyrimidin-2-yl)aminocarbonyl)-3-(ethylsulfonyl)-2-pyridinesulfonamide	25.0%
<i>Other Ingredients</i>	75.0%
TOTAL	100.0%

EPA REG. NO. 352-768      EPA Est. No. \_\_\_\_\_

#### Nonrefillable Container

Net: \_\_\_\_\_

OR

#### Refillable Container

Net: \_\_\_\_\_

### KEEP OUT OF REACH OF CHILDREN

## CAUTION

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

### FIRST AID

#### IF IN EYES:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

#### IF ON SKIN OR CLOTHING:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

**IF SWALLOWED:** No specific intervention is indicated as this product is not likely to be hazardous by ingestion. However, consult a poison control center or doctor if necessary.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-441-3637 for emergency medical treatment information.

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION.** Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco, or using the toilet.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some of the 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-resistant category selection chart.

#### Applicators and other handlers must wear:

- Long-sleeve shirt and long pants.
- Chemical resistant gloves Category A (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber), all > 14 mils.
- Shoes plus socks.

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

### USER SAFETY RECOMMENDATIONS

**USERS SHOULD:** Wash hands before eating, drinking, chewing gum, using tobacco or using toilet.

### 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 by cleaning of equipment or disposal of equipment washwaters or rinsate.

## PRODUCT INFORMATION

DuPont™ MATRIX® SG herbicide must be used only in accordance with instructions on this label or in separate published DuPont labeling. DuPont will not be responsible for losses or damage resulting from use of this product in any manner not specifically instructed by DuPont.

MATRIX® SG herbicide is a water soluble granule formulation that selectively controls certain broadleaf weeds and grasses in pome fruit, citrus fruit, tree nut, stone fruit, and grape crops which have been established for at least one full growing season. MATRIX® SG herbicide also selectively controls certain broadleaf weeds and grasses in potatoes, potatoes grown for seed, and field grown tomatoes (direct seeded and transplant).

The best control is obtained when MATRIX® SG is applied to young, actively growing weeds. The degree and duration of control may depend on the following:

- weed spectrum and infestation intensity
- weed size at application
- environmental conditions at and following treatment

MATRIX® SG is registered for use in most states. Check with your state extension service or Department of Agriculture before use, to be certain MATRIX® SG is registered in your state.

## TANK MIXTURES

To broaden the weed control spectrum and /or extend the residual effectiveness of MATRIX® SG herbicide, MATRIX® SG may be tank mixed with other registered herbicides affecting a different site of action (mode of action) and /or adjuvants registered for use on the crops listed on MATRIX® SG labeling.

Refer to the label(s) of the tank mix partner(s) for any additional use instructions or restrictions.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with the terms of this label.

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 in your State 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 4 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 water proof material such as polyethylene or polyvinylchloride. Shoes plus socks.

## NON-AGRICULTURAL USES

### 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 WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Use on noncrop sites and turf (unimproved) are not within the scope of the Worker Protection Standard. Do not enter or allow worker entry into treated areas until sprays have dried.

## CITRUS FRUIT, STONE FRUIT, TREE NUTS, POME FRUIT, GRAPES

## APPLICATION INFORMATION

MATRIX® SG should be applied as a uniform broadcast application to the orchard or vineyard floor or as a uniform band application directed at the base of the trunk or vine.

For broadcast applications, make a single application of MATRIX® SG at 4 ounces per acre per year. For improved weed management, MATRIX® SG should be applied in tank mixture with other registered preemergence herbicides.

When applied as a banded treatment (50% band or less), MATRIX® SG may be applied twice per year. However, do not apply more than 4 ounces per acre on a broadcast application basis per year. Unless otherwise specified on this label, or in separate published DuPont labeling, allow a minimum of 30 days between applications.

To help ensure uniform coverage, use a minimum of 10 gallons of spray solution per acre. Nozzle selection should meet manufacturer's spray volume and pressure instructions for preemergence or postemergence herbicide applications.

Do not apply MATRIX® SG by air. Use ground application equipment only.

Apply only to crops that have been established for one full growing season and are in good health and vigor.

Best results are obtained when the soil is moist at the time of application, and 1/2 inch of rainfall or sprinkler irrigation occurs within 2 weeks after application. Time the application(s) to take advantage of normal rainfall patterns and cool temperatures. Moisture for activation should occur within 2-3 weeks after application.

DuPont™ MATRIX® SG may also be applied by certain chemigation methods, such as micro-sprinkler. However, do not apply by overhead, flood, or drip irrigation.

Avoid direct or indirect spray contact with crop foliage or fruit, except undesirable suckers.

Do not use MATRIX® SG in a spray solution with a pH of below 4.0 or above 8.0, or with spray additives that buffer the pH to below 4.0 or above 8.0, since degradation of MATRIX® SG may occur.

<b>CROP GROUP / CROP</b>	<b>PRE-HARVEST INTERVAL (PHI)</b>
<b>Citrus Fruit:</b> Calamondin; Citrus citron; Citrus hybrids (includes chironja, tangelo, tangor); Grapefruit; Kumquat; Lemon; Lime; Mandarin (tangerine); Orange (sweet and sour); Pummelo; Satsuma mandarin	3 days
<b>Pome Fruit:</b> Apple; Crabapple; Loquat; Mayhaw; Pear; Oriental pear; Quince	7 days
<b>Tree Nuts:</b> Almond; Beech nut; Brazil nut; Butternut; Cashew; Chestnut; Chinquapin; Filbert (hazelnut); Hickory nut; Macadamia nut (bush nut); Pecan; Pistachio; Walnut (black and English)	14 days
<b>Stone Fruit:</b> Apricot; Cherry (sweet and tart); Nectarine; Peach; Plum; Plum (Chickasaw); Plum (Damson); Plum (Japanese); Plumcot; Prune (fresh)	14 days
<b>Grapes</b>	14 days

### **WEEDS CONTROLLED**

Rainfall or irrigation is needed for herbicide activation. Length of control is a function of moisture for activation, soil temperature, soil texture and amount of moisture after application.

When weeds are present at application, include a labeled burn down herbicide, such as glyphosate, paraquat, or glufosinate, with an appropriate adjuvant. MATRIX® SG will help provide postemergence control of the weeds listed in this label. For best results, make postemergence applications to young, actively growing weeds and include a spray adjuvant.

Residual weed control may be reduced when MATRIX® SG is applied where where heavy crop trash and/or weed residue exists.

Weed control may also be reduced when applications of MATRIX® SG are made to weeds under stress from drought, excessive water, temperature extremes, disease or low humidity.

## **PREEMERGENCE WEED CONTROL**

### **Grasses**

Barnyardgrass  
Crabgrass, large  
Foxtail, Giant  
Foxtail, Green  
Foxtail, Yellow  
Quackgrass  
Wheat, Volunteer

*Echinochloa crus-galli*  
*Digitaria sanguinalis*  
*Setaria faberi*  
*Setaria viridis*  
*Setaria glauca*  
*Agropyron repens*  
*Triticum aestivum*

### **Broadleaves**

Chamomile, False  
Dandelion, common (seedling)  
Filaree, Redstem  
Fleabane, hairy  
Groundsel, common  
Henbit  
Kochia  
Mallow, common  
Marestail/horseweed  
Mustard, Birdsraps  
Mustard, Black  
Pigweed, Redroot  
Pigweed, Smooth  
Puncturevine  
Purslane, Common  
Spurge, prostrate  
Spurge, spotted

*Matricaria maritima*  
*Taraxacum officinale*  
*Erodium cicutarium*  
*Conyza bonariensis*  
*Senecio vulgaris*  
*Lamium amplexicaule*  
*Kochia scoparia*  
*Malva neglecta*  
*Conyza canadensis*  
*Brassica rapa*  
*Brassica nigra*  
*Amaranthus retroflexus*  
*Amaranthus hybridus*  
*Tribulus terrestris*  
*Portulaca oleracea*  
*Euphorbia prostrata*  
*Euphorbia maculata*

## **PREEMERGENCE PARTIAL WEED CONTROL**

### **Grasses**

Wild Oat

*Avena fatua*

### **Broadleaves/Sedges**

Cocklebur  
Dandelion, common (established)  
Lambsquarters, common  
Nightshade, Black  
Nightshade, Hairy  
Nutsedge, yellow  
Pigweed, Prostrate  
Ragweed, Common  
Velvetleaf

*Xanthium spp.*  
*Taraxacum officinale*  
*Chenopodium album*  
*Solanum nigrum*  
*Solanum sarrachoides*  
*Cyperus esculentus*  
*Amaranthus blitoides*  
*Ambrosia artemisiifolia*  
*Abutilon theophrasti*

## **POSTEMERGENCE WEED CONTROL**

### **Grasses (1-2 inches)**

Barley, Volunteer  
Barnyardgrass  
Bluegrass, Annual  
Crabgrass, large (1/2 inch)  
Foxtail, Bristly  
Foxtail, Giant  
Foxtail, Green  
Foxtail, Yellow  
Panicum, Fall

*Hordeum vulgare*  
*Echinochloa crus-galli*  
*Poa annua*  
*Digitaria sanguinalis*  
*Setaria verticillata*  
*Setaria faberi*  
*Setaria viridis*  
*Setaria glauca*  
*Panicum*  
*dichotomislorum*  
*Triticum aestivum*

Wheat, Volunteer

### **Broadleaves (1-3 inches)**

Chamomile, False  
Chickweed, common  
Henbit  
Kochia  
Mustard, Black  
Mustard, Wild  
Pigweed, Redroot  
Pigweed, Smooth  
Purslane, common  
Shepherd's-purse  
Wild Radish

*Matricaria maritima*  
*Stellaria media*  
*Lamium amplexicaule*  
*Brassica rapa*  
*Brassica nigra*  
*Sinapis arvensis*  
*Amaranthus retroflexus*  
*Amaranthus hybridus*  
*Portulaca oleracea*  
*Capsella bursa-pastoris*  
*Raphanus raphanistrum*

## POSTEMERGENCE PARTIAL WEED CONTROL

### Grasses

Johnsongrass, seedling	<i>Sorghum halepense</i>
Millet, wild-proso	<i>Panicum miliaceum</i>
Oat, wild	<i>Avena fatua</i>
Quackgrass	<i>Agropyron repens</i>
Stinkgrass	<i>Eragrostis cilianensis</i>

### Broadleaves/Sedges

Cocklebur	<i>Xanthium spp.</i>
Dandelion, common (>6 inches in diameter)	<i>Taraxacum officinale</i>
Lambsquarters, common	<i>Chenopodium album</i>
Mallow, common	<i>Malva neglecta</i>
Nightshade, hairy	<i>Solanum sarrachoides</i>
Nutsedge, yellow	<i>Cyperus esculentus</i>
Pigweed, prostrate	<i>Amaranthus blitoides</i>
Ragweed, common	<i>Ambrosia artemisiifolia</i>
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>
Thistle, Canada	<i>Cirsium arvense</i>
Velvetleaf	<i>Abutilon theophrasti</i>

## SPECIFIC WEED PROBLEMS

**COMMON DANDELION AND MALLOW:** DuPont™ MATRIX® SG provides excellent preemergence control of common dandelion and mallow germinating from seed. In high rainfall areas or where sprinkler irrigation is used, a second application may be needed to extend residual control throughout the growing season. When applications are made postemergence to these weeds, always add a suitable burndown herbicide such as glyphosate or paraquat. Small and medium sized plants (up to 6 inches in diameter) are controlled by postemergence applications of MATRIX® SG plus a burndown herbicide; however, plants that are larger than 6 inches in diameter may only be suppressed and may require a second application 4 to 6 weeks later.

**MARESTAIL AND FLEABANE:** Where marestail and fleabane are the target weeds, applications prior to emergence provide best results. This may require a fall application to help prevent fall germinated seedlings from becoming established during the winter. A foliar active herbicide with activity on fleabane and marestail (such as paraquat, glyphosate, and glufosinate) must be tank mixed with MATRIX® SG for best control and resistance management. After Fall application, a second application in the spring may be required to provide extended weed control into the summer. Where MATRIX® SG is applied for control of Marestail and Fleabane, it is also recommended that another soil residual herbicide be included as a tank mix or rotational partner to aid in resistance management.

**PUNCTUREVINE:** For best results, apply early in the spring when you can expect rainfall or overhead irrigation to move MATRIX® SG into the weed root zone before puncturevine germinates. Puncturevine emerges over a long period of time and late season germinations may not be controlled.

**YELLOW NUTSEDGE:** MATRIX® SG provides suppression of yellow nutsedge. To obtain the most effective results, use the highest rate allowed based on the width of your spray band and make two applications. For applications made postemergence to nutsedge, always add the appropriate rate of glyphosate and an effective adjuvant. On soils with high organic matter (6% or higher) always

apply postemergence to weeds since preemergence applications are not as effective on these soils.

### Application Timing - Yellow Nutsedge

**Preemergence plus Early Postemergence:** Make the preemergence application when you can expect rainfall or overhead irrigation to move MATRIX® SG into the nutsedge root zone prior to nutsedge emergence. Make a second application when emerging nutsedge is 2 to 4 inches tall. **Postemergence plus Postemergence:** Make first application when emerging nutsedge is 2 to 4 inches tall. Repeat application 14 days later. **Note:** If yellow nutsedge is greater than 6 inches tall at the first application, weed control effectiveness will be greatly reduced.

**ANNUAL SUMMER GRASSES (such as Barnyardgrass, Green foxtail, and Crabgrass):** Where sprinkler irrigation is used, a fall or early spring application of MATRIX® SG will not provide season-long control of summer grasses like foxtail, barnyardgrass and crabgrass. For best results, use MATRIX® SG with a suitable tank-mix herbicide such as oryzalin or pendimethalin. A second application may be needed to provide extended control of summer grasses.

## USE PRECAUTIONS

- Direct sprays to minimize spray contact with fruit or foliage.

**Diuron Containing Products (Washington and Oregon):** On coarse textured soils where crops are grown under sprinkler irrigation, avoid using diuron containing products (such as, Karmex XP or Direx 4L) as a tank-mix partner with MATRIX® SG between June 1 and September 30 since crop injury may result. MATRIX® SG tank-mixed with diuron products can be used in the fall (after September 30), or early spring when temperatures are cool to moderate.

## CROP ROTATION - Fruit, Nut, and Vine Crops

Do not plant any crops, except field corn, tomatoes, potatoes, and those listed on this label in the "APPLICATION INFORMATION Section", within one year of the last MATRIX® SG application. Prior to planting, fields to be rotated to the above crops should have a thorough soil mixing - for example, two diskings, or a plowing and a disking. To help ensure rotational crop safety, a field bioassay should be completed prior to planting any other desired crops. The results of this bioassay may require the crop rotation interval to be extended. A successful field bioassay means growing to maturity a test strip of the crop(s) intended for production. The test strip should cross the entire field including knolls and low areas.

## MICRO-SPRINKLER CHEMIGATION - Fruit, Nut, and Vine Crops

MATRIX® SG may be applied via micro-sprinkler chemigation. The chemigation system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a functional



(normally closed) solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticide(s) and capable of being fitted with a system interlock. Do not apply DuPont™ MATRIX® SG through any other chemigation equipment.

### **USE PRECAUTIONS FOR CHEMIGATION - Fruit, Nut, and Vine Crops**

- Do not connect an irrigation system used for MATRIX® SG Herbicide application to a public water system.
- Distributing treated water in an uneven manner can result in crop injury, lack of effectiveness, or over-tolerance pesticide residues in the crop. Therefore, to ensure that the mixture is applied evenly at the labeled rate, use sufficient water, apply the mixture for the proper length of time and ensure sprinkler produces a uniform water pattern.
- Do not permit run-off during chemigation.
- Continuous agitation in the mix tank is needed to keep the product from settling. If settling does occur, thoroughly re-agitate the tank mixture before using.

## **POTATOES**

### **APPLICATION INFORMATION**

#### **PRE-EMERGENCE APPLICATIONS**

For best results, apply MATRIX® SG at 1 to 1-1/2 oz product per acre, immediately after hilling, drag-off, or reservoir tillage (dam/dike operation), to a clean, newly prepared seedbed.

To activate MATRIX® SG in the soil, supply moisture by a single rainfall event, or apply sprinkler irrigation of 1/3 to 1" (sandy soils apply at least 1/3", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), within 5 days after application, to move MATRIX® SG 2 to 3" deep into the soil profile. Activating sprinkler irrigation is required regardless of the soil moisture level at planting, or the cumulative precipitation that occurs over the next 5 days (unless rainfall occurs in a single event and equals the activation moisture requirement). If rainfall or sprinkler activation cannot be managed, waiting for weeds to emerge and applying MATRIX® SG postemergence would result in better weed control.

If a clean, newly prepared seedbed, free of emerged or germinating weeds does not occur, and weeds are present at application, add a spray adjuvant to the spray mix (See the "Spray Adjuvant" section of this label for additional information). Control may not be adequate for weeds that

have an established root system before activation of MATRIX® SG. Do not apply MATRIX® SG within 30 days of potato harvest. Do not exceed 2.5 oz of MATRIX® SG per acre per crop season.

### **TANK MIXTURES - PREEMERGENCE APPLICATIONS**

MATRIX® SG may be tank mixed with pesticide products labeled for use on potatoes (such as "Eptam 7E", "Prowl", "Lorox" DF, DuPont™ CINCH® or "Dual II Magnum", "Roundup" or glyphosate-containing products registered for potatoes) in accordance with the most restrictive of label limitations and precautions. When tank mixing MATRIX® SG with another potato pesticide(s), read and follow all use directions, restrictions, and precautions of both MATRIX® SG and the tank mix partner(s).

MATRIX® SG may also be used in three-way tank mix combinations with the above pesticide(s). If these instructions conflict with this MATRIX® SG label, do not use as a tank mix with MATRIX® SG.

#### ***MATRIX® SG plus Metribuzin (Such as "Sencor")***

Apply a tank mix combination of MATRIX® SG at 1 to 1-1/2 oz per acre and Metribuzin at 1/3 to 1 1/3 lb per acre for better control of such weeds as kochia, Russian thistle and common lambsquarters. For best results apply after hilling or drag-off to a clean, newly prepared seedbed, before potatoes emerge and weeds germinate. Read and follow the Metribuzin label for your area.

#### ***MATRIX® SG plus "Eptam 7E"***

Apply a tank mix of MATRIX® SG at 1 to 1-1/2 oz per acre and "Eptam 7E" at label rates for better control of weeds such as hairy nightshade and crabgrass. For best results apply after hilling or drag-off to a clean, newly prepared seedbed, before potatoes emerge and weeds germinate. Since the rates and incorporation methods of "Eptam 7E" vary by region, follow the instructions for your region. It is recommended to incorporate a tank mix of "Eptam 7E" + MATRIX® SG using irrigation, and not equipment, to prevent poor weed control from deep incorporation of the MATRIX® SG.

If your area does not allow incorporation using irrigation, then apply "Eptam 7E" and MATRIX® SG in a split application. Read and follow both product labels for your area.

#### ***MATRIX® SG plus Pendimethalin (Such as "Prowl")***

Apply a tank mix combination of MATRIX® SG at 1 to 1-1/2 oz per acre and "Prowl" at label rates for better control of such weeds as kochia, crabgrass, and common lambsquarters. For best results apply after hilling or drag-off to a clean, newly prepared seedbed, before potatoes emerge and weeds germinate. Read and follow the "Prowl" label for your area.

#### ***MATRIX® SG plus Linuron (Such as "Lorox" DF)***

Apply a tank mix combination of MATRIX® SG at 1 to 1-1/2 oz per acre and "Lorox" DF at 1 to 4 lb per acre for better control of such weeds as common lambsquarter and common ragweed. For best results apply after hilling or drag-off to a clean, newly prepared seedbed, before potatoes emerge and weeds germinate. Read and follow the "Lorox" DF label for your area.

**DuPont™ MATRIX® SG Plus S-Metolochlor (Such as DuPont™ CINCH® or "Dual II Magnum")**

Apply a tank mix combination of MATRIX® SG at 1 to 1-1/2 oz per acre and CINCH® or "Dual II Magnum" at 1 to 2 pt per acre for better control of such weeds as yellow nutsedge and black nightshade. For best results apply after hilling or drag-off to a clean, newly prepared seedbed, before potatoes emerge and weeds germinate. Read and follow both product labels for your area.

**POSTEMERGENCE APPLICATIONS - POTATOES**

For postemergence applications, apply MATRIX® SG at 1 to 1 1/2 oz per acre to young, actively growing weeds after crop emergence. Typically, small weeds (less than 1" in height or diameter) that are actively growing at application are most easily controlled (See the "Specific Weed Problem" section of this label for more information).

Under growing conditions that promote crop stress (such as drought, frost, cold temperatures, high temperatures, or extreme temperature variations), temporary chlorosis (lime green color) may occur after application of MATRIX® SG. Symptoms usually disappear within 5 to 15 days.

For best results with MATRIX® SG postemergence, rainfall or sprinkler irrigation of 1/3 to 1" (sandy soils apply at least 1/3", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), no sooner than 4 hours, but not more than 5 days after application, will activate MATRIX® SG in the soil and help provide control of subsequent flushes of annual weeds.

**TANK MIXTURES (POTATOES)- POSTEMERGENCE APPLICATIONS**

MATRIX® SG may be tank mixed with pesticide products labeled for use on potatoes (such as "Eptam 7E" and metribuzin) in accordance with the most restrictive of label limitations and precautions. When tank mixing MATRIX® SG with another potato pesticide(s), read and follow all use directions, restrictions, and precautions of both MATRIX® SG and the tank mix partner(s).

MATRIX® SG may also be used in three-way tank mix combinations with the above pesticide(s). If these instructions conflict with this MATRIX® SG label, do not use as a tank mix with MATRIX® SG.

**MATRIX® SG Plus Foliar Fungicides**

MATRIX® SG may be tank mixed with other suitable registered fungicides on potatoes (such as DuPont™ CURZATE® 60DF, "Manzate", and "Bravo").

Read and follow all manufacturer's label instructions for the companion fungicide. If these instructions conflict with this MATRIX® SG label, do not use as a tank mix with MATRIX® SG.

**MATRIX® SG Plus Metribuzin (Such as "Sencor")**

Apply a tank mix combination of MATRIX® SG at 1 to 1-1/2 oz per acre and Metribuzin (such as "Sencor") at 1/4 to 2/3 lb per acre for improved weed control of such weeds as Russian thistle, common lambsquarters and triazine-resistant weeds. Use a nonionic surfactant (NIS) at 0.125 % v/v (1 pt/100 gal of water). The addition of adjuvants to post emergence metribuzin applications may reduce crop tolerance. Adjuvants should be used with caution.

When possible, avoid post emergence applications on metribuzin sensitive varieties or if the crop is under stress. Read and follow both product labels for your area.

Note: The use of crop oil concentrate (COC) or methylated seed oil (MSO) is not recommended for tank mix combinations with MATRIX® SG plus Metribuzin.

**MATRIX® SG Plus "Eptam 7E"**

Apply MATRIX® SG herbicide at 1 to 1.5 ounce per acre in tankmix with 1 pint per acre of "Eptam 7E" herbicide. Include 1% volume/volume (1 gal per 100 gal spray solution) of either of a modified seed oil adjuvant (MSO) or 0.5% volume/volume (0.5 gal per 100 gal spray solution) of a organo-silicon/modified seed oil blend (OS/MSO – such as "Dyne-Amic", "Rivet", or "Phase"). Include 2 lb/acre of a spray-grade ammonium sulfate (AMS).

For best results, rainfall or sprinkler irrigation of 1/3 to 1" (sandy soils apply at least 1/3", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), no sooner than 4 hours after application, but not more than 1 day after application.

Additional "Eptam 7E" can be added during the water in process if desired (read and follow all use directions, restrictions, and precautions on the "Eptam 7E" label before use. If these instructions conflict with this MATRIX® SG label, do not use as a tank mix with MATRIX® SG.)

**Precautions:**

- Crop Injury can occur (leaf burn and temporary yellowing) when applications are made under high temperatures. Addition of fungicides may increase the level of crop injury.

In warm, moist conditions, the expression of herbicide symptoms is accelerated; in cold, dry conditions, expression of herbicide symptoms is delayed and may be more variable in weed control.

**SEQUENTIAL APPLICATIONS - POTATOES**

Depending upon rainfall or other environmental conditions, and the density of the top growth of the potato variety (those with poor top growth such as Norkotah), annual weeds may have a second flush of germinating seedlings, and treated perennials may produce new growth from underground roots or stems. To maximize control of such weeds, it may be necessary to apply MATRIX® SG a second time, 14 to 28 days after the first application (typically, make applications to small weeds that are less than 1" in height or diameter that are actively growing). The combined rate of the applications cannot exceed 2.5 oz MATRIX® SG per acre.

**POTATOES GROWN FOR SEED**

MATRIX® SG may be used on potatoes grown for seed that use field grown tubers as the planted seed piece, and are at least the progeny of the first field planting\*.

Apply MATRIX® SG by any of the following methods:

- Preemergence 1.5 oz per acre
- Postemergence at 1.0 to 1.5 oz per acre
- In a sequential application Preemergence at 1.0-1.5 oz per acre, followed by Postemergence at 1.0 oz per acre
- Postemergence at 1.0 oz per acre followed by Postemergence at 1.0 oz per acre.

Do not exceed 2.5 oz per acre of DuPont™ MATRIX® SG in the same year.

To activate MATRIX® SG preemergence, supply moisture by a single rainfall event, or apply sprinkler irrigation of 1/3 to 1" (sandy soils apply at least 1/3", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), within 5 days after application, to move MATRIX® SG 2" to 3" deep into the soil profile.

### Restrictions

- Do not apply to plants suffering stress from lack of moisture, cold, herbicide injury, and insect or disease injury.
- Do not use on potatoes grown for seed if these are grown from microtubers or transplants. Depending on geography, these may be referred to as Generation 1, Nuclear, Elite 1, or Pre-Elite.
- The rotational crop interval for Spring Barley is extended to 18 months due to the generally shorter growing seasons and different cultural practices in seed production in the states of California, Idaho, Oregon, Montana, South Dakota, Washington, Colorado, and parts of North Dakota\*\*.

### Precautions

- The rotational crop interval listed in the MATRIX® SG label may need to be extended to 18 months if seed potato production practices decrease water and/or time for MATRIX® SG breakdown. Practices that may shorten the breakdown are late planting or less frequent irrigations as compared to commercial production practices. Potatoes can be planted at anytime.
- Consider informing your state seed certification agency or inspector that MATRIX® SG has been applied. Under growing conditions that promote crop stress (such as drought, frost, cold temperatures, high temperatures, or extreme temperature variations), temporary chlorosis (lime green color) may occur after application. These symptoms may appear similar to virus like symptoms (such as chlorosis, leaf crinkling, pinching of terminal leaflet) but will usually disappear within 5 to 15 days of application.
- \* First field planting utilizes laboratory tested stocks which may be tissue cultured plantlets, greenhouse produced microtubers, minitubers, stem cuttings, or line selections.
- \*\* All counties in North Dakota except Pembina, Towner, Walsh, Grand Forks, Trail and Cass.

## WEEDS CONTROLLED - POTATO

### PREEMERGENCE CONTROL

#### Grasses

Barnyardgrass	(Echinochloa crus-galli)
Foxtail, Giant	(Setaria faberi)
Foxtail, Green	(Setaria viridis)
Foxtail, Yellow	(Setaria glauca)
Wheat, Volunteer	(Triticum aestivum)

#### Broadleaves

Chamomile, False	(Matricaria maritima L.)
Filaree, Redstem	(Erodium cicutarium)
Henbit	(Lamium amplexicaule)
Kochia	(Kochia scoparia)
Mustard, Birdrape	(Brassica rapa L.)
Mustard, Black	(Brassica nigra)
Pigweed, Prostrate	(Amaranthus blitoides)
Pigweed, Redroot	(Amaranthus retroflexus)
Pigweed, Smooth	(Amaranthus hybridus)
Purslane, Common	(Portulaca oleracea)

### PREEMERGENCE (PARTIAL CONTROL)

#### Grasses

Crabgrass	(Digitaria spp.)
Wild Oat	(Avena fatua)

#### Broadleaves

Cocklebur	(Xanthium spp.)
Lambsquarters, Common	(Chenopodium album)
Nightshade†, Black	(Solanum nigrum)
Nightshade, Hairy	(Solanum sarrachoides)
Pigweed, Prostrate	(Amaranthus blitoides)
Ragweed, Common	(Ambrosia artemisiifolia)
Velvetleaf	(Abutilon theophrasti)

† Eastern Black Nightshade (Solanum ptycanthum) is NOT Controlled or suppressed

### POSTEMERGENCE CONTROL

#### Grasses

Barley, Volunteer	(Hordeum vulgare)
Barnyardgrass	(Echinochloa crus-galli)
Bluegrass, Annual	(Poa annua)
Crabgrass	(Digitaria spp)
Foxtail, Bristly	(Setaria verticillata)
Foxtail, Giant	(Setaria faberi)
Foxtail, Green	(Setaria viridis)
Foxtail, Yellow	(Setaria glauca)
Panicum, Fall	(Panicum dichotomislorum)
Wheat, Volunteer	(Triticum aestivum)

#### Broadleaves

Chamomile, False	(Matricaria maritima L.)
Chickweed, Common	(Stellaria media)
Henbit	(Lamium amplexicaule)
Kochia	(Kochia scoparia)
Mustard, Birdrape	(Brassica rapa L.)
Mustard, Black	(Brassica nigra)
Mustard, Wild	(Sinapis arvensis)
Pigweed, Redroot	(Amaranthus retroflexus)
Pigweed, Smooth	(Amaranthus hybridus)
Purslane, Common	(Portulaca oleracea)
Shepherd's purse	(Capsella bursa-pastoris)
Wild Radish	(Raphanus raphanistrum)

### POSTEMERGENCE (PARTIAL CONTROL)‡

#### Grasses

Johnsongrass, Seedling	(Sorghum halepense)
Millet, Wild Proso	(Panicum miliaceum)
Stinkgrass	(Eragrostis cilianensis)
Wild Oat	(Avena fatua)
Yellow Nutsedge	(Cyperus esculentus)

#### Broadleaves

Thistle, Canada†	(Cirsium arvense)
Cocklebur	(Xanthium spp.)
Lambsquarters, Common	(Chenopodium album)
Morningglory, Ivyleaf	(Ipomoea hederacea)
Nightshade, Hairy	(Solanum sarrachoides)
Nightshade*†, Black	(Solanum nigrum)
Pigweed, Prostrate	(Amaranthus blitoides)
Quackgrass†	(Agropyron repens)
Ragweed, Common	(Ambrosia artemisiifolia)
Smartweed, Pennsylvania	(Polygonum pennsylvanicum)
Velvetleaf	(Abutilon theophrasti)
Volunteer Alfalfa**	(Medicago sativa)

\* Eastern Black Nightshade (Solanum ptycanthum) is NOT Controlled or suppressed.



- \*\* Except in California
- ‡ Weed partial control is a reduction in weed competition (reduced population and/or vigor) as visually compared to an untreated area. The degree of partial control varies with the rate used, the size of the weeds, and the environmental conditions following treatment.
- † See Specific Weed Problems

## **AERIAL APPLICATION**

(See Also SPRAY DRIFT)

- Use nozzle types and arrangements that will provide optimum spray distribution and maximum coverage at a minimum of 5 GPA. In California use a minimum of 10 GPA.
- Do not apply during a temperature inversion, when winds are gusty, or when conditions favor poor coverage and/or off-target spray movement.
- Do not apply by air in the state of California, except in Modoc or Siskiyou counties. Do not apply by air in the state of New York.

## **CHEMIGATION - POTATOES ONLY**

DuPont™ MATRIX® SG can be applied using center pivot, lateral move, solid set, or hand move irrigation systems in potatoes. Do not apply MATRIX® SG using any other type of irrigation system. Check irrigation systems to insure uniform application of water to all areas. Failure to apply MATRIX® SG uniformly may result in crop injury and/or poor weed control.

For best results, use the highest labeled rate and apply preemergence to early postemergence to the weeds (weeds less than 1" tall). If weeds are present at application, add a nonionic surfactant containing at least 80% active ingredient to the spray mix at 1 to 2 pt/acre.

MATRIX® SG may be mixed in a supply tank with water, fertilizer, or other appropriate agricultural chemicals. Maintain continuous agitation in the injection nurse tanks during application.

For solid set and hand move irrigation systems, apply MATRIX® SG at the beginning of the set and then apply 1/3 to 1" of water for activation (sandy soils apply at least 1/3", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1").

For center pivot and lateral move irrigation systems, apply MATRIX® SG in 1/3 to 1" of water for activation as a continuous injection (sandy soils apply at least 1/3", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1").

If you have questions about calibrating chemigation equipment, contact State Extension Service specialists, equipment manufacturers, or other experts. If the chemigation equipment needs adjustment, only the custodian responsible for its operation, or someone under the supervision of that custodian, should make the necessary adjustments.

## **IRRIGATION SYSTEM REQUIREMENTS**

The irrigation system must contain the following:

- a functional check valve
- vacuum relief valve
- a low pressure drain (to prevent water source contamination from backflow; should be located on the irrigation pipeline)
- functional interlocking controls (to automatically shut-off the pesticide injection pump when the water pump motor stops)

- a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock

The pesticide injection pipeline must contain the following:

- a functional, automatic, quick-closing check valve (to prevent the flow of fluid back toward the injection pump)
- a functional, solenoid-operated valve (normally closed) located on the intake side of the injection pump (should be connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is shut down either automatically or manually)

The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when pesticide distribution is adversely affected by a decrease in water pressure.

## **CHEMIGATION PRECAUTIONS**

Distributing treated water in an uneven manner can result in crop injury, lack of effectiveness, or over-tolerance pesticide residues in the crop. Therefore, to ensure that the mixture is applied evenly at the labeled rate, use sufficient water, and apply the mixture for the proper length of time.

- Do not permit run-off during chemigation.
- Do not apply when wind speed favors drift beyond the area intended for treatment.
- Do not connect an irrigation system (including greenhouse systems) used for MATRIX® SG application to a public water system.

## **MATRIX® SG ROTATIONAL CROP GUIDELINES - POTATO**

For crops listed below, planting prior to the interval shown may result in crop injury when using MATRIX® SG. Rotation intervals may need to be extended to 18 months if drought conditions prevail after application and before the rotational crop is planted, unless supplemental sprinkler irrigation has been applied and totals greater than 15" during the growing season. For tank mixtures, follow the most restrictive rotational crop guideline

<b>Rotation Crop</b>	<b>Interval (months)</b>
Alfalfa**	4
Barley, Spring *	9
Beans, Dry	10
Beans, Succulent	10
Carrots (Kern County, CA)**	4
Carrots**	10
Corn, Field	Anytime
Corn, Popcorn	10
Corn, Sweet	10
Cotton	10
Cover Crops (erosion control)	4
Cucumber	10
Garlic	6
Grass, pasture, hay, seed**	4
Mint**	4
Oats, Spring	9
Onions**	10
Peas**	8
Potatoes	Anytime
Sunflowers	10
Soybeans	4
Tomatoes	Anytime
Wheat, Spring	9
Wheat, Winter	4
Crops Not Listed	18

\* Idaho - 18 months for Teton county, Caribou county, Madison county east of Hwy 20, and Fremont county east of Hwy 20.

Colorado - Alamosa, Conejos, Costilla, Rio Grande and Saguache counties: 1.5 oz or less DuPont™ MATRIX® SG per acre per season--9 months; greater than 1.5 oz of MATRIX® SG per acre per season--18 months

\*\*For the select counties listed below in OR and WA where potatoes are grown under a minimum of 18 inches of sprinkler irrigation per season, alfalfa may be rotated at 4 months after application. All other areas may be rotated to alfalfa at 18 months after application. This rotation interval is for sand, loamy sand and sandy loam soils having not more than 1.5% organic matter where a minimum of 18 inches of sprinkler irrigation is used on the previous potato crop. Injury to the rotated crop may occur if less than 18 inches of irrigation is used on the previous potato crop. For tank mixtures, follow the most restrictive rotational crop guideline.

For Rotation to Alfalfa: MATRIX® SG in potatoes not to exceed 1 ounce per use season in Adams, Grant, Douglas and Lincoln counties of Washington, and MATRIX® SG in potatoes not to exceed 1.5 ounces per acre per use season in Benton, Franklin, Klickitat, Walla Walla and Yakima counties in Washington and Morrow and Umatilla counties in Oregon.

For Rotation to Onions and Carrots: MATRIX® SG in potatoes not to exceed 1.5 ounces per acre per use season in Adams, Grant, Douglas and Lincoln counties of Washington, and MATRIX® SG in potatoes not to exceed 2.5 ounces per acre per season in Benton, Franklin, Klickitat, Walla Walla and Yakima counties in Washington and Morrow and Umatilla counties in Oregon.

For Rotation to Grass Crops Grown for Seed, Hay or Pasture: MATRIX® SG in potatoes not to exceed 1.5 ounces per acre per use season in Adams, Grant, Douglas and Lincoln counties of Washington, and MATRIX® SG in potatoes not to exceed 2.5 ounces per acre per use season in Benton, Franklin, Klickitat, Walla Walla and Yakima counties in Washington and Morrow and Umatilla counties in Oregon.

For Rotation to Peas and Mints: MATRIX® SG in potatoes not to exceed 1.5 ounces per acre per use season in all areas.

NOTE: MATRIX® SG should not be used in a tankmix or sequential application program with other soil residual ALS-inhibiting herbicides on potatoes as the combined effects of these herbicides on the planting of subsequent crops have not been thoroughly investigated and crop injury may occur.

## RESTRICTIONS

### Potatoes

- Do not apply MATRIX® SG on potatoes within 30 days of harvest.
- Do not exceed 2.5 oz MATRIX® SG per acre on potatoes during the same growing season.
- Do not apply to sweet potatoes or yams.
- Do not use MATRIX® SG on potatoes grown for seed, except as directed on this labeling or supplemental labeling.
- Do not apply to potatoes growing in Greenhouses, Cold Frames, Pot cultures, etc. Apply only to potatoes growing in fields.

## TOMATOES (DIRECT SEEDED AND TRANSPLANT)

### PREEMERGENCE APPLICATIONS

For preemergence applications to the crop, apply MATRIX® SG after seeding at 2.0-4.0 oz. product per acre.

To activate MATRIX® SG in the soil, supply moisture by a single rainfall event, or apply sprinkler irrigation of 1/2 to 1" (sandy soils apply at least 1/2", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), within 5 days after application, to move MATRIX® SG 2 to 3" deep into the soil profile. Activating sprinkler irrigation is required regardless of the soil moisture level at planting, or

the cumulative precipitation that occurs over the next 5 days (unless rainfall occurs in a single event and equals the activation moisture requirement). If rainfall or sprinkler activation cannot be managed, waiting for weeds to emerge and applying MATRIX® SG postemergence may result in better weed control.

If a clean, newly prepared seedbed, free of emerged or germinating weeds does not occur, and weeds are present at application, the addition of a spray adjuvant may improve weed control (See the "Spray Adjuvant" section of this label for additional information). Control may not be adequate for weeds that are greater than 1" in height or diameter or weeds that have an established root system before activation of MATRIX® SG.

### POSTEMERGENCE APPLICATIONS

For postemergence applications, apply MATRIX® SG at 1.0-2.0 oz product per acre (use 2.0 oz per acre for longer residual) to young, actively growing weeds after the crop has reached the cotyledon stage. Optimum performance is obtained when weeds are less than 1" in height or diameter and are actively growing.

Use a surfactant at a minimum rate of 0.25% V/V (2 pints/100 gallons of water). The use of crop oil concentrate, methylated seed oils, nitrogen fertilizer solution or nonionic surfactant rates above 0.25% V/V may result in temporary crop chlorosis (lime green color). Symptoms usually disappear within 5 to 15 days.

Under growing conditions that promote crop stress (such as drought, frost, cold temperatures, high temperatures, extreme temperature variations or saturated or water-logged soils), temporary crop chlorosis (lime green color) may occur after application of MATRIX® SG. Symptoms usually disappear within 5 to 15 days.

For best results with MATRIX® SG postemergence, rainfall or sprinkler irrigation of 1/2 to 1" (sandy soils apply at least 1/2", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), no sooner than 4 hours, but not more than 5 days after application, will activate MATRIX® SG in the soil and help provide control of subsequent flushes of annual weeds.

Postemergence applications of MATRIX® SG should be made after the tomatoes reach the cotyledon stage.

### SEQUENTIAL APPLICATIONS TOMATOES

Annual weeds at times may have multiple flushes of seedlings, or treated weeds may sometimes regrow from underground stems or roots, depending upon rainfall and other environmental conditions. To maximize control of such weeds, it may be necessary to use sequential applications of MATRIX® SG.

### PREEMERGENCE FOLLOWED BY POSTEMERGENCE

Applications of MATRIX® SG may be applied Preemergence followed by single or multiple applications Postemergence.

Note : For sequential applications the total amount of MATRIX® SG cannot exceed 4.0 oz. product per acre per year on a broadcast basis.

## ***POSTEMERGENCE FOLLOWED BY POSTEMERGENCE***

Multiple applications of DuPont™ MATRIX® SG may be applied postemergence, optimum control is seen when the first application is made to small actively growing weeds, followed by a second application 7 to 14 days later.

Note : For sequential applications the total amount of MATRIX® SG cannot exceed 4.0 oz. product per acre per year on a broadcast basis.

### **BAND APPLICATIONS - TOMATOES**

MATRIX® SG can be applied preemergence and postemergence as a banded application. Use proportionally less spray mixture based on the soil area actually sprayed. See the "Preemergence Applications" and "Postemergence Applications" sections of this label for additional details on the use of MATRIX® SG.

### **TANK MIXTURES - TOMATOES**

MATRIX® SG may be tank mixed with pesticide products labeled for use on tomatoes in accordance with the most restrictive of label limitations and precautions. When tank mixing MATRIX® SG with another tomato pesticide(s), read and follow all use directions, restrictions, and precautions of both MATRIX® SG and the tank mix partner(s).

MATRIX® SG may also be used in three-way tank mix combinations with the above pesticide(s). If these instructions conflict with this MATRIX® SG label, do not use as a tank mix with MATRIX® SG. Tank mixtures with products that lower the spray solution pH may reduce weed control (such as LI700 surfactant).

### **MATRIX® SG Plus Foliar Fungicides**

MATRIX® SG may be tank mixed with other suitable registered fungicides on tomatoes (such as "Manzate", and "Bravo"). Tank mixes with Copper containing fungicides may reduce weed control.

Read and follow all manufacturers' label instructions for the companion fungicide. If these instructions conflict with this MATRIX® SG label, do not use as a tank mix with MATRIX® SG.

## **TOMATOES: CALIFORNIA**

### **PREEMERGENCE APPLICATIONS**

For preemergence applications to the crop, apply MATRIX® SG after seeding at 2.0-4.0 oz. product per acre. To activate MATRIX® SG in the soil, supply moisture by a single rainfall event, or apply sprinkler irrigation of 1/2 to 1" (sandy soils apply at least 1/2", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), within 5 days after application, to move MATRIX® SG 2 to 3" deep into the soil profile. Activating sprinkler irrigation is required regardless of the soil moisture level at planting, or the cumulative precipitation that occurs over the next 5 days (unless rainfall occurs in a single event and equals the activation moisture requirement). If rainfall or sprinkler activation cannot be managed, waiting for weeds to emerge and applying MATRIX® SG postemergence may result in better weed control.

If a clean, newly prepared seedbed, free of emerged or germinating weeds does not occur, and weeds are present at application, the addition of a spray adjuvant may improve

weed control (See the "Spray Adjuvant" section of this label for additional information). Control may not be adequate for weeds that are greater than 1" in height or diameter or weeds that have an established root system before activation of MATRIX® SG.

### **POSTEMERGENCE APPLICATIONS**

For postemergence applications, apply MATRIX® SG at 2.0 oz. product per acre to young, actively growing weeds after the crop has reached the cotyledon stage. Optimum performance is obtained when weeds are less than 1" in height or diameter and are actively growing.

Use a surfactant at a minimum rate of 0.25% V/V (2 pints/100 gallons of water). The use of crop oil concentrate, methylated seed oils, nitrogen fertilizer solution or nonionic surfactant rates above 0.25% V/V may result in temporary crop chlorosis (lime green color). Symptoms usually disappear within 5 to 15 days.

Under growing conditions that promote crop stress (such as drought, frost, cold temperatures, high temperatures, extreme temperature variations or saturated or water-logged soils), temporary crop chlorosis (lime green color) may occur after application of MATRIX® SG. Symptoms usually disappear within 5 to 15 days.

For best results with MATRIX® SG postemergence, rainfall or sprinkler irrigation of 1/2 to 1" (sandy soils apply at least 1/2", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), no sooner than 4 hours, but not more than 5 days after application, will activate MATRIX® SG in the soil and help provide control of subsequent flushes of annual weeds.

Postemergence applications of MATRIX® SG should be made after the tomatoes reach the cotyledon stage.

### **SEQUENTIAL APPLICATIONS**

Annual weeds at times may have multiple flushes of seedlings, or treated weeds may sometimes regrow from underground stems or roots, depending upon rainfall and other environmental conditions. To maximize control of such weeds, it may be necessary to use sequential applications of MATRIX® SG.

### ***PREEMERGENCE FOLLOWED BY POSTEMERGENCE***

Applications of MATRIX® SG may be applied Preemergence followed by single or multiple applications Postemergence.

Note : For sequential applications the total amount of MATRIX® SG cannot exceed 4.0 oz. product per acre per year on a broadcast basis.

## ***POSTEMERGENCE FOLLOWED BY POSTEMERGENCE***

Multiple applications of MATRIX® SG may be applied postemergence, optimum control is seen when the first application is made to small actively growing weeds, followed by a second application 7 to 14 days later.

Note : For sequential applications the total amount of MATRIX® SG cannot exceed 4.0 oz. product per acre per year on a broadcast basis.



## BAND APPLICATIONS – TOMATOES:

DuPont™ MATRIX® SG can be applied in a preemergence band at 2.0 - 4.0 oz. product per acre (For example, 0.5-1.0 oz. of product per conventional broadcast acre assuming 25% banding) followed by two separate postemergence band applications applied at 2 oz. product per acre (For example, 0.5 oz of product per conventional broadcast acre assuming 25% banding) over the same sprayed area.

MATRIX® SG can be applied using three postemergence band applications at 2 oz. product per acre (For example, 0.5 oz of product per conventional broadcast acre assuming 25% banding).

Do not make any more than three band applications of MATRIX® SG in one growing season.

## WEEDS CONTROLLED - TOMATO

### PREEMERGENCE CONTROL

#### Grasses

Barnyardgrass	(Echinochloa crus-galli)
Foxtail, Giant	(Setaria faberi)
Foxtail, Green	(Setaria viridis)
Foxtail, Yellow	(Setaria glauca)
Wheat, Volunteer	(Triticum aestivum)

#### Broadleaves

Filaree, Redstem	(Erodium cicutarium)
Henbit	(Lamium amplexicaule)
Kochia	(Kochia scoparia)
Mustard, Black	(Brassica nigra)
Pigweed, Redroot	(Amaranthus retroflexus)
Pigweed, Smooth	(Amaranthus hybridus)
Purslane, Common	(Portulaca oleracea)

### PREEMERGENCE (PARTIAL CONTROL)

#### Grasses

Crabgrass	(Digitaria spp.)
Wild Oat	(Avena fatua)

#### Broadleaves

Cocklebur	(Xanthium spp.)
Lambsquarters, Common	(Chenopodium album)
Nightshade*, Black†	(Solanum nigrum)
Nightshade, Hairy	(Solanum sarrachoides)
Pigweed, Prostrate	(Amaranthus blitoides)
Ragweed, Common	(Ambrosia artemisiifolia)
Velvetleaf	(Abutilon theophrasti)

\* Eastern Black Nightshade (Solanum ptycanthum) is NOT Controlled or suppressed.

Black Nightshade suppression is only for use in Tomatoes in California.

† See Specific Weed Problems

### POSTEMERGENCE CONTROL (Weeds not to exceed 1" in height)

#### Grasses

Barley, Volunteer	(Hordeum vulgare)
Barnyardgrass	(Echinochloa crus-galli)
Bluegrass, Annual	(Poa annua)
Crabgrass	(Digitaria spp.)
Foxtail, Bristly	(Setaria verticillata)
Foxtail, Giant	(Setaria faberi)
Foxtail, Green	(Setaria viridis)
Foxtail, Yellow	(Setaria glauca)
Panicum, Fall	(Panicum dichotomisorum)
Wheat, Volunteer	(Triticum aestivum)

## Broadleaves

Chamomile, False	(Matricaria maritima L.)
Chickweed, Common	(Stellaria media)
Henbit	(Lamium amplexicaule)
Kochia	(Kochia scoparia)
Mustard, Birdsraps	(Brassica rapa L.)
Mustard, Black	(Brassica nigra)
Mustard, Wild	(Sinapis arvensis)
Pigweed, Redroot	(Amaranthus retroflexus)
Pigweed, Smooth	(Amaranthus hybridus)
Purslane, Common	(Portulaca oleracea)
Shepherd's purse	(Capsella bursa-pastoris)
Wild Radish	(Raphanus raphanistrum)

### POSTEMERGENCE (PARTIAL CONTROL)‡

#### Grasses

Johnsongrass, Seedling	(Sorghum halepense)
Millet, Wild Proso	(Panicum miliaceum)
Stinkgrass	(Eragrostis cilianensis)
Quackgrass†	(Agropyron repens)
Wild Oat	(Avena fatua)
Yellow Nutsedge	(Cyperus esculentus)

#### Broadleaves

Thistle, Canada†	(Cirsium arvense)
Cocklebur	(Xanthium spp.)
Lambsquarters, Common	(Chenopodium album)
Morningglory, Ivyleaf	(Ipomoea hederacea)
Nightshade, Hairy	(Solanum sarrachoides)
Nightshade*†, Black (cotyledon stage only)	(Solanum nigrum)
Pigweed, Prostrate	(Amaranthus blitoides)
Ragweed, Common	(Ambrosia artemisiifolia)
Smartweed, Pennsylvania	(Polygonum pensylvanicum)
Velvetleaf	(Abutilon theophrasti)
Volunteer Alfalfa**	(Medicago sativa)

\* Eastern Black Nightshade (Solanum ptycanthum) is NOT Controlled or suppressed.

Black Nightshade partial control is only for use in Tomatoes in California.

\*\*Except California

‡ Partial control is a reduction in weed competition (reduced population and/or vigor) as visually compared to an untreated area. The degree of partial control varies with the rate used, the size of the weeds, and the environmental conditions following treatment.

† See Specific Weed Problems

## MATRIX® SG ROTATIONAL CROP GUIDELINES - TOMATO

For crops listed below, planting prior to the interval shown may result in crop injury when using MATRIX® SG. Rotation intervals may need to be extended to 18 months if drought conditions prevail after application and before the rotational crop is planted, unless supplemental sprinkler irrigation has been applied and totals greater than 15" during the growing season. For tank mixtures, follow the most restrictive rotational crop guideline.

Rotation Crop	Interval (months)
Beans, Dry	10
Beans, Snap	10
Corn, Field	Anytime
Corn, Sweet	10
Cotton	10
Cucumber	10
Garlic	6
Potatoes	Anytime
Soybeans	10
Tomatoes	Anytime
Wheat, Winter	4
Crops Not Listed	12

Note: Where drip irrigated tomatoes are grown, rotate only to tomato, potato or field corn as crop injury may result.



Rotational crops may be planted at indicated intervals provided the fields are deep disked or plowed, and thorough soil mixing is achieved, prior to planting the rotational crop.

## RESTRICTIONS

### Tomatoes

- Do not apply DuPont™ MATRIX® SG within 45 days of tomato harvest.
- Do not apply MATRIX® SG by air on tomatoes.
- Do not apply using assisted (Airblast) field crops sprayers on tomatoes.
- Do not exceed 4.0 oz. MATRIX® SG per acre (broadcast basis) on tomatoes during the same growing season.
- Banding applications of MATRIX® SG should not exceed 4.0 ounces on a broadcast basis in the same growing season.
- Do not apply to tomatoes growing in Greenhouses, Cold Frames, Pot cultures, etc. Apply only to tomatoes growing in fields.
- Do not apply through any type of irrigation system.

## CULTIVATION

A timely cultivation may be necessary to control suppressed weeds, weeds that were beyond the maximum size at application, or weeds that emerge after an application of MATRIX® SG.

- Cultivation up to 7 days before the postemergence application of MATRIX® SG may decrease weed control by pruning weed roots, placing the weeds under stress, or covering the weeds with soil and preventing coverage by MATRIX® SG.
- To allow MATRIX® SG to fully control treated weeds, cultivation is not recommended for 7 days after application.
- Optimum timing for cultivation is 7 - 14 days after a postemergence application of MATRIX® SG.

## SPECIFIC WEED PROBLEMS

**Quackgrass:** For best results, apply MATRIX® SG postemergence to quackgrass that is 4 to 8" tall. Quackgrass not emerged at the time of application will not be controlled or suppressed, and would require a second postemergence application for acceptable control.

**Black Nightshade (Tomatoes):** For best results, apply MATRIX® SG preemergence (prior to weed germination) at 2 - 4 oz per acre followed by a postemergence application at 1 to 2 oz per acre to small actively growing weeds.

**Canada Thistle:** For best results, apply MATRIX® SG postemergence to small actively growing Canada thistle. Canada thistle not emerged at the time of application will not be controlled or suppressed, and would require a second postemergence application for acceptable control.

## SPRAY ADJUVANTS

Include a spray adjuvant with applications of MATRIX® SG when applied by itself and postemergence to the weeds. Consult your Ag dealer or applicator, local DuPont fact sheets, technical bulletins, and service policies prior to using an adjuvant system. If another herbicide is tank mixed with MATRIX® SG, select adjuvants authorized for use with both products. Products must contain only EPA-exempt ingredients (40 CFR 1001).

## Nonionic Surfactant (NIS)

- Apply 0.125 to 0.25% v/v (1 to 2 pt/100 gal of water). The 0.25% v/v rate is preferred under arid or drought conditions.
- Surfactant products must contain at least 80% nonionic surfactant with a hydrophilic/lipophilic balance (HLB) greater than 12.

## Petroleum Crop Oil Concentrate (COC) or Modified Seed Oil (MSO)

- Apply at 1% volume/volume (1 gal per 100 gal spray solution), or 2% under arid conditions.
- Oil adjuvants must contain at least 80% high quality, petroleum (mineral) or modified vegetable seed oil with at least 15% surfactant emulsifiers.
- Blended products which contain both MSO and Silicone are acceptable at labeled rates.

## Ammonium Nitrogen Fertilizer

- Use 2 qt/acre of a high-quality urea ammonium nitrate (UAN), such as 28%N or 32%N, or 2 lb/acre of a spray grade ammonium sulfate (AMS). Use 4 qt/acre UAN or 4 lb/acre AMS under arid conditions.
- Do not use liquid nitrogen fertilizer as the total carrier solution.

## Special Adjuvant Types

- Combination adjuvant products may be used at doses that provide the required amount of NIS and ammonium nitrogen fertilizer. Consult product literature for use rates and restrictions.
- Do not use any other adjuvant rates or mixtures with MATRIX® SG unless instructed to do so on DuPont Technical Bulletins.

## Precautions:

1. The use of silicone polymer type surfactants is not suggested as reduced weed control may result.
2. Avoid using crop oil concentrate (COC) or methylated seed oil (MSO) when potatoes are under heat stress (>85 degrees F) as multiple stresses may cause crop injury.

## EQUIPMENT-SPRAY VOLUMES

Agitate the spray tank continuously to keep the material in suspension.

Do not use equipment and/or spray volumes that will cause damage from spray by drift onto nontarget sites. Do not make applications when weather conditions are likely to cause spray to drift onto nontarget sites. (See the "Spray Drift Management" section of this label for additional information).

## GROUND APPLICATION - POTATOES AND TOMATOES

To ensure optimum spray distribution and thorough coverage, apply MATRIX® SG with a properly calibrated, low-pressure (20 to 40 psi) boom sprayer equipped with flat fan, "Twinjet", underleaf banding nozzles or flood jet nozzles. Nozzle screens should be no finer than 50 mesh. When using flood nozzles, the spray pattern should overlap 100% for optimum product performance. For banded applications even flow flat fan or twin jet spray nozzles may provide a more uniform spray distribution.

With ground application equipment, use enough water to deliver 10 to 40 gal total spray solution per acre. Avoid overlapping, and shut off spray booms while starting, turning, slowing, or stopping, or injury to the crop may result.

### SPRAYER CLEANUP

Spray equipment or nurse tanks used in chemigation, must be cleaned before DuPont™ MATRIX® SG is sprayed. Follow the cleanup procedures specified on the labels of previously applied products. If no directions are provided, follow the 6 steps outlined in the "After Spraying MATRIX® SG and before Spraying Other Crops" section of this label.

For maximum preemergence activity, prior to application, the bed or soil surface should be smooth and relatively free of crop and weed trash (dead weeds, decaying leaves, clippings, etc.). Leaves and trash may be removed by blowing the area to be treated or by thoroughly mixing the trash into the soil through cultivation prior to herbicide application. Cultural practices that result in redistribution or disturbance of the soil surface after treatment will decrease the herbicidal effectiveness of MATRIX® SG. Cutting water furrows, or cultivations that mix untreated soil into the treated areas, will also reduce the effectiveness of the herbicide treatment.

For best weed management apply MATRIX® SG with another suitable residual herbicide registered for that crop. This is recommended for all soil types, but especially so for coarse textured soils under standard sprinklers or micro-sprinklers.

More than one banded application of MATRIX® SG may be needed to provide extended weed control.

eliminate the invader. Consult your appropriate state extension service, forest service, or regional multidisciplinary invasive species management coordination team to determine the appropriate Rapid Response provisions and allowed treatments in your area.

### DIRECTIONS FOR USE

MATRIX® SG is non-corrosive to spray equipment, nonflammable and non-volatile. Do not use MATRIX® SG in a spray solution or with spray additives that buffer the pH to below 4.0, or above 8.0, as degradation of MATRIX® SG may occur.

MATRIX® SG may be used in weed management programs on non-crop sites to provide residual preemergence and early postemergence control of the following weeds:

Barnyardgrass	<i>Echinochloa crus-galli</i>
Brome, downy	<i>Bromus tectorum</i>
Crabgrass, large	<i>Digitaria sanguinalis</i>
Foxtail, giant	<i>Setaria faberi</i>
Foxtail, green	<i>Setaria viridis</i>
Foxtail, yellow	<i>Setaria glauca</i>
Filaree redstem	<i>Erodium cicutarium</i>
Fleabane, hairy	<i>Conyza bonariensis</i>
Mallow, common	<i>Malva neglecta</i>
Marestail/horseweed*	<i>Conyza canadensis</i>
Medusahead	<i>Taeniatherum caput-medusae</i>
Mustard, black	<i>Brassica nigra</i>
Pigweed, redroot	<i>Amaranthus retroflexus</i>
Pigweed, smooth	<i>Amaranthus hybridus</i>
Puncturevine	<i>Tribulus terrestris</i>

\*Naturally occurring resistant biotypes of this weed are known to exist in some areas of the U.S. MATRIX® SG will not control these biotypes.

Refer to other sections of this label for additional weeds controlled.

To provide a broader spectrum of residual weed control, MATRIX® SG may be applied in a tank mixture with other registered preemergence herbicides. When weeds are present at application, include a labeled burn down herbicide, such as glyphosate, or glufosinate, with an appropriate adjuvant.

For best results, make postemergence applications to young, actively growing weeds and include a spray adjuvant. Refer to the label of the tank mixture partner(s) for any additional use instructions or restrictions. Follow the most restrictive labeling of any of the tank-mix component products.

### TANK MIXTURES

MATRIX® SG may be tank mixed with other herbicides registered for non-crop use. It may also be tank-mixed with any adjuvants registered for non-crop use. Refer to the label of the tank mix partner(s) for any additional use instructions or restrictions.

### APPLICATION INFORMATION

Apply MATRIX® SG at 4.0 ounces broadcast per acre. Do not apply more than 4.0 ounces of MATRIX® SG per acre per year. For best preemergence residual activity, MATRIX® SG must be activated by rainfall and applied when soil temperatures are cool. Make applications to take advantage of normal rainfall patterns (minimum of 1/2 inch)

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## SELECTIVE WEED CONTROL AND INVASIVE SPECIES MANAGEMENT IN NON-CROP SITES

### PRODUCT INFORMATION

MATRIX® SG can be sprayed for weed control on private, public and military lands as follows: nonagricultural areas (such as airports, highway, railroad and utility rights-of-way, sewage disposal areas, etc.); uncultivated agricultural areas - non-crop producing (such as farmyards, fuel storage areas, fence rows, non-irrigation ditchbanks, barrier strips, etc.); industrial sites - outdoor (such as lumberyards, pipeline and tank farms, etc.) and non-cropland wildlife habitats.

### INVASIVE SPECIES MANAGEMENT

This product may be used on public, private, and tribal lands to treat certain weed species infestations that have been determined to be invasive, consistent with the Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW) National Early Detection and Rapid Response (EDRR) System for invasive plants.

Effective EDRR systems address invasions by eradicating the invader where possible, and controlling them when the invasive species is too established to be feasibly eradicated. Once an EDRR assessment has been completed and action is recommended, a Rapid Response needs to be taken to quickly contain, deny reproduction, and if possible,

and cooler temperatures. For best results, moisture for activation should occur within 2-3 weeks after application. To help ensure uniform coverage, use a minimum of 10 gallons of spray solution per acre. Nozzle selection should meet manufacturer's spray volume and pressure recommendations for preemergence or postemergence herbicide applications. DuPont™ MATRIX® may be applied using ground or aerial spray equipment. Fixed wing aircraft and helicopters can be used to apply MATRIX®, however, do not make applications by fixed wing aircraft unless appropriate buffer zones can be maintained to prevent spray drift out of the target area or, when treating open tracts of land, spray drift as a result of fixed wing aircraft application can be tolerated. Aerial equipment designed to minimize spray drift, such as a helicopter equipped with a Microfoil™ boom or raindrop nozzles, must be used and calibrated. Except when applying with a Microfoil™ boom, a drift control agent may be added at the labeled rate.

### **NON-CROPLAND RESTORATION**

MATRIX® SG is labeled for the control of downy brome (cheatgrass), medusahead and certain broadleaf weeds in non-cropland. In order to release desirable, perennial grass species for site restoration, MATRIX® SG may be applied at 3.0 to 4.0 ounces of product per acre in the fall, within 6 weeks before the expected date when the soil freezes. Use the higher rate for medusahead control.

To provide broader spectrum broadleaf weed control in non-crop land restoration a tank mixture of MATRIX® SG and TELAR® XP may be used. Include TELAR® XP at the use rate of 0.5 ounce per acre. Refer to the TELAR® XP label for specific weeds controlled.

### **USE PRECAUTIONS AND RESTRICTIONS**

Treatment of powdery, dry soil or light, sandy soil when there is little likelihood of rainfall soon after treatment may result in off target movement and possible damage to susceptible crops when soil particles are moved by wind or water. Injury to crops may result if treated soil is washed, blown, or moved onto land used to produce crops. Exposure to MATRIX® SG may injure or kill most crops.

Injury may be more severe when the crops are irrigated. Do not apply MATRIX® SG when these conditions are identified and powdery, dry soil or light or sandy soil are known to be prevalent in the area to be treated.

Where food and/or feed crops are grown, or in areas where food and/or feed crops are planned to be grown, care should be taken to prevent any direct spray of MATRIX® SG onto, or drift to, these crops or planned planting areas since severe crop injury may occur.

Do not apply in or on irrigation canals or ditches including their outer banks.

If non-crop sites treated with MATRIX® SG are to be converted to an agricultural use other than rangeland, consult the Rotational Crop Guidelines sections of this label for all rotational crop instructions.

Do not use in the state of New York.

## **RANGELAND RESTORATION WEST OF THE MISSISSIPPI RIVER**

### **PRODUCT INFORMATION**

MATRIX® SG herbicide is a water soluble granule that is mixed in water and applied as a spray. MATRIX® SG is non-corrosive to spray equipment, non-flammable and non-volatile. Do not use MATRIX® SG in a spray solution or with spray additives that buffer the pH to below 4.0, or above 8.0, as degradation of MATRIX® SG may occur.

A restoration management program that includes MATRIX® SG herbicide may be used when rangeland has become severely infested with invasive weed species, and deteriorated to where it is no longer suitable for grazing or forage production. To reclaim these lands, the invasive weed species must first be controlled to either allow native grasses to reestablish or to be replanted where practical with other desirable perennial grasses. The grasses must be allowed time to reestablish before grazing or forage production is resumed. A typical restoration management program will take one to two years.

In order to establish and/or release desirable, perennial grass species for rangeland restoration, MATRIX® SG may be used to control the undesirable grasses and broadleaf weeds listed in the Weeds Controlled section of this label. The residual activity of MATRIX® SG will also help prevent the reemergence of many of these weeds while desirable grasses are being reestablished. At the maximum application rate of 4.0 ounces of MATRIX® SG per acre per year desirable rangeland perennial grasses in the treated area may exhibit a temporary chlorosis following application. The use of an adjuvant with MATRIX® SG can increase desirable perennial grass injury.

Do not graze treated sites or cut for forage or hay for a minimum of 1 year after application in order to allow newly emerged grasses sufficient time to become established. Where practical, fencing or other measures are to be used to prevent early grazing of re-established sites to help promote active grass restoration.

### **RESTORATION PROGRAM**

An effective restoration program may include one or more of the following steps (A through F):

- A. Identifying and inventorying the weed infestation and desired grass densities.
- B. Consulting and planning the entire program with personnel experienced in herbicide programs and range restoration.
- C. Making applications of MATRIX® SG prior to soil freeze up or after spring thaw. Make sure all label precautions are followed.
- D. Include a tank mix partner labeled for use on rangeland to broaden the spectrum of weeds controlled
- E. Planting grass seed as needed to improve the site, per the Grass Replant Interval section of the label.
  - Planting to obtain the highest possible grass stand establishment.
  - Planting a selected grass mixture to improve the desired stand



- Using a properly fitted drill to help ensure correct seed placement and depth is suggested.
- Seeding in late fall to best ensure moisture for seed germination. Seeding in the spring has the highest risk of stand failure.
- Consulting with a knowledgeable grass seed supplier to select the best-suited varieties for your area.

F. Treating for second year, forbes control (if necessary):

- Treat with DuPont TELAR® XP (0.25 to 1 ounce per acre) + bromoxynil (1 pint per acre) to weeds at the early growth stage.

### GRASS REPLANT INTERVAL

The replant interval is for soils with a pH of less than 7.5. Soils having a pH greater than 7.5 will require a longer interval. The replant interval is for applications made in the spring. Because DuPont™ MATRIX® SG degradation is slowed by cold, dry, or frozen soils, applications made in the fall should consider the replant interval as beginning in the spring following treatment. Following a treatment with MATRIX® SG at use rates up to 4.0 ounces of product per acre, the following grasses may be replanted at least 7 months after a spring application. Rainfall or irrigation of at least 1/2 inch following treatment is necessary to replant 7 months after a MATRIX® SG application. If the treated site does not receive at least 1/2 inch of rainfall or irrigation within four weeks after MATRIX® SG application, then the grass replant interval is 12 months.

Crested wheatgrass	<i>Agropyron cristatum</i>
Intermediate wheatgrass	<i>Thinopyrum intermedium</i>
Blue bunch wheatgrass	<i>Pseudoroegneria spicata</i>
Squirreltail	<i>Elymus elymoides</i>
Beadless (creeping) wildrye	<i>Leymus triticoides</i>
Big bluegrass	<i>Poa ampla</i>
Idaho fescue	<i>Festuca idahoensis</i>
Smooth brome	<i>Bromus inermis</i>

Testing has indicated that there is considerable variation in response among species and types of grasses when seeded into areas treated with MATRIX® SG. If species other than those listed above are to be planted into areas treated with MATRIX® SG a field bioassay should be performed, or previous experience may be used to determine the feasibility of replanting treated areas. To conduct a field bioassay, grow to maturity test strips of the grass species you plan to grow the following year. The test strips should cross the entire field including knolls and low areas. Crop response to the bioassay will indicate whether or not to plant the grass species grown in the test strips.

### APPLICATION EQUIPMENT

MATRIX® SG may be applied using ground or aerial spray equipment. Fixed wing aircraft and helicopters can be used to apply MATRIX® SG, however, do not make applications by fixed wing aircraft unless appropriate buffer zones can be maintained to prevent spray drift out of the target area or, when treating open tracts of land, spray drift as a result of fixed wing aircraft application can be tolerated. Aerial equipment designed to minimize spray drift, such as a helicopter equipped with a Microfoil™ boom or raindrop nozzles, must be used and calibrated. Except when applying with a Microfoil™ boom, a drift control agent may be added at the labeled rate.

### APPLICATION RATES AND TIMING

Apply MATRIX® SG at 2.0 to 4.0 ounces per acre in the fall or spring, prior to moisture expectation and plant growth. Do not apply when soil is frozen. For residual activity, moisture is required to activate MATRIX® SG herbicide. When applied at lower rates in the spring, MATRIX® SG provides suppression\* of weeds listed. When applied at higher rates in the fall, weed control is afforded. \* Weed suppression is a visual reduction in weed competition (reduced population and/or vigor) as compared to an untreated check. The degree of actual control that may occur will vary with the size of the weeds, the degree of weed or desirable grass competition, and environmental conditions.

### TANK MIXTURES

MATRIX® SG may be tank mixed with other herbicides registered for use in rangeland. It may also be tank mixed with any adjuvants registered for rangeland use. Refer to the label of the tank mix partner(s) for any additional use instructions or restrictions. MATRIX® SG may be tank mixed with DuPont™ TELAR® XP herbicide (0.25 to 1.0 ounces per acre) to broaden the spectrum of broadleaf and grass weed control. Refer to the TELAR® XP label for additional information on weed species controlled, use rates, and instructions or restrictions.

### WEEDS CONTROLLED

When applied at 2.0 ounces per acre in the spring, MATRIX® SG suppresses the following weeds and when applied at 3.0 ounces per acre in the fall, MATRIX® SG controls the following weeds:

Brome, downy (cheatgrass)	<i>Bromus tectorum</i>
Brome, Japanese	<i>Bromus japonicus</i>
Cheat	<i>Bromus secalinus</i>

When applied at 4.0 ounces per acre, MATRIX® SG controls the following additional weeds:

Barnyardgrass	<i>Echinochloa crus-galli</i>
Crabgrass, large	<i>Digitaria sanguinalis</i>
Foxtail, giant	<i>Setaria faberi</i>
Foxtail, green	<i>Setaria viridis</i>
Foxtail, yellow	<i>Setaria glauca</i>
Filaree redstem	<i>Erodium cicutarium</i>
Fleabane, hairy	<i>Conyza bonariensis</i>
Mallow, common	<i>Malva neglecta</i>
Marestail/horseweed*	<i>Conyza canadensis</i>
Medusahead	<i>Taeniatherum caput-medusae</i>
Mustard, black	<i>Brassica nigra</i>
Pigweed, redroot	<i>Amaranthus retroflexus</i>
Pigweed, smooth	<i>Amaranthus hybridus</i>
Puncturevine	<i>Tribulus terrestris</i>

\*Naturally occurring resistant biotypes of this weed are known to exist in some areas of the U.S. MATRIX® SG will not control these biotypes.

### USE PRECAUTIONS

Treatment of powdery, dry soil or light, sandy soil when there is little likelihood of rainfall soon after treatment may result in off target movement and possible damage to susceptible crops when soil particles are moved by wind or water. Injury to crops may result if treated soil is washed,



blown, or moved onto land used to produce crops. Exposure to DuPont™ MATRIX® SG may injure or kill most crops. Injury may be more severe when the crops are irrigated. Do not apply MATRIX® SG when these conditions are identified and powdery, dry soil or light or sandy soil are known to be prevalent in the area to be treated.

In order to reduce the potential for off-site movement of MATRIX® SG from wind or water related soil erosion do not burn, disk, or otherwise disturb treated sites between the time of application and reseeding or reestablishment of native grasses.

Crops (especially crops other than pome fruit, tree nuts, stone fruit, citrus, grapes, potatoes, tomatoes, and field corn) whose roots extend into a treated area may be injured.

Do not apply in or on irrigation ditches or canals including their outer banks.

Do not apply through any type of irrigation system.

If restoration sites treated with MATRIX® SG are to be converted to an agricultural use other than rangeland, consult the Rotational Crop Guidelines sections of this label for all rotational crop instructions.

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## ADDITIONAL USE INFORMATION - ALL CROPS AND USES

### MIXING INSTRUCTIONS

MATRIX® SG must be completely dissolved in clean water before adding to spray tanks that do not have continuous agitation during loading and mixing. (This is common for airplanes with turbine engines).

1. Fill the tank 1/4 to 1/3 full of water.
2. While agitating, add the required amount of MATRIX® SG herbicide.
3. Continue agitation until the MATRIX® SG herbicide is fully dissolved, at least 5 minutes.
4. Once the MATRIX® SG herbicide is fully dissolved, maintain agitation and continue filling tank with water.
5. As the tank is filling, add tank mix partners (if desired) then add the required of spray adjuvant (if needed). Always add the spray adjuvant last.
6. Dispersed tank mix partners can settle if the tank mixture is not continually agitated. If settling occurs, thoroughly re-agitate before using.
7. Apply MATRIX® SG herbicide spray mixture within 24 hours of mixing to avoid product degradation.
8. If MATRIX® SG and a tank mix partner are to be applied in multiple loads, fully dissolve the MATRIX® SG in clean water prior to adding to the tank.

If the selected companion herbicide has a ground or surface water advisory, consider this advisory when using the companion herbicide.

### SPRAYER CLEANUP

The spray equipment must be cleaned before MATRIX® SG is sprayed. Follow the cleanup procedures specified on the labels of the previously applied products. If no directions are provided, follow the steps outlined in the "After Spraying MATRIX® SG and before Spraying Other Crops" section of this label.

#### At the End of the Day

When multiple loads of MATRIX® SG herbicide are applied, it is recommended that during periods at the end of each day of spraying, the interior of the tank be rinsed with fresh water and then partially filled, and the boom and hoses be flushed. This will prevent the buildup of dried pesticide deposits from accumulating in the application equipment.

#### After Spraying MATRIX® SG and before Spraying Other Crops

To avoid subsequent injury to desirable crops, thoroughly clean all mixing and spray equipment immediately following applications of MATRIX™ SG as follows:

1. Empty the tank and drain the sump completely.
2. Spray the tank walls with clean water using a minimum volume of 10% of the tank volume. Circulate the water through the lines, including all by-pass lines, for at least two minutes. Flush the boom well and empty the sprayer. Completely drain the sump.
3. Repeat step 2.
4. Remove the nozzles and screens and clean separately in a bucket containing water.

The rinsate solution may be applied back to the crop(s) listed on this label. Do not exceed the maximum labeled use rate. If cleaners are used, consult the cleaner label for rinsate disposal instructions. If no instructions are given, dispose of the rinsate on site or at an approved waste disposal facility.

Notes:

1. Always start with a clean spray tank.
2. Steam-cleaning aerial spray tanks is recommended to facilitate the removal of any caked deposits.
3. When MATRIX™ SG is tank mixed with other pesticides, all cleanout procedures for each product should be examined and the most rigorous procedure should be followed.
4. Follow any pre-cleanout guidelines recommended on other product labels.

### SPRAY DRIFT MANAGEMENT

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

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR. Where states have more stringent regulations, they must be followed.

#### IMPORTANCE OF DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets (>150 - 200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of

sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. **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 sections of this label.

### **CONTROLLING DROPLET SIZE - GENERAL TECHNIQUES**

- Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure - Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. **WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.**
- 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.

### **CONTROLLING DROPLET SIZE - AIRCRAFT**

- Number of Nozzles - Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- Nozzle Orientation - Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.
- Nozzle Type - Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.
- Boom Length - the boom length should not exceed 3/4 of the wing or rotor length--longer booms increase drift potential.
- Application Height - Application more than 10 ft above the canopy increases the potential for spray drift.

### **BOOM HEIGHT**

Set the boom at the lowest height that provides uniform coverage and reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom should remain level with the crop and have minimal bounce.

### **WIND**

Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. **AVOID APPLICATIONS DURING GUSTY OR WINDLESS CONDITIONS.**

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 hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

### **TEMPERATURE INVERSIONS**

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature inversions are characterized by increasing temperature 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.

### **SHIELDED SPRAYERS**

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

### **BIOLOGICAL ACTIVITY AND ENVIRONMENTAL CONDITIONS**

DuPont™ MATRIX® SG is absorbed through the roots and foliage of plants, rapidly inhibiting the growth of susceptible weeds. For Preemergence weed control, rainfall or sprinkler irrigation is needed to move MATRIX® SG into the soil. Weeds will generally not emerge from Preemergence applications. In some cases, susceptible weeds may germinate and emerge a few days after application, but growth then ceases and leaves become chlorotic three to five days after emergence. Death of leaf tissue and growing point will follow in some species, while others will remain green but stunted and noncompetitive.

One to three weeks after postemergence application to weeds, leaves of susceptible plants appear chlorotic, and the growing point subsequently dies. In warm, moist conditions, the expression of herbicide symptoms is accelerated; in cold, dry conditions, expression of herbicide symptoms is delayed. Death of leaf tissue and growing point will follow in some species, while others will remain green but stunted and noncompetitive.

MATRIX® SG provides the best control of weeds in vigorously growing crops that shade competitive weeds. Weed control in areas of thin crop stand or seeding skips may not provide satisfactory control. However, a crop canopy that is too dense at application can intercept spray and reduce weed control.

The herbicidal action of MATRIX® SG may be less effective on weeds stressed from adverse environmental conditions (such as extreme temperatures or moisture), abnormal soil conditions, or cultural practices. In addition, weeds hardened-off by drought stress are less susceptible to MATRIX® SG.

Postemergence Weed control may be reduced if rainfall occurs soon after application. Several hours of dry weather are needed to allow MATRIX® SG to be sufficiently absorbed by weed foliage (generally MATRIX® SG is rainfast in 4 hours).

## RESISTANCE

When herbicides that affect the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in the field. Adequate control to these resistant weed biotypes cannot be expected. If weed control is unsatisfactory, it may be necessary to retreat the problem area using a product affecting a different site of action.

To better manage herbicide resistance through delaying the proliferation and possible dominance of herbicide resistant weed biotypes, it may be necessary to change cultural practices within and between crop seasons such as using a combination of tillage, retreatment, tank-mix partners and/or sequential herbicide applications that have a different site of action. Weed escapes that are allowed to go to seed will promote the spread of resistant biotypes.

It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes. Consult your agricultural dealer, consultant, applicator, and/or appropriate state agricultural extension service representative for specific alternative cultural practices or herbicide usage available in your area.

Naturally occurring weed biotypes that are resistant to "Amber" herbicide, DuPont™ ALLY® herbicide, DuPont™ GLEAN® FC herbicide, DuPont™ EXPRESS® herbicide, DuPont™ HARMONY® EXTRA herbicide, or DuPont™ FINESSE® herbicide will also be resistant to DuPont™ MATRIX® SG.

## INTEGRATED PEST MANAGEMENT

DuPont recommends the use of Integrated Pest Management (IPM) programs to control pests. This product may be used as part of an Integrated Pest Management (IPM) program, which can include biological, cultural, and genetic practices, aimed at preventing economic pest damage. Application of this product should be based on IPM principles and practices including field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop or site systems in your area.

## PRECAUTIONS

- Potato and tomato varieties may differ in their response to various herbicides. DuPont recommends that you first consult your state experiment station, university, or extension agent as to sensitivity to any herbicide. If no information is available, limit the initial use to a small area.
- Preemergence use on soils containing more than 6% organic matter may not provide adequate soil residual weed control and may result in reduced weed control.
- Preemergence and Postemergence use on rill irrigated potatoes and tomatoes (furrow or gravity) may not provide adequate weed control in the absence of rainfall.

- If sprinklers are used for frost protection, delay the application of MATRIX® SG until stress from environmental conditions have passed.
- Avoid spray drift to any adjacent crops or desirable plants as injury may occur.
- Crop injury may occur following an application of MATRIX® SG if there is a prolonged period of cold weather and/or cold weather in conjunction with wet soils caused by poor drainage or excessive use of sprinkler irrigation for frost protection.
- Draining or flushing equipment on or near desirable trees or other plants, or in areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots may injure these plants. Trees or other desirable plants whose roots extend into a treated crop use area may be injured.
- Carefully observe sprayer cleanup instructions, as spray tank residue may damage other crops.
- For best results, maintain spray tank solution at pH 5 to 7.
- Do not apply to frozen or snow covered soil. Crop injury may occur from applications made to poorly drained soils.
- If the selected companion herbicide has a ground or surface water advisory, consider the advisory when using the companion herbicide.
- Tank mixing MATRIX® SG with Organophosphate insecticides in tomatoes may result in crop injury.

## RESTRICTIONS

- Injury to or loss of desirable trees or vegetation may result from failure to observe the following:
  - Do not apply, drain, or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
  - Do not use on lawns, walks, driveways, tennis courts, or similar areas. Prevent drift of spray to desirable plants.
  - Do not contaminate any body of water, including irrigation water that may be used on other crops.
  - Carefully observe sprayer cleanup instructions, as spray tank residue may damage crops other than potatoes or tomatoes.
- Do not apply using Air Assisted (Air Blast) field crop sprayers.



## STORAGE AND DISPOSAL

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

**Pesticide Storage:** Store product in original container only. Store in a cool, dry place.

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

**Container Handling:** Refer to the Net Contents section of this product's labeling for the applicable "Nonrefillable Container" or "Refillable Container" designation.

### **Nonrefillable Plastic and Metal Containers (Capacity Equal to or Less Than 50 Pounds):**

Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 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. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities

### **Nonrefillable Plastic and Metal Containers**

**(Capacity Greater Than 50 Pounds):** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 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. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

### **Nonrefillable Plastic and Metal Containers, e.g., Intermediate Bulk Containers [IBC] (Size or Shape Too Large to be Tipped, Rolled or Turned Upside Down):**

Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying the contents from this container into application equipment or mix tank and before final disposal using the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

### **Nonrefillable Paper or Plastic Bags, Fiber Sacks including Flexible Intermediate Bulk Containers (FIBC) or Fiber Drums With Liners:**

Nonrefillable container. Do not reuse or refill this container. Completely empty paper or plastic bag, fiber sack or drum liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Then offer for recycling if available or dispose of empty paper or plastic bag, fiber sack or fiber drum and liner in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

**Refillable Fiber Drums With Liners:** Refillable container (fiber drum only). Refilling Fiber Drum: Refill this fiber drum with DuPont™ MATRIX® SG Herbicide containing rimsulfuron only. Do not reuse this fiber drum for any other purpose. Cleaning before refilling is the responsibility of the refiller. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Disposing of Fiber Drum and/or Liner: Do not reuse this fiber drum for any other purpose other than refilling (see preceding). Cleaning the container (liner and/or fiber drum) before final disposal is the responsibility of the person disposing of the container. Offer the liner for recycling if available or dispose of liner in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. If drum is contaminated and cannot be reused, dispose of it in the manner required for its liner. To clean the fiber drum before final disposal, completely empty the fiber drum by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Then offer the fiber drum for recycling if available or dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.



**All Other Refillable Containers:** Refillable container. Refilling Container: Refill this container with DuPont™ MATRIX® SG containing rimsulfuron only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn out threads and closure devices. If damage is found, do not use the container, contact DuPont at the number below for instructions. Check for leaks after refilling and before transporting. If leaks are found, do not reuse or transport container, contact DuPont at the number below for instructions. Disposing of Container: Do not reuse this container for any other purpose other than refilling (see preceding). Cleaning the container before final disposal is the responsibility of the person disposing of the container. To clean the container before final disposal, use the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

**Outer Foil Pouches of Water Soluble Packets (WSP):** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or, dispose of the empty outer foil pouch in the trash as long as WSP is unbroken. If the outer pouch contacts the formulated product in any way, the pouch must be triple rinsed with clean water. Add the rinsate to the spray tank and dispose of the outer pouch as described previously.

Do not transport if this container is damaged or leaking. If the container is damaged, leaking or obsolete, or in the event of a major spill, fire or other emergency, contact DuPont at 1-800-441-3637, day or night.

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