

352-837

12/20/2010

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U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Registration Division (7505P)  
Ariel Rios Building  
1200 Pennsylvania Ave., NW  
Washington, D.C. 20460

EPA Reg. Number:

352-837

Date of Issuance:

December 20, 2010

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
(under FIFRA, as amended)

Term of Issuance: **Conditional**

Name of Pesticide Product:

DuPont Realm Q Herbicide

Name and Address of Registrant (include ZIP Code):

E.I. du Pont de Nemours and Company  
1007 Market Street  
Wilmington, DE 19898

~~Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product, always refer to the above EPA registration number.~~

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA provided that you:

1. Submit and/or cite all data required for registration review/reregistration of your product when the Agency requires all registrants of similar products to submit data.
2. Submit one-year Storage Stability (Guideline 830.6317) and Corrosion Characteristics (Guideline 830.6320) studies within one-year from the date of this notice.
3. Make the following label changes:
  - a. Change the EPA Reg. No. to "352-837".
  - b. Change the heading from "Inert Ingredients" to "Other Ingredients".
  - c. Change the heading to "PERSONAL PROTECTIVE EQUIPMENT (PPE)".
  - d. Change the User Safety Requirements phrase to "If no such washables exist".
  - e. Change the User Safety Recommendations phrase to "Remove clothing/PPE".

Continued on Page 2

Signature of Approving Official:

Jim Tompkins  
Product Manager 25  
Herbicide Branch  
Registration Division (7505P)

Date:

December 20, 2010

- f. Change the Environmental Hazards phrase to “equipment washwaters **or rinsate**”.
- g. Correct the typo in the Surface Water Advisory from “product=s” to “**product’s**”.
- h. Change the restricted entry interval (REI) from “4 hours” to “**12 hours**”, as required for mesotrione.
- i. Change all instances of the heading from “GENERAL INFORMATION” to “**PRODUCT INFORMATION**”.
- j. On page 2, change the paragraph to “DuPont REALM Q herbicide **must** be used only in accordance with **directions** on this label or in supplemental DuPont publications. DuPont will not be responsible for losses or damage resulting from the use of this product in any manner not specifically **directed** by DuPont.”
- k. Change the restrictions in the highlighted box to “Do not apply more than 4.0 oz of REALM Q **per acre** per growing season...” and “Do not apply more than 1.0 oz active ingredient rimsulfuron **per acre** per growing season.”
- l. Under APPLICATION INFORMATION, correct the typos in the sentence to “Apply REALM Q at 4.0 **ounces per acre** as a postemergence broadcast application.”
- m. On page 3, change the phrases from “glyphosate-tolerant corn” to “**Roundup Ready corn**”; from “glufosinate-tolerant corn” to “**Liberty Link corn**”; and from “glyphosate tolerant gene” to “**Roundup Ready gene**”.
- n. On page 4 under Tank Mix Compatibility Testing, correct the typo from “? hour” to “**1/2 hour**”.
- o. Under Application and Spray Volumes, correct the typo from “10 GAP” to “**10 GPA**”, and from “ASAE stands S-572” to “**ASABE standard S572.1**”
- p. Under Restrictions/Precautions, add the statement “**This product contains 0.0375 pound of the safener isoxadifen-ethyl per pound of product. Applying the maximum application rate of REALM Q herbicide at 4 ounces per acre will deliver 0.01 pound of isoxadifen-ethyl per acre. When tank mixing for applications to field corn, do not apply more than a total of 0.17 pound of isoxadifen-ethyl per acre per crop season.**”
- q. On page 5, change the restriction to “**Do not graze forage, grain, or fodder (stover) from treated areas to livestock within 45 days of REALM Q application. Do not harvest grain within 70 days or harvest forage or stover within 45 days of REALM Q application.**”
- r. Under Rotational Crop Guidelines, make the following changes:
  - i. Change the sentence to “The following rotational intervals **must** be observed when using REALM Q:”

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- ii. Change the rotational crop heading to “4.0 OZ USE RATE **PER ACRE PER SEASON**”.
- iii. Change the rotational interval for Cereals, Winter (wheat) from “3 months” to “**4 months**” as stated for mesotrione.
- iv. Remove the rotational interval for Tomato, since it falls under the “18 months” Crops not listed category based on mesotrione.
- v. Change the footnote to “Planting unspecified rotational crops, or those rotational crops that are specified at shorter than **listed** intervals may result in injury to the rotational crop.”
- s. On page 6 under Importance of Droplet Size, remove the phrase “(>150 m-200 microns)” since it is an improper designation of large droplets in accordance with ASABE S572.1.
- t. Under Wind, change the phrase from “Locale terrain” to “**Local terrain**”.
- u. Change the Pesticide Disposal phrase to “**must** be disposed of on site”.
- v. Add the “site of action” symbols as outlined in PRN 2001-5

The basic confidential statement of formula (CSF) dated April 15, 2010 is acceptable provided the following changes are made:

List only one inert ingredient and its supplier in the basic formulation. The alternate inert ingredients and their supplier can be included on an alternate CSF. At least one supplier's name and address should be provided for each component on the basic CSF.

The certified limits on the basic CSF are unacceptable and must be revised to follow the guidance in 40 CFR 158.350.

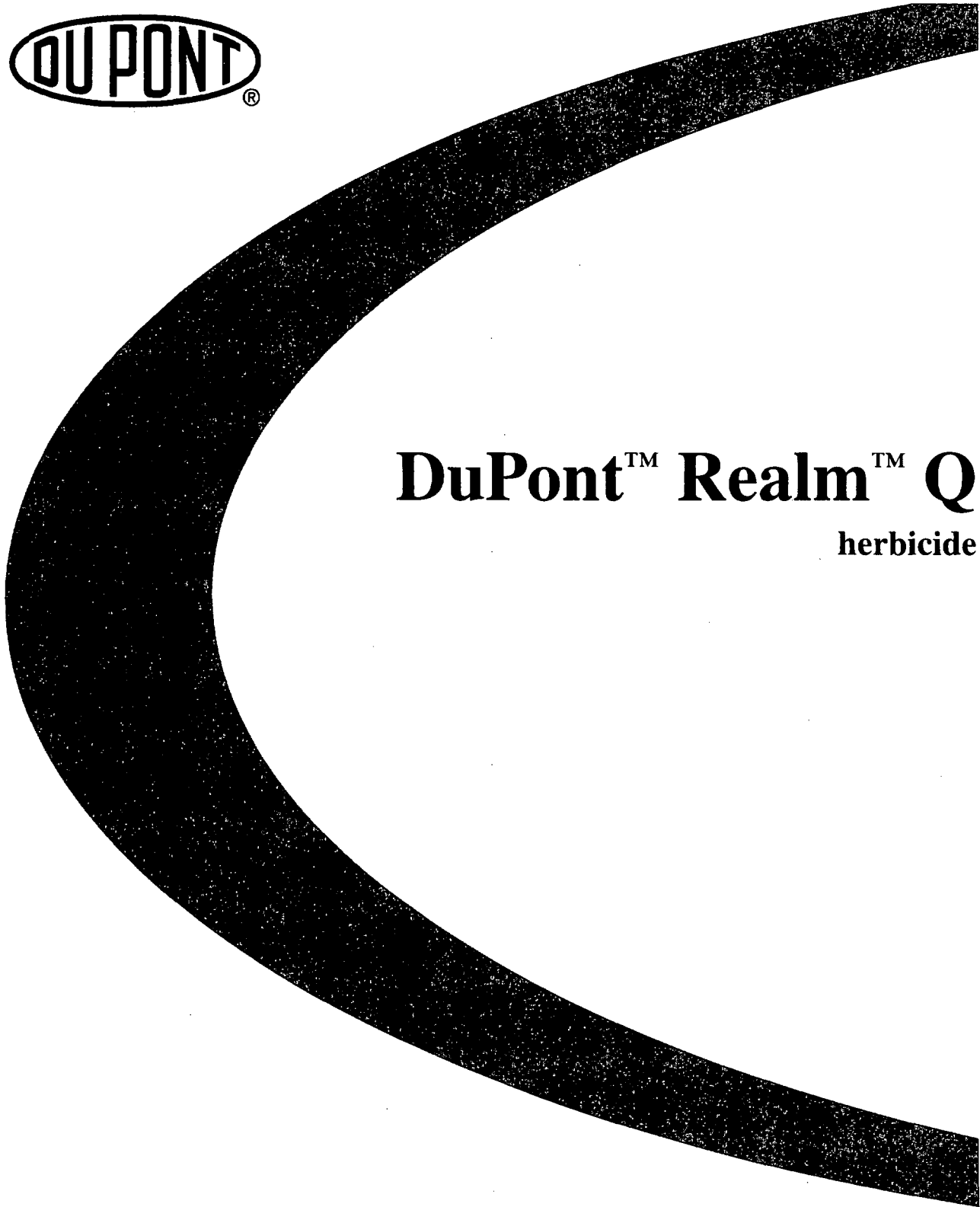
A revised basic and alternate CSFs must be submitted within 30 days of the date of this letter.

A stamped copy of the label is enclosed for your records. Submit one (1) copy of the revised final printed label before you release the product for shipment. Products shipped after eighteen (18) months from the date of this notice or the next printing of the label, whichever occurs first, must bear the new revised label. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA §6(e). Your release for shipment of the product constitutes acceptance of these conditions.

Enclosure

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**DuPont™ Realm™ Q**  
herbicide

**DRAFT LABEL**

### DUPONT™ REALM™ Q HIGHLIGHTS

- REALM™ Q provides selective postemergence grass and broadleaf weed control in field corn.
- Apply at a rate of 4 ounces product per acre.
- Include an adjuvant as recommended in this label. The use of nitrogen fertilizer is required in addition to the use of a crop oil concentrate or nonionic surfactant unless otherwise noted. See SPRAY ADJUVANT.
- REALM™ Q may be applied by ground (broadcast or band).
- For ground application, apply in a minimum of 15 gallons of water at 20-40 PSI using flat fan nozzles for best results.
- Recommended tank mixes are specified on this label. See TANK MIX APPLICATIONS.
- Apply to actively growing grass and broadleaf weeds at the recommended sizes. See RATE.
- Applications made to grasses or corn under stress may affect the performance or in some cases reduce crop tolerance.
- Consult label text for complete instructions. Always read and follow label directions for use.

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ACCEPTED  
with COMMENTS  
in EPA Letter Dated

DEC 20 2010

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.

352-851



DuPont™

Realm™ Q

herbicide

For postemergence use in Field Corn

Active Ingredients	By Weight
Rimsulfuron	
N-((4,6-dimethoxypyrimidin-2-yl)aminocarbonyl)-3-(ethylsulfonyl)-2-pyridinesulfonamide	7.50%
Mesotrione	31.25%
<b>Inert Ingredients</b>	<b>61.25%</b>
<b>TOTAL</b>	<b>100.0%</b>

EPA Reg. No. 352-XXX EPA Est. No. \_\_\_\_\_

Nonrefillable Container

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

OR

Refillable Container

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

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

**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:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor. Do not give anything to an unconscious person.

**IF INHALED:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

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

**PRECAUTIONARY STATEMENTS  
HAZARD TO HUMANS  
AND DOMESTIC ANIMALS**

CAUTION. Causes moderate eye irritation. Avoid contact with eyes or clothing.

**PERSONAL PROTECTIVE EQUIPMENT**

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, use detergent and hot water. Keep and wash PPE separately from other laundry.

**Engineering Control Statements**

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**USER SAFETY RECOMMENDATIONS**

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

**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.

**Surface Water Advisory**

This product may contaminate water through drift of spray in wind. This product has a high potential for runoff for several weeks after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling

Do not apply this product in a way that will contact workers or others 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 Category A (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber), all > 14 mils.

Shoes plus socks.

## GENERAL INFORMATION

DuPont™ REALM™ Q herbicide should be used only in accordance with recommendations on this label or in supplemental DuPont publications. DuPont will not be responsible for losses or damage resulting from use of this product in any manner not specifically recommended by DuPont.

REALM™ Q is a selective herbicide for burndown and residual control of certain annual grass and broadleaf weeds when applied postemergence to field corn.

REALM™ Q can be tank mixed with a variety of herbicides to improve burndown and residual control.

REALM™ Q is absorbed through the roots and leaf tissue of plants, rapidly inhibiting the growth of susceptible weeds. Rainfall or sprinkler irrigation is needed to move REALM™ Q into the soil. Susceptible weeds will generally not emerge from a postemergence application with activating rainfall or sprinkler irrigation (>0.5 inch). 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, stunted and noncompetitive.

REALM™ Q is best used in a planned as part of a sequential application herbicide program, following a before-planting application of DuPont™ BASIS®, DuPont™ BREAKFREE® or DuPont™ CINCH® brands, DuPont™ PREQUEL™, DuPont™ RESOLVE® Q herbicides and/or other pre-applied corn herbicides. Refer to the label of the respective corn herbicide partner for specific use directions.

For post emergence applications of REALM™ Q, if activating rainfall or sprinkler irrigation (>0.5 inch) is not received within 5 to 7 days after application, follow with a cultivation or with a sequential application of DuPont™ ACCENT® Q herbicide, or glyphosate as needed.

- Do not apply to field corn grown for seed; to popcorn or to sweet corn.
- Do not apply more than 4.0 oz of REALM™ Q per growing season unless instructed to do so by DuPont Technical Bulletins, or Supplemental Labeling.
- Do not apply more than 1.0 oz active ingredient rimsulfuron per growing season. This includes postemergence applications of REALM™ Q, as well as rimsulfuron from applications of products such as BASIS®, PREQUEL™, RESOLVE® Q, RESOLVE® SG and DuPont™ STEADFAST® Q.

## APPLICATION INFORMATION

### Field Corn - Postemergence

#### Rate

Apply REALM™ Q at 4.0 ounce per acres as a post emergence broadcast application. Consult DuPont technical bulletins, fact sheets or supplemental labeling for additional application rate information.

#### Unit Area Pack

REALM™ Q herbicide is a unit area pack herbicide that is used at the rate of 4.0 ounces per acre per application. One 80 ounce unit area pack will treat 20 acres at the 4.0 ounce per acre application rate. After opening the REALM™ Q package, you must completely empty the entire contents into the spray tank.

#### Timing to Crop

Apply REALM™ Q to corn that is up to 20 inches tall. Do not apply to corn taller than 20 inches or exhibiting 7 or more leaf collars, whichever is more restrictive.

While REALM™ Q has a wide application window, research has shown best results are obtained when applications are made early postemergence (row n' go) when corn and weeds are small. Target post applications to corn generally less than 12" tall for best overall performance.

Applications of REALM™ Q made after weed emergence will provide contact control of labeled weeds as well as residual control of later emerging weeds.

#### Timing to Emerged Weeds

Apply REALM™ Q when grasses and broadleaf weeds are young and actively growing, but before they exceed sizes listed on this label. Applications made to weed sizes greater than those listed on this product label may result in incomplete control. Grass and broadleaf weed competition due to incomplete control may reduce corn yields.

On glyphosate-tolerant corn, glyphosate may be applied with DuPont™ REALM™ Q after weeds emerge but before they reach the maximum size listed on the glyphosate herbicide label.

On glufosinate-tolerant corn, glufosinate may be applied with REALM™ Q after weeds emerge but before they reach the maximum size listed on the glufosinate herbicide label.

**Sequential Application - Pre**

REALM™ Q may be used as a sequential application in a planned postemergence weed control program in corn following a reduced rate of a preemergence herbicide.

Apply pre products such as DuPont™ BASIS®, DuPont™ BREAKFREE® or DuPont™ CINCH® brands, DuPont™ PREQUEL™, DuPont™ RESOLVE® Q herbicides. Refer to the preemergence grass herbicide label for use restrictions, application information, rotational crop guidelines, and cautionary statements prior to applying REALM™ Q.

Do not apply REALM™ Q to corn that exhibits herbicide injury from previous applications made to the current or preceding crop.

**Spray Adjuvants**

For control of emerged weeds, applications of REALM™ Q must include a crop oil concentrate or a nonionic surfactant. In addition, an ammonium nitrogen fertilizer must be used unless specifically prohibited by tank mix partner labeling.

Crop oil concentrate plus ammonium nitrogen fertilizer is the preferred adjuvant system for REALM™ Q for control of emerged weeds. When applied in tank mix combination with a glyphosate that contains a built-in adjuvant, ensure the total adjuvant load is equivalent to the recommendations on this label. Select adjuvants authorized for use with both products.

Consult local DuPont fact sheets, technical bulletins or supplemental labels prior to using other adjuvant systems. Products must contain only EPA-exempt ingredient (40 CFR 1001).

Do not use with spray additives that alter the pH of the spray solution below 5.0 or above 9.0 as rapid product degradation can occur. Spray solutions of pH 6.0 – 8.0 allow for optimum stability of REALM™ Q.

**Petroleum Crop Oil Concentrate (COC)**

- Apply at 1% (1 gallon per 100 gallon 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.

**Nonionic Surfactant (NIS)**

- Apply at 0.25% v/v (1 quart per 100 gallon spray solution)
- Surfactant products must contain at least 60% nonionic surfactant with a hydrophilic/lipophilic balance (HLB) greater than 12.
- Do not use liquid nitrogen fertilizer as the total carrier solution for postemergence applications.

**Ammonium Nitrogen Fertilizer**

- Use 2 quarts per acre of a high quality urea ammonium nitrate (UAN) such as 27%N or 32%N, or 2 pounds per acre of a spray-grade ammonium sulfate (AMS)

**Special Adjuvant Types**

- Combination adjuvant products may be used at doses that provide the required amounts of NIS, COC, and/or ammonium nitrogen fertilizer. Consult product literature for use rates and restrictions.

**Weeds Controlled/Suppressed**

**REALM™ Q 4.0 oz/acre**

Refer to the Spray Adjuvants section for additional information on proper adjuvant selection.

**Grasses (1 – 2")**

- Barley, volunteer
- Barnyardgrass
- Bluegrass, annual
- Crabgrass, large (1/2")
- Cupgrass, woolly (1")
- Foxtail (bristly, giant, green, yellow)
- Johnsongrass, seedling\*
- Millet, Wild Proso\*
- Panicum, fall
- Quackgrass\*
- Ryegrass, Italian\*
- Shattercane (4")
- Signalgrass, broadleaf\*
- Stinkgrass\*
- Wheat, volunteer
- Wild oat\*
- Yellow nutsedge\*

\*partial control/suppression

**Broadleaves (<5" tall)**

- Amaranth (Palmer, Powell, Spring)
- Buckwheat, wild
- Buffalobur
- Burcucumber
- Canada thistle\*
- Carpetweed
- Carrot, wild
- Chickweed, common
- Cocklebur
- Curly dock
- Dandelion
- Hemp
- Horsenettle
- Jimsonweed
- Knotweed, prostrate
- Kochia
- Ladysthumb
- Lambsquarters, common
- Mallow, Venice
- Morningglory, (ivyleaf, tall\*)
- Mustard, wild
- Nightshade, (hairy, Eastern black)
- Nutsedge, Yellow\*
- Pigweed, (prostrate, redroot, smooth)
- Pokeweed, common\*
- Ragweed, (common, giant)
- Sesbania, hemp
- Sida, prickly
- Smartweed, Pennsylvania
- Velvetleaf
- Waterhemp
- Wild radish
- Wild sunflower

\*partial control/suppression

**REALM™ Q 4.0 oz/acre with Glyphosate**

Glyphosate may be tank mixed with post emerge applications of REALM™ Q when made to corn hybrids containing the glyphosate tolerant gene. Refer to the Spray Adjuvants section for additional information on proper adjuvant selection.



When used in a tank mixture with glyphosate herbicide, 4.0 ounces DuPont™ REALM™ Q will deliver improved burndown and/or residual activity on the following weeds.

- Alfalfa, volunteer
- Canada thistle
- Chamomile, false
- Crabgrass
- Filaree, redstem
- Henbit
- Johnsongrass, seedling
- Millet, Wild Proso
- Morningglory, ivyleaf
- Mustard (birdsrape, black, wild)
- Purslane, common
- Quackgrass
- Ryegrass, Italian
- Sandbur (field, longspine)
- Shepherd's purse
- Signalgrass, broadleaf
- Stinkgrass
- Waterhemp, (smooth, tall)
- Wild buckwheat
- Wild oat
- Yellow Nutsedge

**REALM™ Q 4.0 oz/acre with Glufosinate**

REALM™ Q may be tank mixed with glufosinate herbicide if applications are made to corn hybrids containing the "Liberty Link" gene. Consult with your seed supplier to confirm the corn hybrid is "Liberty Link" before applying any herbicide containing glufosinate.

**Tank Mixtures - Additional Control of Broadleaf and Grass Weeds**

REALM™ Q may be tank mixed with full or reduced rates of other post-emerge labeled grass and broadleaf herbicides such as Atrazine, DuPont™ CINCH®, and DuPont™ BREAKFREE® brands, to provide added residual or burndown activity on emerged weeds. Consult tank mix partner labeling for rate and soil-type restrictions. Read and follow all manufacturers' label instructions for the companion herbicide(s). Do not use a tank mix partner product if its label conflicts with this REALM™ Q label.

Ensure the tank mix product is labeled for the same timing, method of application, adjuvants, and use restrictions as REALM™ Q, as well as other products used in the tank mixture.

As EC formulations, CINCH® and BREAKFREE® herbicides can act like an adjuvant in certain combinations and thus increase the risk of crop injury. If either of these tank mixtures are used, the user should leave the crop oil concentrate (COC) out of the adjuvant mix.

REALM™ Q may be tank mixed with CINCH® ATZ, CINCH® ATZ lite, BREAKFREE® ATZ, or BREAKFREE® ATZ LITE, but special attention must be paid to adjuvant selection and/or application method. If any of these tank mixtures are used the user should leave the nitrogen based adjuvant (UAN or AMS) out of the mix. There is still a risk of temporary crop injury in the form of leaf burn with these mixtures. To further reduce the risk of crop injury, the user may also leave out the crop oil concentrate (COC), or replace it with a nonionic surfactant (NIS).

In either case, the control of emerged weeds may be reduced somewhat due to less than optimum adjuvant effect or weed coverage and there is still a risk of temporary crop injury in the form of leaf burn with these mixtures.

Read and follow all applicable use directions, precautions, and limitations specified on the respective product labels, technical bulletins, fact sheets, and supplemental labels.

**Tank Mix Compatibility Testing**

Perform a jar test prior to tank mixing to ensure compatibility of REALM™ Q and other pesticides. Use a clear quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 2 hour. If the mixture balls-ups, forms flakes, sludge, gel, oily film or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

**Mixing Instructions**

**Water Carrier Instructions**

1. Fill the tank 1/4 to 1/3 full of water
2. While agitating, add the required amount of REALM™ Q
3. Continue agitation until the REALM™ Q is fully dispersed
4. Once dispersed, maintain agitation and continue filling tank with water
5. As tanks fills, add desired tank mix partners
6. If not continuously agitated, settling will occur. If settling occurs, thoroughly re-agitate before using
7. Apply mixture within 48 hours of mixing for best results

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

**Application and Spray Volumes**

**Ground**

Use a minimum of 15 gallons of water per acres (GPA) to ensure thorough coverage of the weeds and the best performance. Use a minimum of 10 GAP for light, scattered stands of weeds.

Avoid spray overlaps as excessive rates may result in adverse crop response.

To minimize spray drift to non-target areas, apply this product using nozzles which deliver a coarse or larger spray droplet as defined by ASAE stands S-572 and as shown in nozzle manufacturer's catalogs. Keep the spray boom at the lowest possible spray height above the target surface. Refer to nozzle manufacturer's recommendations for proper nozzle, pressure setting and sprayer speed for optimum product performance and minimal spray drift. Use sprayers that provide accurate and uniform coverage.

Maintain adequate agitation at all times, including momentary stops.

**RESTRICTIONS/PRECAUTIONS**

**General**

Do not tank mix REALM™ Q with "Basagran" or severe crop injury may occur.

Do not tank mix REALM™ Q with foliar-applied organophosphate insecticides such as "Lorsban", malathion, parathion, etc, as severe crop injury may occur.

Injury or loss of desirable trees or vegetation may result from failure to observe the following:

- Do not apply DuPont™ REALM™ Q or drain or flush application 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 or spray onto desirable plants
- Do not contaminate any body of water
- Thoroughly clean application equipment immediately after use (See Sprayer Cleanup section of this label)

Do not graze, feed forage, grain or fodder (stover) from treated areas to livestock within 30 days of REALM™ Q application.

Do not use aerial application to apply REALM™ Q.

Do not apply this product through any type of irrigation system

Do not use flood or furrow irrigation to apply, activate, or incorporate REALM™ Q.

Crop injury may occur following an application of REALM™ Q if there is a prolonged period of cold weather and/or in conjunction with wet soils.

**Soil Insecticide Interaction**

REALM™ Q may interact with certain insecticides previously applied to the crop. Crop response varies with field corn type, insecticide used, insecticide application methods, and soil type.

REALM™ Q may be applied to corn previously treated with Fortress, SmartChoice, Aztec, or Force insecticides, or other non-organophosphate soil insecticides regardless of soil type.

Severe corn injury may occur if REALM™ Q is applied postemergence to corn crops that were treated with "Counter" or "Lorsban", which may result in yield loss.

**ROTATIONAL CROP GUIDELINES**

Rotational crops vary in their crop response to low concentrations of REALM™ Q remaining in the soil. The amount of REALM™ Q that may be present in the soil depends on soil moisture, soil temperature, application rate, elapsed time since application and other environmental factors. When REALM™ Q is used in combination with other products, always follow the most restrictive rotational crop requirements.

The following rotational intervals should be observed when using REALM™ Q:

**4.0 OZ USE RATE PER SEASON**

<b>Rotational Crop</b>	<b>Interval (months)</b>
Corn, Field	Anytime
Cereals, Winter (wheat)	3
Cereals, Spring (wheat, oats, barley)	9
Alfalfa*†	10
Cotton†	10
Canola†	10
Potatoes	10
Tomato	10
Flax	10
Sorghum†	10
Corn, pop or sweet	10
Soybeans	10
Sunflower	10
Crops not listed	18

\*On sprinkler irrigated fields in Idaho, Utah, and Northern Nevada it is best to use deep fall tillage such as plowing prior to planting alfalfa. Product degradation may be less on furrow irrigated soils and may result in some crop injury.

†18 months in the Red River Valley region of ND and MN. In all other areas, the rotation intervals should be extended to 18 months if drought conditions prevail after application and before the rotational crop is planted, unless sprinkler irrigation has been applied and totals greater than 15" during the growing season.

If REALM™ Q is applied postemergence following a mesotrione-containing preemergence herbicide, only corn (all types) or grain sorghum may be replanted the year following application, or severe crop injury may occur.

- Planting unspecified rotational crops, or those rotational crops that are specified at shorter than recommended intervals may result in injury to the rotational crop.

**SPRAYER PREPARATION/CLEANUP**

It is important that spray equipment is clean and free of previous pesticide deposits before using REALM™ Q, and then properly cleaned out following application. Clean all application equipment before applying REALM™ Q.

Follow the cleanup procedures specified on the label of the product previously sprayed. If no cleanup procedure is provided, use the procedure that follows. Immediately following applications of REALM™ Q, thoroughly clean all mix and spray equipment to avoid subsequent crop injury.

Note:

When cleaning spray equipment before applying REALM™ Q, read and follow label directions for proper rinsate disposal of the product previously sprayed.

When spraying or mixing equipment will be used over an extended period to apply multiple loads of REALM™ Q, partially fill the tank with fresh water at the end of each day of spraying, flush the boom and hoses, and allow to sit overnight.

**Cleanup Procedure**

1. Drain the tank and hose down the interior surfaces with clean water
2. Partially fill the tank with clean water and add one gallon of household ammonia\* (containing 3% active) for every 100 gallons of water. Finish filling tank with water, then flush the cleaning solution through the hoses, boom, and nozzles. Add more water to completely fill the tank and allow agitating / re-circulating for at least 15 minutes.

Again, flush the hoses, boom, and nozzles with the cleaning solution, then drain the tank.

3. Repeat Step 2
4. Remove the nozzles and screens and clean separately in a bucket containing the cleaning agent and water.
5. Thoroughly rinse the tank with clean water for a minimum of 5 minutes, flushing the water through the hoses and boom.

\*Equivalent amount of an alternate strength ammonia solution or a tank cleaner recommended in the DuPont bulletin "Sulfonylurea Herbicides, A Guide to Equipment Cleanout" may be used.

**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.

**IMPORTANCE OF DROPLET SIZE**

The most effective way to reduce drift potential is to apply large droplets (> 150 m- 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 for additional information.

**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 pressure 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.

**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 increase 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 APPLICATION DURING GUSTY OR WINDLESS CONDITIONS.**

Note – Locale 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, dry conditions, calibrate spray equipment to produce larger droplets to reduce the 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 cold 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.

**AIR-ASSISTED (AIR BLAST) FIELD CROP SPRAYERS**

Air-assisted field crop sprayers carry droplets to the target via a downward-directed airstream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application and is configured properly, and that drift is not occurring.

**INTEGRATED PEST MANAGEMENT**

This product may be used as part of an Integrated Pest Management (IPM) program that can include biological, cultural, and genetic practices aimed at preventing economic pest damage. IPM principles and practices include 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 consultant or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest / crop systems in your area

**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 that field. Adequate control of 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 recommendation available in your area.

**STORAGE AND DISPOSAL**

**PESTICIDE STORAGE:** Store product in original container only. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in a cool, dry place.

**PESTICIDE DISPOSAL:** Do not contaminate water, food, or feed by disposal. Waste resulting from the use of this product may 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 Rigid Plastic and Metal Containers (Capacity Equal to or Less Than 5 Gallons):** 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 and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. 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 Rigid Plastic and Metal Containers (Capacity Greater Than 5 Gallons):** 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 Rigid 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.

**All Refillable Containers: Refillable container.**  
**Refilling Container:** Refill this container with DuPont™ REALM™ Q containing rimsulfuron and mesotrione 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 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.

Do not transport if 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.

formulation of this product other than as described on this label is expressly not authorized.

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