

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

May 1, 2020

S. K. Theodorakis Registration Manager Corteva Agriscience Chestnut Run Plaza LR735/4160-8 974 Centre Road Wilmington, DE 19805

Subject: Registration Review Label Mitigation for Nicosulfuron

Product Name: Revulin Q Herbicide EPA Registration Number: 352-900 Application Date: 10/18/2018 Decision Number: 545134

Dear Mr. Theodorakis:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all of the information submitted with your application to support the Registration Review of the above referenced product in connection with the Sulfonylurea (SU) Herbicides Interim Decision, and has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

A copy of your label stamped "Accepted" is enclosed. Products shipped after 12 months from the date of this amendment must bear the new revised label. Your release for shipment of the product bearing the amended label constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6.

Page 2 of 2 EPA Reg. No. 352-900 Decision No. 545134

If you have any questions about this letter, please contact Erik Kraft by phone at 703-308-9358, or via email at <u>Kraft.Erik@epa.gov</u>.

Sincerely,

Erik Kraft, Product Manager 24 Fungicide and Herbicide Branch Registration Division (7505P) Office of Pesticide Programs

Enclosure

Page 1

(Base label):

## REVULIN® Q HERBICIDE

[Alternate Brand Name: Revulin Q]

ACCEPTED

05/01/2020

Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 250, 200

352-900

NICOSULFURON	GROUP	2	HERBICIDE
MESOTRIONE	GROUP	27	HERBICIDE

For postemergence use in Field Corn grown for grain, silage or seed, Yellow Popcorn or Sweet Corn

Active Ingredients	By Weight
Nicosulfuron	
2-[[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]aminosulfonyl]	
-N,N-dimethyl-3-pyridinecarboxamide	14.4%
Mesotrione	36.8%
Other Ingredients	48.8%
TOTAL	100.0%

# 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.)

## **Precautionary Statements**

## Hazards to Humans and Domestic Animals CAUTION

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

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

Mixers, loaders, applicators, and other handlers must wear:

- Long-sleeved shirt and long pants.
- Chemical resistant gloves made of any water proof material such as polyethylene or polyvinylchloride.
- Shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exists, 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**

#### **USERS SHOULD:**

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

## **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 poison control center or doctor immediately for treatment advice. Have person sip a glass of water by mouth if able to swallow. **DO NOT** induce vomiting unless told to do so by the poison control center or doctor. **DO NOT** give anything by mouth 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 1-800-992-5994 for emergency medical treatment information.

#### **ENVIRONMENTAL HAZARDS**

**DO NOT** apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment wash water or rinsate. **DO NOT** apply where/when conditions could favor runoff.

## **Groundwater Advisory**

This product is known to leach through soil into groundwater under certain conditions as a result of label use. This product may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

#### **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 including 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.

#### Windblown Soil Particles Advisory

This product has the potential to move off-site due to wind erosion. Soils that are subject to wind erosion usually have a high silt and/or fine to very fine sand fractions and low organic matter content. Other

factors which can affects the movement of windblown soil include the intensity and direction of prevailing winds, vegetative cover, site slope, rainfall, and drainage patterns. Avoid applying this product if prevailing local conditions may be expected to result in off-site movement.

#### **Non-target Organism Advisory**

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated area. Protect the forage and habitat of non-target organisms by minimizing spray drift. For further guidance and instructions on how to minimize spray drift, refer to the Spray Drift Management section of this label.

## Agricultural Use Requirements

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

## 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:** 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 liner in a sanitary landfill, or by incineration. **DO NOT** burn, unless allowed by state and local ordinances.

**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.

[Note to Reviewer: The referral statement below is optional. Please also note that this Note to Reviewer appearing within brackets will not appear on the final printed label.]

See back and side panels for additional precautionary statements.

Refer to the accompanying labeling enclosed for additional precautions, complete Directions for Use and Storage and Disposal.

NOTICE TO BUYER: Purchase of this material does not confer any rights under patents of countries other than the United States. This product includes ingredients that are covered under one or more of the following Bayer CropScience patents: 6,486,096; 6,569,805; 5,922,646; and 5,516,750. Purchase of this product includes a license for use only as specified on this label. Any use, mixture or formulation of this product other than as described on this label is expressly not authorized.

EPA reg. No. 352-900	EPA Est. No.

<sup>®™</sup> Trademarks of Dow AgroSciences, DuPont or Pioneer and their affiliated companies or respective owners

Produced for E.I du Pont de Nemours & Company Chestnut Run Plaza 974 Centre Road Wilmington, DE 19805

Nonre	efillable Container
Net:	
	OF
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(cover/shipping container):

## REVULIN® Q HERBICIDE

[Alternate Brand Name: Revulin Q]

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Wilmington, DE 19805

Nonrefillabl Net:	e Container
	OR
Refillabl	e Container
Not:	

(Page 1 through end):

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## **DIRECTIONS FOR USE**

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

DuPont REVULIN® Q herbicide, also referred to below as, DuPont REVULIN® Q herbicide or DuPont REVULIN® Q, must be used in accordance with the directions for use on this label., or in separate published directions. To the extent consistent with applicable law, DuPont will not be responsible for losses or damage resulting from use of this product in any manner not specifically directed by DuPont. Always read the entire label, including the Limitation of Warranty and Liability.

**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 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

Coveralls.

Chemical resistant gloves made of any water proof material such as polyethylene or polyvinylchloride.

Shoes plus socks.

## PRODUCT INFORMATION

DuPont REVULIN® Q is a selective herbicide for burndown and residual control of certain annual grass and broadleaf weeds when applied postemergence to field corn grown for grain, silage or seed, yellow popcorn or sweet corn.

DuPont REVULIN® Q can be tank mixed with a variety of herbicides to improve burndown and residual control.

DuPont REVULIN® Q may also be applied with pyrethroid or diamide type insecticides.

DuPont REVULIN® 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 DuPont REVULIN® Q into the soil. Susceptible weeds will generally not emerge from a postemerge 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.

DuPont REVULIN® Q is best used as part of a sequential application herbicide program, following a preplant or preemergence application of other pre-applied corn herbicides. Refer to the label of the respective corn herbicide partner for specific use directions.

For postemergence applications of DuPont REVULIN® 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 ACCENT® Q herbicide or glyphosate product including ABUNDIT® Edge or Durango® DMA® as needed.

Degree of control and duration of effect depend on: rate used, weed spectrum, growing conditions at and following time of treatment, soil pH, soil texture, organic matter, moisture and precipitation.

## **RESTRICTIONS**

Make only one application of DuPont REVULIN® Q per year

**DO NOT** apply more than 4.0 oz (0.036 lb nicosulfuron and 0.092 lb mesotrione) of DuPont REVULIN® Q per acre in a single application.

**DO NOT** apply more than 4.0 oz (0.036 lb nicosulfuron and 0.092 lb mesotrione) of DuPont REVULIN® Q per acre per year.

**DO NOT** apply more than 3.85 ounces of mesotrione in a year. This includes postemergence applications of DuPont REVULIN® Q, as well as mesotrione from application(s) of products including INSTIGATE®, Realm® Q, and Resicore® herbicides.

**DO NOT** apply more than 1.0 ounce of nicosulfuron in a year. This includes postemergence applications of DuPont REVULIN® Q, as well as nicosulfuron from application(s) of products including ACCENT® Q or STEADFAST® Q herbicides.

**DO NOT** tank mix DuPont REVULIN® Q with products containing bentazon or severe crop injury may occur.

**DO NOT** tank mix DuPont REVULIN® Q with foliar-applied organophosphate insecticides including chlorpyrifos, malathion, parathion, etc, as severe crop injury may occur. To avoid crop injury or antagonism, apply these products at least seven days before or 3 days after the application of DuPont REVULIN® Q.

**DO NOT** apply DuPont REVULIN® Q within 45 days of crop emergence where the organophosphate insecticide, terbufos was applied since crop injury may occur. Applications made to corn previously treated with chlorpyrifos or other similar organophosphate insecticides may result in unacceptable crop injury. Any crop injury or yield loss resulting from these applications are the responsibility of the grower.

**DO NOT** make a late application of DuPont REVULIN® Q to field corn grown for grain or silage, that is taller than 30 inches or that exhibits 8 or more collars (V8), whichever is more restrictive.

**DO NOT** apply to yellow popcorn or seed corn that is taller than 20 inches or that exhibits more than 5 leaf-collars (V5), whichever is more restrictive.

**DO NOT** apply DuPont REVULIN® Q to sweet corn taller than 18 inches or which exhibits 6 or more leaf collars (V6).

**DO NOT** apply DuPont REVULIN® Q to any white popcorn inbred, white popcorn hybrid, or ornamental (Indian) corn.

**DO NOT** include a nitrogen-based adjuvant when making postemergence applications of DuPont REVULIN® Q to yellow popcorn or sweet corn.

**DO NOT** apply DuPont REVULIN® Q to corn that exhibits herbicide injury from previous applications made to the current or preceding crop.

**DO NOT** use liquid nitrogen fertilizer as the total carrier solution for postemergence applications. Injury or loss of desirable trees or vegetation may result from failure to observe the following:

- **DO NOT** apply DuPont REVULIN® 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 contract with their roots.
- **DO NOT** use on lawns, walks, driveways, tennis courts. Prevent drift of spray to desirable plants.
- **DO NOT** contaminate any body of water.

**DO NOT** graze or feed forage, grain or fodder (stove) from treated areas to livestock within 45 days after a DuPont REVULIN® Q application.

**DO NOT** harvest forage or stover within 45 days after a DuPont REVULIN® Q application.

**DO NOT** harvest grain within 70 days after a DuPont REVULIN® Q application.

**DO NOT** use aerial applications to apply DuPont REVULIN® Q unless specified otherwise under the specific crop section on the label.

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

This product contains 0.036 pounds of the safener isoxadifen-ethyl per pound of product. Applying the maximum application rate of DuPont REVULIN® Q at 4 ounces (0.036 lb nicosulfuron and 0.092 lb mesotrione) per acre will deliver 0.01 pounds of isoxadifen-ethyl per acre. When tank mixing for applications to field corn, **DO NOT** apply more than a total of 0.17 pounds of isoxadifen-ethyl per acre per crop growing season.

**DO NOT** apply where/when conditions could favor runoff.

## **PRECAUTIONS**

DuPont REVULIN® Q herbicide 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. DuPont REVULIN® Q may be applied to corn previously treated with "Fortress" 5G, "SmartChoice"5G, "Aztec"4.67% G, "Aztec" 2.1G or "Force"3G," "Force" CS or "Force" 6.5G insecticides, or other non-organophosphate soil insecticides regardless of soil type.

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

Prevent drift or spray onto desirable plants.

Thoroughly clean application equipment immediately after use (See Sprayer Cleanup section of this label).

## WEED RESISTANCE MANAGEMENT

DuPont REVULIN® Q, which contains the active ingredients nicosulfuron and mesotrione, is both a Group 2 and a Group 27 herbicide based on the mode of action classification system of the Weed Science Society of America.

Proactively implementing diversified weed control strategies to minimize selection for weed populations resistant to one or more herbicides is a best practice. A diversified weed management program may include the use of multiple herbicides with different sites of action and overlapping weed spectrum with or without tillage operations and/or other cultural practices. Research has demonstrated that using the labeled rate and directions for use is important to delay the selection for resistance.

The continued effectiveness of this product depends on the successful implementation of a weed resistance management program.

To aid in the prevention of developing weeds resistant to this product, users should:

 Scout fields before application to ensure herbicides and rates will be appropriate for the weed species and weed sizes present.

- Start with a clean field, using either a burndown herbicide application or tillage.
- Control weeds early when they are relatively small (less than 4 inches).
- Apply full rates of DuPont REVULIN® Q herbicide for the most difficult to control weed in the field at the specified time (correct weed size) to minimize weed escapes.
- Scout fields after application to detect weed escapes or shifts in control of weed species.
- Control weed escapes before they reproduce by seed or proliferate vegetatively.
- Report any incidence of non-performance of this product against a particular weed to your DuPont representative, local retailer, or county extension agent.
- Contact your DuPont representative, crop advisor, or extension agent to find out if suspected
  resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds
  have been reported, use the application rates of this product specified for your local conditions. Tank
  mix products so that there are multiple effective sites of actions for each target weed.
- If resistance is suspected, treat weed escapes with an herbicide having a site of action other than Group 2 or 27 and/or use nonchemical methods to remove escapes, as practical, with the goal of preventing further seed production.
- Suspected herbicide-resistant weeds may be identified by these indicators:
  - Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
  - o A spreading patch of non-controlled plants of a particular weed species; and
  - Surviving plants mixed with controlled individuals of the same species.

Additionally, users should follow as many of the following herbicide resistance management practices as is practical:

- Use a broad spectrum soil-applied herbicide with other sites of action as a foundation in a weed control program.
- Utilize sequential applications of herbicides with alternative sites of action.
- Rotate the use of this product with non-Group 2 or 27 herbicides.
- Avoid making more than two applications of DuPont REVULIN® Q and any other Group 2 or 27
  herbicides within a single growing season unless mixed with an herbicide with a different site of action
  with an overlapping spectrum for the difficult- to-control weeds.
- Incorporate non-chemical weed control practices, including mechanical cultivation, crop rotation, cover crops and weed-free crop seeds, as part of an integrated weed control program.
- Use good agronomic principles that enhance crop development and crop competitiveness.
- Thoroughly clean plant residues from equipment before leaving fields suspected to contain resistant weeds.
- Manage weeds in and around fields, during and after harvest to reduce weed seed production.

## 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.

## MANDATORY SPRAY DRIFT MANAGEMENT

#### **Ground Boom Applications:**

Apply with the nozzle height recommended by the manufacturer, but no more than 3 feet above the
ground or crop canopy unless making a rangeland application, in which case applicators may apply
with a nozzle height no more than 4 feet above the ground.

- For applications prior to the emergence of crops and target weeds, applicators are required to use a Coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a Medium or coarser droplet size (ASABE S572.1).
- DO NOT apply when wind speeds exceed 10 miles per hour at the application site.
- DO NOT apply during temperature inversions.

#### **Aerial Applications:**

- **DO NOT** release spray at a height greater than 10 feet above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a Coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a Medium or coarser droplet size (ASABE S572.1).
- The boom length must not exceed 65% of the wingspan for airplanes or 75% of the rotor blade diameter for helicopters.
- Applicators must use one-half swath displacement upwind at the downwind edge of the field.
- Nozzles must be oriented so the spray is directed toward the back of the aircraft.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- DO NOT apply during temperature inversions.

## **Boom-less Ground Applications:**

- Applicators are required to use a Medium or coarser droplet size (ASABE S572.1) for all applications.
- DO NOT apply when wind speeds exceed 10 miles per hour at the application site.
- DO NOT apply during temperature inversions.

#### SPRAY DRIFT MANAGEMENT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.

BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

## **IMPORTANCE OF DROPLET SIZE**

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

## **Controlling Droplet Size – Ground Boom**

- **Volume** Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- **Pressure** Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- **Spray Nozzle** Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

#### **Controlling Droplet Size – Aircraft**

 Adjust Nozzles - Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

#### **BOOM HEIGHT - Ground Boom**

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage.

For ground equipment, the boom should remain level with the crop and have minimal bounce.

#### **RELEASE HEIGHT – Aircraft**

Higher release heights increase the potential for spray drift. When applying aerially to crops, **DO NOT** release spray at a height greater than 10 ft above the crop canopy, unless a greater application height is necessary for pilot safety.

#### **Boom-less Ground Applications:**

Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

## **Handheld Technology Applications:**

Take precautions to minimize spray drift.

#### SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

#### **TEMPERATURE AND HUMIDITY**

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

#### **TEMPERATURE INVERSIONS**

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or 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. Avoid applications during temperature inversions.

#### WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.

Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

#### **DRIFT CONTROL ADDITIVES**

Using product compatible drift control additives can reduce drift potential. When a drift control additive is used, read and carefully observe cautionary statements and all other information on the additive's label. If using an additive that increases viscosity, ensure that the nozzles and other application equipment will function properly with a viscous spray solution. Preferred drift control additives have been certified by the Chemical Producers and Distributors Association (CPDA).

#### APPLICATION INFORMATION

#### Rate Summary for DUPONT REVULIN® Q Herbicide

Rate of DuPont REVULIN® Q	Pounds of Active Ingredient Nicosulfuorn	Pounds of Active Ingredient Mesotrione
3.4 oz	0.031	0.078
4 oz	0.036	0.092

## **Application Rate**

Apply DuPont REVULIN® Q at 3.4 - 4.0 ounces per acre as a postemergence broadcast application.

DuPont REVULIN® Q is rainfast in 4 hours.

## Field Corn Grown for Grain or, Silage - Postemergence

## **Timing to Crop**

DuPont REVULIN® Q may be broadcast to corn up to 20 inches tall or that is exhibiting up to and including 6 leaf collars (V6), whichever is more restrictive.

While DuPont REVULIN® 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 DuPont REVULIN® Q made after weed emergence will provide contact control of labeled weeds as well as residual control of later emerging weeds.

#### Late Applications for field corn grown for grain or silage

DuPont REVULIN® Q may be applied to field corn for the control of escaped weeds, or as a directed postemergence application on corn that is taller than 20 inches or which has more than 6 collars (V6), whichever occurs first.

For corn 20 inches to 30 inches tall, apply DuPont REVULIN® Q with drop nozzles only and avoid spraying into the whorl of cornstalks.

**DO NOT** apply to corn that is taller than 30 inches or that exhibits 8 or more collars (V8), whichever is more restrictive.

**DO NOT** feed or harvest forage or stover within 45 days after application.

**DO NOT** harvest grain within 70 days after application.

Applications made to weeds larger than those listed on this label may vary from complete control to suppression. Level of control will depend on the weed species, stage of growth, and environmental conditions.

Due to the nature of late applications, choices must be made between the risks that arise from applications made beyond the proper time for DuPont REVULIN® Q use, and the effects of season long weed competition and/or harvest complications.

Applications to weeds that exceed the labeled sizes can result in reduced control. This incomplete control may reduce corn yield.

Temporary crop response (transient bleaching) from postemergence applications to field corn may occur under extreme weather conditions or when the crop is suffering from stress. Field corn quickly outgrows these effects and develops normally.

## Field Corn Grown for Seed, Yellow Popcorn and Sweet Corn - Postemergence

Not all seed corn inbreds, popcorn or sweet corn hybrids have been tested, nor does DuPont have access to all seed company data. Consequently, to the extent consistent with applicable to law, DuPont is not responsible for any crop injury arising from the use of DuPont REVULIN® Q on field corn growth for seed, popcorn or sweet corn.

Contact your popcorn, seed corn, or sweet corn company, Fieldman, or University Specialist about hybrid/inbred specifications before making a postemergence application of DuPont REVULIN® Q.

#### **Timing to Crop**

DuPont REVULIN® Q may be broadcast or applied with drop nozzles to yellow popcorn or field corn grown for seed that is less than 20 inches tall (free-standing) or that exhibits up to and including 5 leaf-collars (V5), whichever is more restrictive. **DO NOT** apply to corn that is taller than 20 inches or that exhibits more than 5 leaf-collars (V5), whichever is more restrictive.

Many seed companies have tested seed corn inbreds or yellow popcorn hybrids for sensitivity to DuPont REVULIN® Q and have reported excellent safety. **DO NOT** apply DuPont REVULIN® Q to any white popcorn inbred, or white popcorn hybrid or ornamental (Indian) corn.

DuPont REVULIN® Q may be applied to certain sweet corn hybrids grown for fresh markets or under contract for processing.

Applications of DuPont REVULIN® Q may be applied broadcast on sweet corn up to 12 inches tall or up to and including 5 leaf-collars (V5).

#### **Late Application for Sweet Corn**

For sweet corn 12 - 18 inches tall, apply only with drop nozzles. **DO NOT** apply to sweet corn taller than 18 inches or which exhibits 6 or more leaf collars (V6) and make only one application of DuPont REVULIN® Q per year.

Postemergence applications of DuPont REVULIN® Q may cause crop bleaching in some yellow popcorn and sweet corn hybrids. Crop bleaching is typically transitory and has no effect on final yield or quality.

**DO NOT** include nitrogen-based adjuvant, UAN, when making postemergence applications of DuPont REVULIN® Q to yellow popcorn or sweet corn.

## **Timing to Emerged Weeds**

Apply DuPont REVULIN® 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 resistant corn, glyphosate products, including ABUNDIT® Edge and Durango® DMA® may be applied with DuPont REVULIN® Q after weeds emerge but before they reach the maximum size listed on the glyphosate herbicide label.

On glufosinate resistant corn, glufosinate may be applied with DuPont REVULIN® Q after weeds emerge but before they reach the maximum size listed on the glufosinate herbicide label.

## **Sequential Application - Preemergence**

DuPont REVULIN® Q may be used as a sequential application in a planned postemergence weed control program in corn following a preemergence herbicide.

Apply preemergence products including ALLUVEX®, BASIS® Blend, CINCH® ATZ, CINCH® ATZ Lite, FulTime® NXT, Keystone® NXT, Keystone® LA NXT, INSTIGATE®, DuPont™ LEADOFF®, PREQUEL®, Resicore®, RESOLVE® Q herbicides. Refer to the preemergence grass herbicide label for use restrictions, application information, rotational crop guidelines, and cautionary statements prior to applying DuPont REVULIN® Q. Follow the most restrictive product labeling.

DO NOT apply DuPont REVULIN® Q to corn that exhibits herbicide injury from previous applications

made to the current or preceding crop.

## **Spray Adjuvants**

### Field Corn Grown for Grain, Silage or Seed

For control of emerged weeds, applications of DuPont REVULIN® Q must include a crop oil concentrate or a high surfactant oil concentrate (HSOC).

- The use of a nonionic surfactant (NIS) instead of a COC or HSOC is allowed, but the weed control achieved with COC or HSOC is consistently better than NIS.
- The use of methylated seed oil (MSO) adjuvants or MSO blend adjuvants may cause severe crop injury to occur. MSO adjuvants are not advised.

In addition to COC or HSOC, always add spray grade UAN (e.g., 28-0-0) to the spray solution or AMS, except if precluded elsewhere on this label.

When applied in tank mix combination with a glyphosate that contains a built-in adjuvant including ABUNDIT® Edge, ensure the total adjuvant load is equivalent to the specifications on this label. Select adjuvants authorized for use with both products.

## **Yellow Popcorn or Sweet Corn**

For control of emerged weeds, applications of DuPont REVULIN® Q must include a crop oil concentrate (COC) or nonionic surfactant (NIS). A COC will increase the level of weed control achieved, especially under dry growing conditions, but the risk of crop injury is increased under lush growing conditions.

In addition to COC or NIS add AMS to the spray solution, except if precluded elsewhere on this label.

**DO NOT** add UAN when making postemergence applications of DuPont REVULIN® Q to yellow popcorn or sweet corn, as severe crop injury may occur. In yellow popcorn or sweet corn, weeds less than five inches needs to be targeted, and the addition of atrazine is advised wherever rotational or local atrazine restrictions will allow.

When applied in tank mix combination with a glyphosate product that contains a built-in adjuvant including ABUNDIT® Edge, ensure the total adjuvant load is equivalent to the specifications on this label. Select adjuvants authorized for use with both products.

## 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) oil with at least 15% surfactant emulsifiers.

## **High Surfactant Oil Concentrate (HSOC)**

Apply at 0.5% (2 quarts per 100 gallons spray solution)

#### **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) including 28%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.

Consult local DuPont fact sheets, technical bulletins or supplemental labels prior to using other adjuvant systems. Products must contain only EPA-exempt ingredients.

**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 DuPont REVULIN® Q.

## Weeds Controlled/Suppressed

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

Table 1. Weeds Controlled with Post Emergence Applications of DuPont REVULIN® Q

Common Name	3.4 oz/A Weeds < 4 Inches Tall	3.4 oz/A + atrazine Weeds <5 Inches Tall	4.0 oz/A + atrazine Weeds <5 Inches Tall	4.0 oz/A + atrazine Weeds 5-10 Inches Tall
Amaranth, Palmer*	PC <sup>3</sup>	C <sup>2,3</sup>	С	С
Amaranth, Powell	С	С	С	С
Amaranth, spiny	С	С	С	С
Atriplex	С	С	С	С
Barnyardgrass	С	С	С	PC
Broadleaf signalgrass	C¹	C¹	C¹	PC
Buckwheat, wild	PC	PC	PC	PC
Buffalobur	С	С	С	С
Burcucumber	C¹	С	С	С
Carpetweed	С	С	С	С
Carrot, wild	С	С	С	С
Chickweed, common	С	С	С	С
Cocklebur, common	С	С	С	С
Crabgrass, large	C <sup>1</sup>	C <sup>1</sup>	C <sup>1</sup>	PC

Dandelion	C <sup>5</sup>	C <sup>5</sup>	C <sup>5</sup>	C <sup>5</sup>
Dock, curly	PC	PC	PC	PC
Foxtails (bristly, giant, green, yellow)	С	$C^4$	C <sup>4</sup>	PC
Galinsoga	С	С	С	С
Hemp	С	С	С	С
Horse nettle	С	С	С	С
Itchgrass	С	С	С	PC
Jimsonweed	С	С	С	С
Johnsongrass, seedling	C <sup>7</sup>	C <sup>7</sup>	C <sup>7</sup>	C <sup>7</sup>
Johnsongrass, rhizome	C <sup>8</sup>	C <sup>8</sup>	C <sub>8</sub>	C <sup>8</sup>
Knotweed, prostrate	PC	PC	PC	PC
Kochia*	C¹	C <sup>1</sup>	C <sup>2</sup>	PC
Lambsquarters, Common	С	С	С	С
Mallow, Venice	С	С	С	PC
Marestail (horseweed)*	PC	С	С	PC
Morningglogy, entireleaf; ivyleaf; pitted	C¹	C¹	С	PC
Mustard, wild	С	С	С	С
Nightshade, black	С	С	С	С
Nightshade eastern black	С	С	С	С
Nightshade, hairy	С	С	С	С
Nutsedge, yellow	PC	PC	PC	PC
Panicum, Texas; browntop	C <sup>3</sup>	C <sup>3</sup>	C <sup>3</sup>	PC
Panicum, fall	С	C <sup>4</sup>	C <sup>4</sup>	PC
Pigweed, redroot, smooth, tumble	С	С	С	С
Pokeweed, common	PC	PC	PC	PC
Potatoes, volunteer	С	С	С	С
Pusley, Florida	C¹	C¹	C <sup>1</sup>	PC
Quackgrass	C <sub>e</sub>	$C_{e}$	$C_{e}$	C <sub>6</sub>
Ragweed, common	C <sup>3</sup>	C <sup>3</sup>	С	С
Ragweed, giant	C <sup>3</sup>	C <sup>3</sup>	С	С
Ryegrass*, Italian, perennial	C⁵	C <sup>5</sup>	C <sup>5</sup>	C <sup>5</sup>

Sandbur, field; longspine	C <sub>3</sub>	C <sub>3</sub>	C <sup>3</sup>	PC
Sesbania, hemp	С	С	С	С
Shattercane	C <sup>7</sup>	C <sup>7</sup>	C <sup>7</sup>	C <sup>7</sup>
Sida, prickly (teaweed)	$C_3$	$\mathbb{C}_3$	$C_3$	PC
Smartweed, ladysthumb, pale Pennsylvania	С	С	С	С
Sorghum album	C <sup>7</sup>	C <sup>7</sup>	C <sup>7</sup>	C <sup>7</sup>
Sunflower, common	С	С	С	С
Thistle, Canada	PC	PC	С	PC
Timothy	C⁵	C <sup>5</sup>	C <sup>5</sup>	C <sup>5</sup>
Velvetleaf	С	С	С	С
Volunteer cereals	C <sup>5</sup>	C <sup>5</sup>	C <sup>5</sup>	C <sup>5</sup>
Waterhemp*	$PC^3$	C <sup>2,3</sup>	С	С
Wild oats	С	C <sup>4</sup>	C <sup>4</sup>	PC
Wild proso millet	С	C <sup>4</sup>	C <sup>4</sup>	PC
Wirestem muhly	C <sup>5</sup>	C <sup>5</sup>	C <sup>5</sup>	C <sup>5</sup>
Witchgrass	C <sup>5</sup>	C <sup>5</sup>	C <sup>5</sup>	C <sup>5</sup>
Woolly cupgrass	С	C <sup>4</sup>	C <sup>4</sup>	PC

<sup>&</sup>lt;sup>1</sup> Apply before weed exceeds 2 inches in height

#### **TANK MIXTURES**

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

## DuPont REVULIN® Q Applied 3.4 to 4.0 oz/acre with Glyphosate

Glyphosate may be tank mixed with post emerge applications of DuPont REVULIN® Q when made to glyphosate resistant corn hybrids. Refer to the Spray Adjuvants section for additional information on proper adjuvant selection. When used in a tank mixture with glyphosate herbicide, DuPont REVULIN® Q will deliver improved burndown and/or residual activity on the following weeds.

Alfalfa, volunteer Canada thistle Quackgrass Ryegrass, Italian

<sup>&</sup>lt;sup>2</sup> For control add atrazine at 1 pt. (0.5 lb.) per acre

<sup>&</sup>lt;sup>3</sup> Apply before weed exceeds 3 inches in height

<sup>&</sup>lt;sup>4</sup> Apply before weed exceeds 4 inches in height

<sup>&</sup>lt;sup>5</sup> Apply before weed exceeds 6 inches in height

<sup>&</sup>lt;sup>6</sup> Apply before weed exceeds 10 inches in height

<sup>&</sup>lt;sup>7</sup> Apply before weed exceeds 12 inches in height

<sup>&</sup>lt;sup>8</sup> Apply before weed exceeds 18 inches in height

<sup>\*</sup> ALS resistant biotypes are known to exist.

C = Control PC = Partial Control NC = No Control

Chamomile, false
Crabgrass
Filaree, redstem
Henbit
Johnsongrass, seedling
Millet, Wild Proso
Morningglory, ivyleaf
Mustard (birdsrape, black, wild)
Purslane, common

Sandbur (field, longspine) Shepherd's purse Signalgrass, broadleaf Stinkgrass Waterhemp (smooth, tall) Wild buckwheat Wild oat Yellow Nutsedge

## DuPont REVULIN® Q Applied 3.4 to 4.0 oz/acre with Glufosinate

REVULIN® Q may be tank mixed with glufosinate herbicide if applications are made to glufosinate resistant corn hybrids. Consult with your seed supplier to confirm the corn hybrid is glufosinate resistant before applying any herbicide containing glufosinate.

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

DuPont REVULIN® Q may be tank mixed with other postemergence labeled grass and broadleaf herbicides including atrazine, dicamba, Cinch® ATZ, Cinch® ATZ Lite, FulTime® NXT, Keystone® NXT, Keystone® LA NXT, or Resicore® 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 DuPont REVULIN® Q label.

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

As EC formulations, acetochlor or metolachlor formulations including CINCH® or Surpass® NXT can act like an adjuvant in certain combinations and thus increase the risk of crop injury. If either of these tank mixtures are used, leave the crop oil concentrate (COC) out of the adjuvant mix.

DuPont REVULIN® Q may be tank mixed with atrazine formulations including, CINCH® ATZ, CINCH® ATZ Lite, FulTime® NXT, Keystone® NXT, Keystone® LA NXT or products that contain the same active ingredients, but special attention must be paid to adjuvant selection and/or application method. If any of these tank mixtures are used leave the urea ammonium nitrate (UAN) 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, also leave out the crop oil concentrate (COC) and replace it with a nonionic surfactant (NIS).

The control of emerged weeds may be reduced 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.

The crop safety of all possible tank mixture combinations with DuPont REVULIN® Q which may include physically compatible pesticides, fertilizers, adjuvants and/or additives has not been tested.

To the extent consistent with applicable law, DuPont will not be responsible for any crop injury arising from the use of a tank mixture that is not specifically described on the DuPont REVULIN® Q product labeling or in other DuPont product use instruction.

Always follow the tank mix instructions of the product label that is most restrictive.

## **Tank Mix Compatibility Testing**

Perform a jar test prior to tank mixing to ensure compatibility of DuPont REVULIN® 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 1/2 hour. If the mixture balls-ups, forms flakes, sludge, gel, oily film or layers, or other precipitates, it is not a compatible tank mix combination.

## **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 DuPont REVULIN® Q
- 3. Continue agitation until the DuPont REVULIN® 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 Application**

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 GPA for light, scattered stands of weeds.

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

Ensure that all in-line strainer and nozzle screens in the sprayer are 50-mesh or coarser.

Maintain adequate agitation at all times, including momentary stops.

## **Aerial Application**

DuPont REVULIN® Q may be applied aerially for postemergence weed control in the following states:

Alabama, Arkansas, Colorado, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, and Texas.

For aerial application only use nozzles producing coarse-ultra coarse droplets.

Applications must be made in a minimum of 2 gallons of water per acre.

## **ROTATIONAL CROP GUIDELINES**

Rotational crops vary in their crop response to low concentrations of DuPont REVULIN® Q remaining in

the soil. The amount of DuPont REVULIN® 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 DuPont REVULIN® Q is used in combination with other products, always follow the most restrictive rotational crop requirements.

The following rotational intervals must be observed when using DuPont REVULIN® Q:

#### 3.4 TO 4.0 OZ USE RATE PER ACRE PER YEAR

Rotational Crop	Interval (months)
Corn*	Anytime
Cereals, Winter	4
Cereals, Spring	8
Alfalfa <sup>1,2</sup>	10
Canola <sup>2</sup>	10
Cotton	10
Flax <sup>1</sup>	10
Peanuts <sup>4</sup>	10
Peas and Snap Beans <sup>5</sup>	10
Potatoes <sup>2</sup>	10
Rice <sup>4</sup>	10
Sorghum <sup>3</sup>	10
Soybeans	10
Sunflower	10
Sweet Potatoes/Yams <sup>4</sup>	10
Tobacco <sup>4</sup>	10
Crops not listed	18

- \* Corn is defined to include field corn grown for grain, seed or silage, popcorn, and sweet corn. Sweet corn varieties "Merit", "Carnival" and "Sweet Success" the minimum interval is 15 months.
- 1. On sprinkler irrigated fields in Idaho, Utah, and Northern Nevada it is best to use deep fall tillage including plowing prior to planting alfalfa. Product degradation may be less on furrow irrigated soils and may result in some crop injury.
- 2. Extend rotation intervals 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.
- 3. With composite soil pH >7.5 extend the rotation interval to 18 months except in Texas and Oklahoma east of HWY 281, where the rotational interval is 10 months regardless of pH.
- 4. On soils with pH 6.5 or less.
- 5. Plant these rotational crops only if the following criteria below have been met. If all criteria are not met, plant peas and snap beans a minimum of 18 months following DuPont REVULIN® Q application.
- A minimum of 20" of rainfall plus irrigation has been received between application and planting of the rotational crop.
- Soil pH is 6.0 or greater.
- Application of DuPont REVULIN® Q applied no later than June 30 the year preceding rotational crop planting.
- No other HPPD herbicides were applied the year prior to planting peas and snap beans. **DO NOT** plant peas or snap beans on sand, sandy loam or loamy sands in Minnesota or Wisconsin.
- Planting unspecified rotational crops, or those rotational crops that are specified at shorter than listed intervals may result in injury to the rotational crop.

#### **Cover Crops**

Use of cover crops as a means of soil improvement, erosion control, weed and/or insect suppression, etc., following harvest of corn in the fall is increasing. Planting of cover crops in fields treated with DuPont REVULIN® Q is allowed as long as these cover crops are not grazed by livestock nor harvested for food. Cover crops are to be tilled under or chemically controlled with burndown herbicides in the spring. Many cover crops can be planted within 90-120 days after application of DuPont REVULIN® Q. However, all potential cover crops have not been evaluated for sensitivity to REVULIN® Q and significant injury may occur. Prior to seeding a cover crop complete a successful field/ home bioassay to provide an indication of the level of sensitivity to the prior DuPont REVULIN® Q application. Refer to the "Field/Small Scale Bioassay" section. If used in tank mixtures with other herbicides, always follow the most restrictive label.

#### Field/Small Scale Bioassay

A field/ small scale bioassay must be completed before rotating to a cover crop other than those specified in the "Rotational Crop Guidelines" section of this label. To conduct an effective field bioassay, grow strips of the crop(s) you intend to grow the following season in a field previously treated with DuPont REVULIN® Q. The test strip must be placed in a controlled area and must include low areas and knolls and include variations in soil such as type and pH. Crop response to the bioassay will determine if the crop(s) grown in the test strips can be grown safely in the areas previously treated with DuPont REVULIN® Q.

For an effective small-scale bioassay, collect uniform samples of all soil types from the DuPont REVULIN® Q treated field (see example above for types of soil in the sample) and place the soil into a sturdy container. Plant the desired cover crop into the soil, apply water and place the container in a warm, sunny area to allow germination and growth of the crop. Monitor growth of the cover crop over a three to four week period. If the cover crop emerges and grows normally, the risk to establish and grow the cover crop in the field treated with DuPont REVULIN® Q must be acceptable.

## SPRAYER PREPARATION/CLEANUP

It is important that spray equipment is clean and free of previous pesticide deposits before using DuPont REVULIN® Q, and then properly cleaned out following application. Clean all application equipment before applying DuPont REVULIN® 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 DuPont REVULIN® Q, thoroughly clean all mix and spray equipment to avoid subsequent crop injury.

When cleaning spray equipment before applying DuPont REVULIN® 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 DuPont REVULIN<sup>®</sup> 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. Flush the tank, hoses, and boom with clean water for a minimum of 5 min.
- 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, screens and the end caps of sprayer booms 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 advised in the bulletin "Sulfonylurea Herbicides. A Guide to Equipment Cleanout" may be used.

USEPA REGISTERED PRODUCTS MENTIONED IN THIS LABEL FOR USE IN TANK MIXTURES OR OTHER REASONS			
PRODUCT BRAND NAME	ACTIVE INGREDIENT(S)	EPA REGISTRATION NUMBER	
Cinch® ATZ Lite Herbicide	atrazine + S-metolachlor + atrazine related compounds	352-623	
Cinch® ATZ Herbicide	atrazine + S-metolachlor + atrazine related compounds	352-624	
Cinch® Herbicide	S-metolachlor	352-625	
Resolve® Q Herbicide	rimsulfuron + thifensulfuron methyl	352-777	
Prequel® Herbicide	isoxaflutole + rimsulfuron	352-779	
Leadoff® Herbicide	rimsulfuron + thifensulfuron methyl	352-853	
Basis® Blend Herbicide	rimsulfuron + thifensulfuron methyl	352-854	
Instigate® Herbicide	mesotrione + rimsulfuron	352-873	
FulTime® NXT	acetochlor + atrazine	62719-668	
Keystone® NXT Herbicide	acetochlor +atrazine	62719-671	
Keystone® LA NXT Herbicide	acetochlor	62719-670	
Surpass® NXT Herbicide	acetochlor	62719-672	
Abundit® Edge Herbicide	glyphosate	352-922	
Durango® DMA® Herbicide	glyphosate	62719-559	
Resicore® Herbicide	acetochlor + mesotrione + clopyralid	62719-693	
Force® 3G Insecticide	tefluthrin	100-1075	
Force® CS Insecticide	tefluthrin	100-1253	
Warrior® II Insecticide	lambda-cyhalothrin	100-1295	
Force® 6.5G Insecticide	tefluthrin	100-1625	
Counter® 20G Insecticide	terbufos	5481-562	
Aztec® 4.67% Granular Insecticide	tebupirimphos + cyfluthrin	5481-9028	
Aztec® 2.1G Insecticide	tebupirimphos + cyfluthrin	5481-9030	
Fortress® 5G Insecticide	Chlorethoxyfos	5481-493	
Smartchoice <sup>TM</sup> 5G Insecticide	bifenthrin + chlorethoxyfos	5481-561	
Asana® XL Insecticide	esfenvalerate	59639-209	

## 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 REVULIN® Q herbicide containing nicosulfuron and mesotrione 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 REVULIN® Q containing nicosulfuron 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 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, call at 1-800-992-5994, day or night.

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EPA accepted 06/14/17