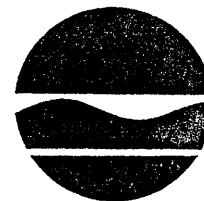


New York State Department of Environmental Conservation

Division of Solid & Hazardous Materials
50 Wolf Road, Albany, New York 12233-7250
Phone 518-457-6934 FAX 518-457-0629

Rimsulfuron

*Rimsulfuron
(matrix)*



John P. Cahill
Commissioner

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

AUG 15 1997

*received
8/15/97*

Ms. Donna M. Factor
State Registration Technician
E. I. DuPont De Nemours
P.O. Box 80038 (WM5-125)
Wilmington, DE 19880-0038

Dear Ms. Factor:

Re: Registration of the New Active Ingredient-Rimsulfuron Contained in the Pesticide Products Matrix® Herbicide (EPA Reg. No. 352-556), Basis® Herbicide (EPA Reg. No. 352-571) and Basis Gold® Herbicide (EPA Reg. No. 352-585)

DuPont Agricultural Products submitted an application and supporting documentation on March 26, 1997, for the registration of the new active ingredient, rimsulfuron, contained in the subject pesticide products.

Matrix® is a sulfonylurea herbicide for use to control weeds on potatoes. It is formulated as a dry flowable, with 25% by weight rimsulfuron as the active ingredient. Matrix® is applied at a rate of up to 1½ oz. of formulated product per acre, which equates to a single application of 10.65 grams (g) active ingredient per acre. A second application is allowed as long as the total volume of product applied did not exceed 2 ½ oz. of formulated product per acre per season.

Basis® is a sulfonylurea product for use on field corn. It is formulated as a water dispersible granule, with 50% rimsulfuron by weight and 25% thifensulfuron by weight as the active ingredients. Basis® is applied at a rate of 1/3 oz. of formulated product per acre, which equates to 4.7 g of rimsulfuron and 2.3 g of thifensulfuron per acre. Only one application of Basis® is allowed per season. Thifensulfuron has previously been registered in New York State as the active ingredient in the herbicides Pinnacle®, Harmony® and Harmony Extra®.

Basis Gold® is a mixture of two sulfonylurea herbicides and atrazine for use on field corn. It is formulated in water-soluble packets with 91.12% atrazine; 1.34% rimsulfuron, and 1.34% nicosulfuron. Basis Gold® is applied at a rate of 14 oz. of formulated product per acre which equates to 5.3 g rimsulfuron per acre, 5.3 g nicosulfuron per acre, 345 g atrazine per acre. Only one application of Basis Gold® is allowed per season. Nicosulfuron is registered for use in New York State as the active ingredient in the corn herbicide Accent®. Basis Gold® is a federally restricted use pesticide due to atrazine's potential to contaminate groundwater and surface water.

The Department has completed the review of the subject products. The findings and conclusions are discussed below, broken down by ecological, human health and groundwater impacts.

Ecological Effects:

The Department assessed only the risks associated with the labeled use of rimsulfuron and thifensulfuron because the concentrations of nicosulfuron and atrazine that would be applied with Basis Gold® are less than the concentrations of these active ingredients that are applied using currently registered products.

Pesticide screening system models were run for both rimsulfuron and thifensulfuron. The model showed that the general character of these compounds is consistent with other sulfonylurea herbicides; that is, they are not very toxic to mammals, birds, fish, or aquatic vertebrates; but extremely toxic to aquatic vegetation. Because they are applied in very small concentrations, it is readily apparent that neither rimsulfuron nor thifensulfuron will present any risk to birds or mammals following terrestrial application and exposure. The same is true for fish and aquatic invertebrates.

However, both compounds have the potential to be acutely toxic to Lemna gibba. Rimsulfuron runoff from a ten-acre treated field that contained one percent, three percent, or five percent of the total applied rimsulfuron, exceeded the acute No Observed Effects Concentration (NOEC) for Lemna gibba for one-, three-, and six-foot ponds. For thifensulfuron, the Lemna gibba acute NOEC was exceeded only in a one-foot deep pond when runoff from a ten-acre, treated field contained five percent of the total applied thifensulfuron. Chronic thresholds were not triggered for either rimsulfuron or thifensulfuron because of their rapid degradation rate in water.

While modeling indicates that concentrations of rimsulfuron have the potential to be harmful to nontarget aquatic macrophytes, rimsulfuron is not likely to be present in the water column long enough to produce a toxic effect. The original 14-day Lemna gibba EC₅₀ study demonstrated that statistically significant differences in growth or general health and appearance of the plants were not observed by day three. Since Rimsulfuron degrades rapidly in water through aerobic metabolism, with a half-life of about one and one-half to two days, it is unlikely that any harm to aquatic macrophytes would occur. The extremely low application rate of thifensulfuron is adequate to prevent toxicity to aquatic macrophytes.

It should be noted that both rimsulfuron and thifensulfuron have fairly rapid field dissipation rates. Only a fraction of the originally applied active ingredients would be available for movement in runoff if rain events were to occur more than a week after the original application.

Matrix®, Basis®, and Basis Gold® Herbicides do not present any significant risk to terrestrial or aquatic ecosystems of New York State when applied in accordance with the federal label because they are not very toxic to mammals, birds, fish or aquatic vertebrates and they will not be toxic to aquatic vegetation because of their rapid degradation in water.

Human Health Effects:

Technical rimsulfuron and the Matrix® and Basis® formulated products are not very toxic on an acute basis to laboratory animals via oral, dermal and inhalation exposure, are not very irritating to animal eyes and skin and are not dermal sensitizers. The United States Environmental Protection Agency (USEPA) waived acute toxicity testing for Basis Gold® because the acute testing was already done for federal registration of its constituent ingredients. The USEPA assigned general acute toxicity categories for Basis Gold® based on the categories assigned for the two individual ingredients that make up Basis Gold®.

The USEPA Office of Pesticide Programs (OPP) derived an oral reference dose of 0.016 mg/kg/day for rimsulfuron based on the NOEL from the chronic dog study (1.6 mg/kg/day) and an uncertainty factor of 100. This value has not yet been adopted by the USEPA's Integrated Risk Information System.

No oncogenic effects were reported in either the chronic rat or mouse studies. The USEPA OPP's Reference Dose Tracking Report (dated February 25, 1997) states that the USEPA's Reference Dose Peer Review Committee classified rimsulfuron as a Group E carcinogen (evidence of non-carcinogenicity for humans).

No developmental effects were reported in offspring when pregnant rats and rabbits were administered technical rimsulfuron during organogenesis.

There are no chemical-specific federal or state drinking water/groundwater standards for **rimsulfuron, nicosulfuron or thifensulfuron-methyl**. Based on their chemical structures, these compounds fall under the **50 microgram per liter** general New York State drinking water standard for "unspecified organic contaminants." The New York State Drinking Water standard (specific maximum contaminant level) for **atrazine is 3 micrograms per liter** (10 NYCRR Part 5 - Public Water Systems).

DuPont conducted an exposure assessment using the Pesticide Handlers Exposure Database and assuming a dry flowable formulation containing rimsulfuron is applied by a ground boom sprayer at a rate of 17.6 g rimsulfuron per acre and 200 acres treated per day. Exposure for mixer/loaders wearing a long-sleeved shirt, long pants and gloves was determined to be 0.0105 mg/kg/day. Exposure for applicators wearing a long-sleeved shirt and long pants and not wearing gloves was less than for mixer/loaders and was determined to be 0.002 mg/kg/day. These values are about 600 and 3,100 times less,

Rimsulfuron projects a cyclical pattern that repeats each year and ranges from about 0 to 0.7 ppb. The first degradate, IN9041, has a similar cyclical pattern, ranging from 1 to 3.5 ppb. The second degradate, IN9042, ranges from 1.5 to 5 ppb. These compounds fall under the 50 ppb general New York State Drinking Water Standard for "unspecified organic contaminants." Therefore, the labeled use of these products are not expected to cause a problem in New York State groundwater.

Registration Action:

After consideration of all reviews, the Department accepts for **conditional registration** in New York State the new active ingredient, rimsulfuron, contained in the pesticide products Matrix® Herbicide (EPA Reg. No. 352-556), Basis® Herbicide (EPA Reg. No. 352-571), and Basis Gold® Herbicide (EPA Reg. No. 352-585) in New York State. The condition of this registration action will be met if the E.I. DuPont de Nemours Company provides a copy of the lysimeter study (which is currently being conducted with rimsulfuron as a condition of federal registration) to the Department by December 31, 1997.

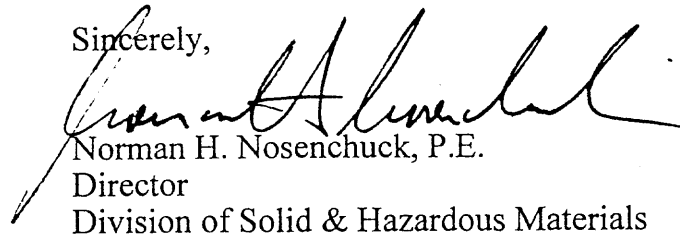
New York State has not allowed aerial applications of other similar sulfonylurea products due to their potent phytotoxicity, which could result in damage to non-target areas due to spray drift. E.I. DuPont de Nemours Company has placed the limitation "In New York State Aerial Application is not Permitted" on their federal label for Basis® and Basis Gold® to resolve this issue.

Basis Gold® as a federally "restricted use" product is being registered as a **restricted use** pesticide product in New York State. **Matrix®** and **Basis®** are registered as **general use** pesticide products in New York State.

Enclosed for your records are the stamped-accepted labels and the Certificate of Registration for the above products.

If you have any questions on this matter, please contact Maureen Serafini, Supervisor of our Pesticide Product Registration Section, at (518) 457-7446.

Sincerely,



Norman H. Nosenchuck, P.E.
Director
Division of Solid & Hazardous Materials

Enclosures

cc: w/enc. - D. Rutz/W. Smith, Cornell University
N. Rudgers/R. Mungari, NYS Dept. of Ag. & Mkts.
N. Kim/D. Luttinger, NYS Dept. of Health