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EE BRANCH REVIEW

IN 6-30-80 OUT 7-28-80

FILE OR REG. NO. _____

PETITION OR EXP. PERMIT NO. 352-EUP-105

DATE DIV. RECEIVED _____

DATE OF SUBMISSION _____

DATE SUBMISSION ACCEPTED _____

TYPE PRODUCTS (S): I, D, H, F, N, R, S Herbicide

DATE ACCESSION NO (S). _____

PRODUCT MGR. NO. Taylor (25)

PRODUCT NAME (S) DuPont DPX 4189 DF Weed Killer Dry Flowable

COMPANY NAME E. I. DuPont de Nemours and Company

SUBMISSION PURPOSE Review of proposed EUP program

in small grains (wheat & barley)

CHEMICAL & FORMULATION _____

2-Chloro-N- [(4-methoxy-6-methyl-1,3,5-triazin-2-yl)aminocarbonyl]

benzenesulfonamide ... 75%

DPX 4189 DF

100. Pesticide Label Information

100.1 Pesticide Use (From Submitted Label)

GENERAL INFORMATION

Du Pont DPX 4189 DF Weed Killer is recommended for trial use as a selective herbicide preemergence, postplant incorporated, and/or postemergence in wheat; postemergence in barley; and in reduced-tillage fallow systems for wheat or barley. It is a dry flowable product to be mixed in water and applied as a spray. Preemergence applications are to be tested for control of common ragweed, field pennycress, foxtail, knotweed, kochia, lambsquarters, pepperweed, pigweed, sunflower, tansy mustard, wild buckwheat, and wild mustard. Postplant incorporated applications are to be tested for control of blue mustard, downy brome, false flax, foxtail, Jim Hill mustard, pigweed, and Russian thistle. Postemergence applications are to be tested for control of annual bluegrass, blue mustard, false flax, fiddleneck, foxtail, Jim Hill mustard, pigweed, and white cockle. DPX 4189 DF does not control wild oats.

100.2 Formulation Information

Benzenesulfonamide	75%
Inert Ingredients	25%

100.3 Application Methods, Directions, Rates (from submitted label)

DIRECTIONS FOR TRIAL USE

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

SPRAY PREPARATION: Mix the proper amount of DPX 4189 DF into the water in the spray tank with the agitator running. Continuous agitation is required to keep the product in suspension.

EQUIPMENT - SPRAY VOLUMES: Use a tractor-mounted, fixed-boom power sprayer properly calibrated to a constant speed and rate of delivery. Avoid overlapping, and shut off spray booms while starting, turning, slowing, or stopping, or injury to the crop may result. For preemergence or postplant incorporated application, use 5 to 40 gals. spray per acre; for postemergence application, use 10 to 40 gals. per acre. Apply uniformly.

Aerial: Use 1 to 5 gals. spray per acre. Avoid overlapping of spray swath and avoid application under conditions where excessive drift may occur.

USE RATES: A range of dosage rates is suggested for each type of treatment. Use the lower rate on coarser soils (low in clay or organic matter) and the

higher rates on finer soils (high in clay or organic matter). Where preemergence or postplant incorporated treatment (wheat only) is to be followed with a postemergence application, the lower rates should provide adequate control.

BARLEY (Spring and Winter)

Make a single application of 1/8 to 1 ounce product per acre. Apply only as a postemergence treatment; do not apply preemergence or postplant incorporated as injury to the crop may result. Apply any time after crop emerges but before "boot" stage. Best results are obtained if weeds are small (less than 2 to 4" tall or across).

WHEAT (Spring and Winter)

Apply DPX 4189 DF preemergence or shallow postplant incorporated (single treatment or followed by postemergence application), or postemergence only.

Preemergence - Use 1/4 to 3/4 ounce product per acre. Apply before crop emerges.

Shallow Postplant Incorporated - Use 1/8 to 1 ounce product per acre. Apply after planting and incorporate (less than 1") with a tined weeder, rotary hoe, or other equipment designed for shallow incorporation. Minimize contact with seed or seedlings.

Postemergence - Use 1/8 to 1 ounce product per acre. Apply before "boot" stage, but do not apply within 1 month of preemergence or postplant incorporated treatment. Best results are obtained if weeds are small (less than 2 to 4" tall or across).

REDUCED-TILLAGE FALLOW - Wheat or Barley

Make a single application of 1/2 to 2 ounces product per acre to the stubble either in the fall after harvest or in early spring. Apply a contact herbicide such as Ortho^(R) Paraquat CL¹ or Roundup^(R)² if volunteer cereals, downy brome (cheatgrass), or cheat are present.

Note: Because varieties of barley and wheat vary in their resistance to weed killers, determine tolerance to DPX 4189 DF prior to extensive testing. Do not apply to wheat or barley that is stressed by a severe winter, drought, or disease, as injury to the crop may result.

Do not graze or feed forage or hay from treated areas to livestock. Because injury to crops may result, do not replant treated areas to any crop other than wheat or barley within 1 year of last application, and do not replant sugar beets or any cole crop within 2 years of last application.

¹Registered trademark of Chevron Chemical Co.

²Registered trademark of Monsanto Chemical Co.

100.4 Target Organisms
(see sec. 100.1)

100.5 Precautionary Labeling

ENVIRONMENTAL HAZARDS

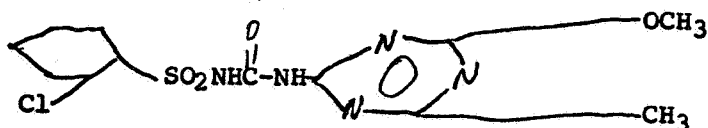
Keep out of lakes, streams, or ponds. Do not contaminate water by cleaning of equipment or disposal of wastes.

101 Physical and Chemical Properties

101.1 Chemical Name

(2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-Triazin-2-yl) Aminocarbonyl] benzenesulfonamide)

101.2 Structural Formula



101.3 Common Name

DPX 4189

- Product Name - Glean

101.4 Trade Name

Du Pont DPX 4189

101.5 Molecular Weight

357.78

101.6 Physical State

Appearance: White crystalline solid

Melting point: 174°C

Vapor pressure at 25°C: 4.6×10^{-6} mm Hg

101.7 Solubility

Water at 25°C = 125 ppm

In organic solvents at 22°C:

	wt./wt.	wt./vol.
Hexane	10ppm	-
Toluene	0.3%	0.3%
Methanol	1.8%	1.4%
Acetone	7.0%	5.7%
Methylene Chloride	7.7%	10.2%
N,N-Dimethylformamide	27.3%	27.4%
Octanol/water Ratio	13	

102 Behavior in the Environment

(The following information was taken from the registrant's report and prepared by Ecological Effects Branch.)

102.1 Soil

	K-values (Freundlich isotherm constant)	R _f vales (T L C)
Keyport Silt Loam	0.45	0.87
Flanagan Silt Loam	0.69	0.66

K-values indicate that the compound does not strongly absorb to soil when freshly applied with an excess of water. This does not mean that the compound would not absorb upon aging. T L C data for the two types of soil indicates that this compound readily migrates. Soil column absorption studies with sandy loam and silt loam show that after immediate application to the column 84 and 99% respectively could be percolated through the columns. After 30 days of aging treated soil only 37 and 48% washed through the sandy loam and silt loam columns.

DPX-4189 has a half-life in aerobic soil of about 2 months. 2-Chlorobenzenesulfonamide and 2-Chlorophenylsulfonylurea are the major and minor degradates. This compound in field soils has a half-life of one month. The major degradation products were 2-chlorobenzenesulfonamide and 2-amino-4-methoxy-6-methyl-1,3,5-triazine.

102.2 Water

Hydrolysis

	Breakdown	
pH	1 week	4 weeks
4	50%	100%
7	---	5%
9	---	5%

102.3 Microorganism

Soil Nitrifying bacteria	--	No Effect at highest rate of 1ppm
Actinomycefes, bacteria and fungi	--	No effect at 100 mg/ g

"Inhibitory concentrations of DPX-4189 for fungi were found to be in excess of 10,000 times the maximum recommended use rate."

103. Toxicological Properties

103.1 References from Toxicology Branch

The following material and/or data is from Registrants Report as Toxicology Branch did not have material available.

Study	Test Material	Results
LD ₅₀ - Rat	Tech.	5,000 mg/kg
(male)		(5,545)
(female)		(6,293)
LD ₅₀ - Rat	80WP	5,000 mg/kg
(male)		(7,699)
(female)		(7,634)

103.2 Minimum Requirements

103.2.1	Avian Acute Oral (Mallard)	5000 mg/kg	Core	Farringer
	Avian Acute Oral (Bobwhite)	5000 mg/kg	Core	Farringer
103.2.2	Avian Dietary LC ₅₀ (Mallard)	5000 ppm	Core	Farringer
	Avian Dietary LC ₅₀ (Bobwhite)	5000 ppm	Invalid	Farringer
103.2.3	Fish Acute LC ₅₀ (Bluegill)	300 ppm	Core	Farringer
	Fish Acute LC ₅₀ (Rainbow trout)	250 ppm	Core	Farringer
	Fish Acute LC ₅₀ (Fathead minnow)	300 ppm	Core	Farringer
	Fish Acute LC ₅₀ (Channel catfish)	50 ppm	Core	Farringer
103.2.4	Aquatic Invertebrate LC ₅₀ (<u>Daphnia</u>)	370 ppm	Core	Farringer

104 Hazard Assessment

From the data that is present at this time, there appears to be little to no potential hazard to non-targets and endangered species.

107 Conclusions

107.1 Classification labeling

At this time, the data and materials available would indicate that this product should be classified as "General Use."

107.2 Environmental Hazard Labeling

Proposed EUP label has sufficient precautions at this time.

107.4 Data Adequacy Conclusions

With the exceptions of the Dietary Bobwhite Quail study the rest of the studies fulfill guideline requirements.

107.5 Data Request

Ecological Effects Branch requests another dietary Bobwhite Quail study, in order to substantiate that the mortality in the previous test was an artifact of poor laboratory specimens and not a result of the toxicant.

107.7 Recommendations

Ecological Effects Branch recommends that Dupont be given the EUP permit they request providing that they in writing agree to re-run the Avian Dietary LC₅₀ on an upland game bird.

Russel T. Farringer, III

Russel T. Farringer, III
Wildlife Biologist
Ecological Effects Branch/HED

Raymond Matheny *Raymond W. Matheny 8/12/80*
Head, Review Section 1
Ecological Effects Branch/HED

Clayton Bushong *Clayton Bushong 8/12/80*
Branch Chief
Ecological Effects Branch/HED