PP-K540
TAR-1263

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

001263

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

DATE: December 1, 1981

SUBJECT: PP#2217 EUP-2 - Experimental Use Permit for the use of the herbicide TARGET on wheat, oats, barley, rye and corn. (crop destruct) CASWELL Nos. 295, 557C and 559

FROM: Charles Frick, Toxicologist C.F. 12/1/81 FLC 12/8/81
Toxicology Branch/HED (TS-769)

TO: Ms. Willa Garner (23)
Registration Division (TS-767)

THRU: Dr. Orville E. Paynter, Chief
Toxicology Branch/HED (TS-769)

Recommendation:

Toxicology Branch cannot envision any overt hazard associated with the implementation of this action request.

Petitioner:

PBI/Gordon Corp., 300 S. Third, Kansas City, Kansas

Proposed Program:

This application is for a "crop destruct" EUP.

Broadleaf weeds competing with corn and cereal crops will be treated with TARGET at rates of 15-20 fluid ounces per acre. In all cases, post-emergent application will be made on small replicated plots with ground equipment primarily being hand-held and tractor-mounted booms. It is requested this EUP be effective for a 12 month period with the possibility of extending the period if commercial registration has not be authorized.

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The following states are to be involved in the testing program: Oregon, Washington, Idaho, Montana, North Dakota, Minnesota, Wisconsin, Nebraska, Kansas, Missouri, Illinois and Iowa.

A total of 65 gallons is required for this program, representing five gallons per state and a total maximum treatment area of 32 acres per state.

Because a tolerance does not yet exist for residues of TARGET on grains, PBI/Gordon will oversee the destruction of all treated plants. Unusod treated crops will be either tilled under or gathered and burned. Retained crop samples will be incinerated after laboratory analysis, except in the case where retention of samples is desirable.

Formulation: TARGET

Commercial Component	Amount of Each Component	Percent by Weight	Purpose in Formulation
MCPA Acid, [redacted]	[redacted]	24.17%	Herbicides
Technical Mecoprop, [redacted]		10.83	Herbicides
[redacted]		5.42	Herbicides (Dicamba)

MANUFACTURING PROCESS INFORMATION IS NOT INCLUDED

This following studies were conducted with the formulation EH 541 Target (B-104) - a liquid. One ml was reported to weigh 1.195 gm.

All studies were conducted by Hilltop Research Inc., Miamiville, Ohio. Reference No. 79-445-21 and 79-446-21.

Acute Oral LD_{50} (Rat)

Protocol

The test sample was administered orally by stomach tube to five groups each composed of 5 male and 5 female Sprague-Dawley derived albino rats. The weight range for the male rats was 212 to 256 grams and for the female rats was 164 to 195 grams. The animals were acclimated for at least 5 days before dosing.

The sample was administered undiluted at dosage levels of 0.50, 1.00, 2.00, 4.00 and 8.00 grams per kg of body weight. The specific gravity of 1.195 gm necessitated use of dosage factors of 0.42, 0.84, 1.67, 3.35 and 6.69 ml/kg.

Animals were fasted for approximately 18 hours prior to dosing. The animals were observed for gross signs of systemic toxicity and mortality three times daily thereafter for a total of 14 to 15 days. Gross necropsies were performed on the animals that died. Seven days following dosage the surviving animals were weighed. At the end of the 14-15 day observation period the surviving rats were weighed and sacrificed. Gross necropsies were performed.

Results

MALES — TIME OF DEATH

Dose g/kg		Min. (1)	Hours (3)	Hours (7)	Days (1)	Days (2)	Days (3)	Days (4)	Days (5)	Days (6)	Days (7-14)	Days (15)
0.50	undiluted	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5
1.00	undiluted	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	
2.00	undiluted	0/5	0/5	2/5	4/5	5/5						
4.00	undiluted	0/5	0/5	4/5	5/5							
8.00	undiluted	0/5	4/5	5/5								

FEMALES — TIME OF DEATH

Dose g/kg		Min. (1)	Hours (3)	(7)	Days (1)	(2)	(3)	(4)	(5)	(6)	(7-14)	(1
0.50	undiluted	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/
1.00	undiluted	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	0/5	
2.00	undiluted	0/5	0/5	1/5	3/5	3/5	3/5	3/5	3/5	3/5	3/5	
4.00	undiluted	0/5	0/5	1/5	5/5							
8.00	undiluted	0/5	0/5	1/5	5/5							

Conclusion:

The acute oral LD_{50} (lethal dose for 50% of the animals) of EH 541 Target (B-104) for male Sprague-Dawley derived rats is 1.41 g/kg; 95% confidence limits could not be calculated due to the all-or-none nature of the mortality at these dosage levels.

The acute oral LD_{50} of EH 541 Target (B-104) for female Sprague-Dawley derived rats is 1.87 g/kg with 95% confidence limits of 1.33 g/kg and 2.62 g/kg.

The acute oral LD_{50} of EH 541 Target (B-104) for Sprague-Dawley derived rats (both sexes combined) is 1.62 g/kg with 95% confidence limits of 1.35 g/kg and 1.95 g/kg.

Toxicity Category - III

Study Classification - Core-Guideline

Dermal LD_{50} - Rabbit

The test material was applied to the skin of one group composed of five male and five female New Zealand White rabbits, weight range 2254 to 2941 gm.

The animals were acclimated to the laboratory at least six days before being dosed.

The dose was applied to the abdominal skin area from which the fur had been removed.

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The abdominal skin area of all of the rabbits was abraded. The undiluted sample was applied at a minimum dosage level of 2.0 gm/kg of body weight. The test sample was kept in contact with the skin on at least 10% of the body surface. A double layer of gauze was wrapped around the trunk of the animal to help keep the test substance in contact with the skin. A control group composed of five male and five female rabbits of the same strain and from the same supplier was used in this study - weight range of 2252 to 2937 gm. At the end of the 24-hour exposure period the binder was removed and any unabsorbed sample remaining on the skin was removed by sponging. Each test and control animal was examined for gross signs of systemic toxicity four times during exposure and for dermal irritation on exposure completion. All animals were maintained for 14 days following exposure period. Examinations for gross signs of systemic toxicity and dermal irritation were carried out twice daily during this period. At the end of the 14-day observation period the rabbits were weighted, sacrificed and a gross necropsy was performed on each animal. Skin specimens were examined histopathologically.

Results

No mortalities occurred at the dosage level tested.

Irritative and systemic effects observed in the test animals included erythema, edema atonia, desquamation, swollen nictitating membranes, and emaciation.

Gross necropsies - Not extraordinary

Dermal LD_{50} = > 2.0 gm/kg

Toxicity Category - III

Study Classification - Core-Minimum

Primary Dermal Irritation Study

Five-tenths milliliter of the undiluted test material was applied under a one-inch square surgical gauze patch, to two intact skin areas and two abraded skin areas on each of six New Zealand White rabbits.

At the end of the 24-hour exposure period, the patches was removed and any residual material was removed. The reactions were scored immediately after removal of the patches (24 hour reading), and again two days later (72-hour reading), and daily through six days after application.

Results

Primary Irritation Index = 1.54

No irritation noted on day six.

Some irritation noted at 72 hours.

Toxicity Category - III

Study Classification - Core-Guideline

Eye Irritation Study

Nine New Zealand White rabbits were utilized in this study. One-tenth ml of the test material was applied to the right eye of each of the rabbits. The left eyes were untreated and served as controls. The treated eyes of six were left unrinsed, the treated eyes of three rabbits were rinsed after 30 seconds for 60 seconds with tapwater. Examinations for gross signs of eye irritation were made at 24, 48 and 72 hours also 4, 7, 10, 13, 16, 19 and 21 days after application. Scoring was according to Draize.

Results

Non-Rinsed Eyes

Irritative effects included corneal opacity, iritis, conjunctival erythema, swelling, discharge, blisters under the eyelids, and hair loss around the eyes in all rabbits.

Other effects noted included lesions on the eyelids, blood like discharge, vascularization, and enclosing of the cornea by the conjunctiva. Corneal opacity completely reversed in only one rabbit by the twenty-first day following application.

Rinsed Eyes

Corneal opacity did not completely reverse in any rabbit within 21 day after application.

Toxicity Category - I

Study Classification - Core-Guideline

Enclosed: Data available on active components of this formulation. Label reviewed and signal word appropriate for eye hazard.

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