

US EPA ARCHIVE DOCUMENT

080804

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EEE BRANCH REVIEW

DATE: IN 9/16/77 OUT 2/4/78 IN _____ OUT _____
FISH & WILDLIFE ENVIRONMENTAL CHEMISTRY EFFICACY

FILE OR REG. NO. 100-544

PETITION OR EXP. PERMIT NO. _____

DATE DIV. RECEIVED _____

DATE OF SUBMISSION _____

DATE SUBMISSION ACCEPTED _____

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

DATA ACCESSION NO(S). 23184

PRODUCT MGR. NO. (25) Taylor

PRODUCT NAME(S) Promet~~y~~on

COMPANY NAME Ciba-Geigy

SUBMISSION PURPOSE Data Submission

CHEMICAL & FORMULATION 2,4-Bis(isopropylamino)-6-methoxy-s-Triazine

100.0 Pesticidal Use

Prometon is a herbicide used to control weeds. The formulated product Pramitol 25E is a non selective herbicide that can be applied in water or oil before or after plant growth begins.

100.1 Application Methods

This request is for a review of data for this product. The Technical and its formulation are registered. At this time a discussion of Application Methods, Rates, etc., is not germane.

101.0 Chemical and Physical Properties

101.1 Chemical Name

2,4-Bis (isopropylamino)-6-Methoxy-S-Triazine

101.0 Common Name

Prometone
Pramitol 25E

103.0 Toxicological Properties

103.1 Acute Toxicity

103.1.2 Bird

DATA REVIEW NUMBER: ES C1

TEST: Avian Acute Oral LD₅₀

SPECIES: Mallard Duck (*Anas platyrhynchos*)

RESULTS: LD₅₀ = 3157 mg/kg (1605.3-6211.2 mg/kg) 95% C.L.
LD₁₀ = 622.3 mg/kg (238.8-1621.5 mg/kg) 95% C.L.
LD₉₀ = 16022.4 mg/kg (3127.1-82093.7 mg/kg) 95% C.L.

The symptoms of toxicity preceding death included depression, wing droop, loss of coordination, prostrate posture, loss of righting reflex, convulsions, salivation and shallow and rapid respiration. The first death occurred within 15 minutes of dosing at 4640 mg/kg.

CHEMICAL: Prometon Technical

TITLE: Acute Oral LD₅₀ - Mallard Duck
Prometon Technical

ACCESSION NO. 23184

STUDY DATE: October 18, 1976

RESEARCHER: Robert Fink, Wildlife International

REGISTRANT: Ciba-Geigy

VALIDATION CATEGORY: ~~Supplemental~~ Core

CATEGORY REPAIRABILITY: The age of birds in this study was 14 days and basic data requirements call for test birds to be young adults. *However study is acceptable in light of C+E's decision on LD₅₀'s > 3000ms*

#TC
VALIDATOR: Tom O'Brien 2/3/78

Mallard Acute
 Oral Prometon
 Tech - 215.
 Wildlife Int.
 E.
 IC.

Mallard Acute
 Oral Prometon
 Tech
 Wildlife Int.
 #64.
 E.
 IC.

464.
 C.
 IC.

1000.
 E.
 IC.

1000.
 E.
 IC.

2150.
 4.
 IC.

2150.
 4.
 IC.

4640.
 E.
 IC.

4640.
 E.
 IC.

2.219 M
 -2.747 YINT
 2.823 LW M
 0.901 CHI²

2.141 M
 -2.481 YINT
 2.931 LW M
 0.779 CHI²

3097.816 LD50
 1783.298 LDCL
 5381.300 UPCL

3118.501 LD50
 1754.361 LDCL
 5543.357 UPCL

819.101 LD10
 411.380 LDCL
 1630.918 UPCL

785.607 LD10
 358.781 LDCL
 1720.209 UPCL

11715.840 LD90
 3659.389 LDCL
 37509.240 UPCL

12379.023 LD90
 3385.521 LDCL
 45263.398 UPCL

103.1.3 Fish

DATA REVIEW NUMBER: ESG1

TEST: Fish Acute 96 Hour LC₅₀ (Cold Water)

SPECIES: Rainbow Trout (Salmo gardneri)

RESULTS: 48 hr LC₅₀ > 18 ppm
96 hr LC₅₀ = 20 ppm (10.4-38.4) 95% C.L.

The fish exposed to Prometone at 18 and 10 ppm showed dark pigmentation.

CHEMICAL: Prometone (99.2% a.i.) Acetone Solvent Used

TITLE: Prometone Safety Evaluation on Fish and Wildlife (Bobwhite Quail, Mallard Ducks, Rainbow Trout, Goldfish and Sunfish).

ACCESSION NO. 231814

STUDY DATE: November 3, 1965

RESEARCHER: Woodard Research Corporation

REGISTRANT: Ciba-Geigy

VALIDATION CATEGORY: Acceptable

CATEGORY REPAIRABILITY: Fish were tested 5 per chamber. 7 test concentrations were conducted, the geometry spacing between groups was .556. Water temperature was 13°C. The mean weight of the fish was 0.9 gram and the mean length was 3.9 cm.

VALIDATOR: Tom O'Brien 2/3/78

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103.1.3 Fish

DATA REVIEW NUMBER: ESF1

TEST: Fish Acute 96 hour LC₅₀ (Warm Water)

SPECIES: Bluegill Sunfish (Lepomis macrochirus)

RESULTS: 48 hours LC₅₀ > 32 ppm
96 hour LC₅₀ > 32 ppm

The fish exposed to prometone at 32 ppm showed dark pigmentation of skin. Fish in the test concentrations and control did not have any mortality.

Acetone Solvent used.

CHEMICAL: Prometone (99.2% a.i.)

TITLE: Prometone Safety Evaluation on Fish and Wildlife (Bobwhite Quail, Mallard Duck, Rainbow Trout, Goldfish and Sunfish).

ACCESSION NO. 231814

STUDY DATE: November 3, 1965

RESEARCHER: Woodard Research Corp.

REGISTRANT: Ciba-Geigy Corp.

VALIDATION CATEGORY: Acceptable

CATEGORY REPAIRABILITY: Fish were tested 5 per test chamber, 6 test concentrations were used and the water temperature ranged between 18- and 23°C. The mean weight of the fish was 0.8 grams and the mean length 3.4 cm.

VALIDATOR: Tom O'Brien 2/3/78

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103.1.4 Aquatic Invertebrate

DATA REVIEW NUMBER: ESH1

TEST: Aquatic Invertebrate Acute Toxicity

SPECIES: Water Flea (Daphnia magna)

RESULTS: 48 hour LC₅₀ = 59.8 mg/L (52.0-68.6 ppm) 95% C.L.

Observed no effect level is 18.0 mg/l. Calculations below done by Finney Probit.

7.935	M	58.351	LD50	40.223	LD ₁₀	84.648	LD ₉₀
-9.013	YINT	51.080	LDCL	32.841	LOCL	68.760	LDCL
1.337	LW M	66.656	UPCL	49.264	UPCL	104.207	UPCL →
2.371	CHI ²						

Acetone Control Used

CHEMICAL: Prometon (Technical)

TITLE: Acute toxicity of Prometon - FL -761263 to the Water Flea Daphnia magna straus.

ACCESSION NO. 23184

STUDY DATE: June 6, 1977

RESEARCHER: Union Carbide Environmental Services
Union Carbide Corporation
Tarrytown, New York

REGISTRANT: Ciba-Geigy

VALIDATION CATEGORY: Acceptable

CATEGORY REPAIRABILITY: NA

VALIDATOR: Tom O'Brien 2/3/78

Daphnia magna
 Prometon Tech
 Union Carbide
 of Cuba - Geigy

1E.
 C.
 2C.

32.
 1.
 2C.

56.
 7.
 2C.

100.
 2C.
 2C.

7.935	M
-9.013	YINT
1.367	LW M
2.371	CHI ²
58.351	LD50
51.080	LDCL
66.656	UPCL
40.223	LD10
32.841	LDCL
49.264	UPCL
84.648	LD90
68.760	LDCL
104.207	UPCL

103.1.4 Aquatic Invertebrate

DATA REVIEW NUMBER: EST1

TEST: Shell Deposition (Marine Mollusc)

SPECIES: Oysters (Ostrea virginica)

RESULTS: Prometone i_a a concentration of 1.0 ppm did not inhibit shell growth, based upon a method of measurement of shell growth by weighing in water (Andrews J.D.)¹. No mortality was recorded in the 1 ppm Promotone concentration. A significant difference between control and treated groupd did not exist.

CHEMICAL: Prometone Technical (99.2%)

TITLE: Prometone; The Effect on Shell Growth in Oysters

ACCESSION NO. 23184

STUDY DATE: December 16, 1966

RESEARCHER: Wright, Leslie S.
Woodard Research Corporation

REGISTRANT: Ciba-Geigy

VALIDATION CATEGORY: Supplemental

CATEGORY REPAIRABILITY: No. The following discrepancies were noted. The test vessels were constructed of polyethylene, only one test level was run, an EC 50 for shell deposition was not run, and shell growth was not measured by grinding the free edge of the shell clean and then measuring new growth in the 96 hour period. Test protocol calls for measurement of shell growth by actually measuring the new growth in mm rather than measuring weight change in oysters from initiation of test until one week has passed and then making a comparison to controls.

VALIDATOR: Ton O'Brien 2/4/78

REFERENCE: ¹ J.D. Andrews, 1961. Measurement of Shell Growth in Oysters by weighing in water. Proc. Natl. Assoc. Shell Fisheries; pp. 1-11.

103.3.0 Subacute Toxicity

DATA REVIEW NUMBER: ESD1

TEST: Avian Subacute Dietary LC₅₀ (Upland Gamebird)

SPECIES: Bobwhite Quail (Colinus virginianus)

RESULTS: LC₅₀ > 20,000 ppm

Research lab calculated LC₅₀ in terms of active ingredient and determined an LC₅₀ > 5080. Toxic symptoms of Quail at 20,000 and 10,000 ppm consisted of depression. There was a significant decrease of food consumption compared to positive and negative controls. Body weight gains were reduced at 10,000 and 20,000 ppm.

CHEMICAL: Prometone 25E (25% a.i.)

TITLE: Prometone Safety Evaluation on Fish and Wildlife (Bobwhite Quail, Mallard Ducks, Rainbow Trout, Goldfish and Sunfish.)

ACCESSION NO. 23184

STUDY DATE: November 3, 1965

RESEARCHER: Woodard Research Corporation

REGISTRANT: Ciba-Geigy

VALIDATION CATEGORY: Supplemental

CATEGORY REPAIRABILITY: No. The age of quail was 6 to 8 weeks, and data requirements call for 14 day old birds. Other discrepancies noted were only 3 dose levels were used. The birds were maintained on test diet for 7 days (rather than 5) and then returned to basal diet for 3 days. The material tested was a 25% formulation and the inerts are petroleum solvents which may alter toxicity or cause repellency from the feed.

VALIDATOR: Tom O'Brien 2/3/78

103.3.0 Subacute Toxicity

DATA REVIEW NUMBER: ES E1

TEST: Avian Subacute Dietary LC₅₀ (Wild Waterfowl)

SPECIES: Mallard Duck (Anas platyrhynchos)

RESULTS: LC₅₀ = 18,000 (14286-22680 ppm) 95% C.L.

Research lab calculated LC₅₀ in terms of active ingredient LC₅₀ = 4,572 (3,629-5,761 ppm) 95% C.L. There was decreased food consumption and decreased body weight gain in all groups treated with Prometone 25E compared to both negative and positive controls.

CHEMICAL: Prometone 25E (25% a.i.)

TITLE: Prometone Safety Evaluation on Fish and Wildlife (Bobwhite Quail, Mallard Ducks, Rainbow Trout, Goldfish and Sunfish).

ACCESSION NO. 23184

STUDY DATE: November 3, 1965

RESEARCHER: Woodard Research Corporation

REGISTRANT: Ciba-Geigy

VALIDATION CATEGORY: Supplemental

CATEGORY REPAIRABILITY: The material tested was a 25% formulation. The formulated product contains over [REDACTED] which may interfere with toxicity. There was also noted a definite repellency and this may have been caused by the inerts in the formulation and not the technical.

VALIDATOR: Ton O'Brien 2/3/78

INERT INGREDIENT INFORMATION IS NOT INCLUDED

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- 104.C Hazard Assessment
- 104.1 Discussion
- 104.1.3 Adequacy of Toxicity Data

See conclusions Sec. 107.4.

- 107.0 Conclusions
- 107.4 Data Adequacy

The submitted data has been reviewed and the following decisions were reached:

A. The following studies are acceptable:

1. The warm water fish LC₅₀.
2. The cold water fish LC₅₀.
3. The aquatic invertebrate LC₅₀.

B. The following studies cannot be used to meet basic data requirements:

4. The avian acute oral LD₅₀ ~~was not acceptable because birds of a proper age were not utilized.~~ HTC
1. The avian subacute 8 day dietary for an upland game bird was not acceptable because the age of the birds, the material tested was not technical, and only 3 dose levels were utilized.
2. The avian subacute 8 day dietary for a wild waterfowl was not acceptable because the material tested was a 25% formulation rather than the technical.

Thomas F. O'Brien

Thomas F. O'Brien
2/4/78

Environmental Safety Section
EEEB-RD WH-567